ISSUE NO. 4 VOLUME 7 DATE: 20 AUG 2020

Centre for Cancer Biomarkers
Norwegian Centre of Excellence – University of Bergen

Norwegian Centre of Excellence
The Research Council of Norway

UNIVERSITAS BERGENSIS

"CAPTURING CANCER COMPLEXITY AND CLINICAL CHALLENGES"

CCBIO Newsletter

EDITOR: eli.vidhammer@uib.no

DIRECTOR'S COMMENTS

Dear all

We hope that you had a good summer and that you are now fully recharged and ready for the many scientific challenges.

Our courses and larger meetings will be mostly web-based this fall. Be sure to read about CCBIO907 on vascular biology and CCBIO905 on methods in biomarker research. For those of you who have not already signed up, the deadline is coming up shortly (Sept 1). There is a limited number of students allowed for those who want to collect credits. For CCBIO907, we are very happy and grateful once again to welcome our colleagues and friends from the Vascular Biology Program in Boston (Children's Hospital and Harvard Medical School). Thanks very much to the VBP Faculty and welcome to this virtual event in Bergen!

The Imaging Mass Cytometry Platform (Hyperion) is up and running again as most of you know, and I urge our teams to use this advanced and cutting-edge methodology in their current studies.

We are very excited that Yamila Torres Cleuren (PhD) has accepted to be a part of CCBIO as a senior research advisor (50%). Yamila has a strong background in molecular research, and we are most confident that she will be able to significantly support our researchers in their application processes and strategic considerations. Welcome!

Congratulations to Hanna Elisabet, Ragnhild and Nazar for having successfully defended their PhD work!

We also have a very sad message for you. On July 28, our previous PhD student and dear friend Lavina Ahmed passed away due to aggressive cancer. Lavina defended her thesis in 2016 (Axl as a Biomarker in Breast and Lung Cancer). She then worked at BerGenBio for a while before she moved to Sweden. Lavina was a kind and caring person with strong scientific capabilities. We will miss her!

Best regards, Lars A. Akslen, Director

Programs and Research Teams

Mechanisms of Tumor-Microenvironment 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

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

Strategic Advice
- Rolf Reed

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link.

CCBIO907 CANCER-RELATED VASCULAR BIOLOGY COURSE

CCBIO's next 2 courses will be run as web courses, as the situation requires. You therefore have the opportunity to attend in the comfort of your home office. Note that there are several lectures which are relevant for a wider audience, and we have therefore provided 2 registration links: one for those who are interested in the ECTS or course diploma, and thereby will attend the entire course, and those who are just interested in the lectures for professional updates and want to hop in and out as they please.

CCBIO907 Cancer-related vascular biology, September 21 - October 2, 2020

CCBIO907 is a 6 ECTS course that provides broad theoretical and practical understanding of basic aspects of vascular biology, cancer-related vascular biology, and other processes and diseases where vascular biology is relevant. The course presents knowledge about relationships between vascular biology, cancer progression, and diagnostic and treatment options directed towards the vasculature. Applied methods for studying vascular biology and biomarkers reflecting cancer-related vascular biology are taught. Also, the course aims to stimulate to scientific thinking, critical election and professional discussions.

CCBIO907 is part of the CCBIO-Harvard INTPART collaboration, and participants attending this course will benefit from the knowledge of researchers who have been in the frontline of vascular biology research for decades, and who are experienced lecturers at Harvard Medical School. This year, you will get to meet Edward R. Smith, Joyce Bischoff and Hong Cheng in addition to Randy Watnick and Mike Rogers, and also our local experts Reidunn Edelmann and Oddbjørn Straume.

Have a look at the preliminary scientific program, and be sure to note the times in your calendar. For those of you who want to join some lectures for professional updates, there are ample opportunities to learn about:

- Lectures on vascular biology in cancer and non-cancerous disease
- Seminars on bridging the gap between science and medicine by disease-focused research
- Fundamentals of peer review
- Crafting your pitch

Some of the lectures will also be highlighted as CCBIO Special Seminars.

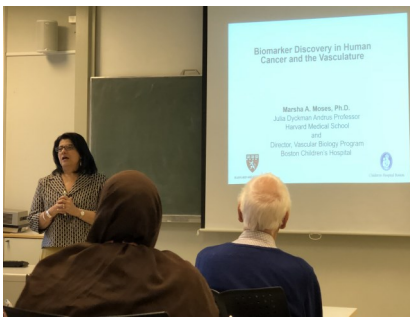
Elisabeth Wik and Lars A. Akslen have the academic responsibility, and Heidrun Vethe (Heidrun.vethe@uib.no) is the course coordinator.

Note that there are 2 registration links:

With ECTS: For those who attend the complete course, incl. group assignments, and be eligible for the 6 ECTS or a course diploma: Reg. link full course. (Now almost fully booked. Registration will be closed at no notice when maximum is reached.) Note that if you are not a registered UiB student already, you need to apply to be a guest student to get the ECTS, deadline is September 1. UiB students also need to register for the course in Studentweb.

No ECTS: For those who are only interested in the lectures for professional updates and want to hop in and out as they please (will not get ECTS or diploma): Reg. link lectures. (Still available spots.)

Read more here about the course.



Classroom settings, as here with Vascular Biology Program Director and INTPART project partner, Marsha Moses (top), Professor Diane Bielenberg (middle), and Professors Bruce Zetter and Mike Rogers (below) in the 2018/19 CCBIO907 course, will this time be digital classrooms.

CCBIO905 METHODS IN CANCER BIOMARKERS

As with CCBIO907, CCBIO905 will also be run as a web course. You therefore have the opportunity to attend in the comfort of your home office, and we have also provided 2 registration links for this course.

CCBIO905 Methods in Cancer Biomarker Research, October 27-29, 2020

CCBIO905 is a 5 ECTS course with focus on the full panel of advanced and standard methods with relevance for cancer biomarkers. The intention is a methodological course that also includes components of ethics and economy.

The thematic parts include methods ranging from basic techniques on nucleotides and proteins to more advanced approaches, as well as bioinformatics and bio-banking.

The course will focus on methods to study tissue samples, blood samples, urine samples, and other biologic materials, like immunohistochemistry, in situ hybridi-zation, PCR-techniques and sequencing, Western blot and ELISA, microarray methods, proteomics, circulating tumor cells and DNA, flow cytometry, bioinformat-ics and biobanks. Changes in nucleic acids and proteins in different settings will also be covered.

Lars A. Akslen and Jim Lorens have the academic responsibility and Ingeborg Winge (ingborg.winge@uib.no) is the course coordinator.

Program
See the preliminary scientific program here.

Note that there are 2 registration links:

With ECTS: For those who attend the complete course, incl. group assignments, and be eligible for the 6 ECTS or a course diploma: Reg. link full course.
Note that if you are not a registered UiB student already, you need to apply to be a guest student to get the ECTS, deadline is September 1. UiB students also need to register for the course in Studentweb.

No ECTS: For those who are only interested in the lectures for professional updates and want to hop in and out as they please (will not get ECTS or diploma):
Reg. link lectures.

Read more here about the course.

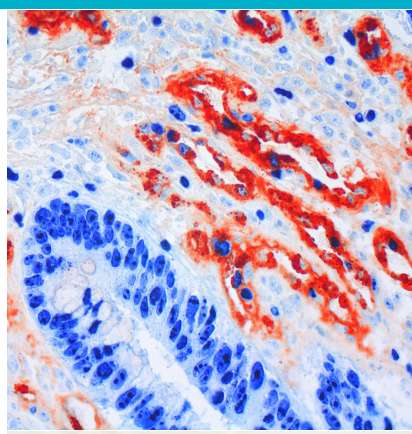


Photo: Ingvild Festervoll Melien

NEW CCBIO RESEARCH ADVISOR

Yamila Torres Cleuren recently joined CCBIO as senior research advisor in a shared position with NeuroSysMed.

Yamila has a successful track-record of securing international research grants, and she is happy to support the CCBIO members in their application needs and strategic discussions. From September 1, you can come and say hi to her at CCBIO's administration office on Mondays, Tuesdays, and Wednesdays, or anytime virtually.

Yamila is Dutch/Spanish and she's had a very international career prior to joining us. She obtained her MSc from King's College London in Biomedical and Molecular Sciences Research, and her PhD from a shared project between the University of Auckland, New Zealand and University of California Santa Barbara, USA. She came to Bergen for her postdoctoral fellowship in 2016, developing new molecular biology and bioinformatics methods to study RNA biology.

Welcome to Yamila!

COMING DOCTORAL DEFENSE

Sissel Dyrstad defends **Friday August 21 2020** her doctoral work "A study on metabolic rewiring in cancer cell plasticity". (Digital event.) Main supervisor: Professor Karl Johan Tronstad, co-supervisors: Researcher Gro Vatne Røsland and Professor Jim Lorens

Trial lecture: Friday August 21 at 10:15. Topic: "Current key players and druggable targets in tumour cell metabolism".

Doctoral defense: Friday August 21 at 12:15.
1. opponent: Associate Professor Jacob B. Hansen, University of Copenhagen, Denmark. 2. opponent: Adjunct Professor Therese Sørlie, Oslo University Hospital. 3. member of the committee: Researcher Kimberley Joanne Hatfield, University of Bergen. The defense will be chaired by Professor Emeritus Stein Ove Døskeland. Open to the public.
Zoom link to the defense: click here See also press release.

RECENT DOCTORAL DEFENSES

Hanna Elisabet Dillekås defended June 4, 2020, her doctoral work "Importance of physical trauma on recurrence of breast cancer".

Main supervisor: Professor Oddbjørn Straume, co-supervisors: Associate Professor Svein Arthur H Jensen and Professor Olav Mella.

Dillekås has studied relapse patterns and dynamics following breast cancer treatment. Patients who do not receive additional treatment after surgery, more often have a relapse pattern with many metastases (daughter tumors) of similar size early on following surgery. This may indicate that surgery stimulates synchronous growth in some patients. Furthermore, a peak of relapse was found after breast reconstruction. This may indicate that this surgery may stimulate growth of microscopic accumulations of cancer cells that were previously dormant. This effect was independent of the time from cancer treatment to reconstruction. The incidence of relapse was not greater in patients who had undergone breast reconstruction. Patients who had complications during reconstruction had a greater proportion of early relapses. As a conclusion, the dissertation points out that the surgery period is important for tumor biology and recurrence of cancer.

See press release.

Ragnhild Haugse defended June 17, 2020, her doctoral work "Molecular mechanisms of sonoporation in cancer therapy".

Main supervisor: Associate Professor Spiros Kotopoulis. Co-supervisors: Professor Emmet McCormack and PhD Anika Langer

In her doctoral work, Haugse showed that different cell types found in the microenvironment of a tumor, respond differently to ultrasound and microbubbles, and that this host is controlled by ultrasound parameters, dose and type of microbubbles. Healthy peripheral blood cells are shown to have little effect on the host. Ultrasound and microbubbles lead to changes in the transmission of signals within the cells, which are, among other, important for the regulation of cell growth/death, protein synthesis and what protein the cells produce. It is known that these signaling pathways are often misregulated in cancer cells and are important in targeted cancer treatment. Therefore, this work can help to optimize the clinical use of ultrasound and microbubbles, as well as to select the drug for combination therapy with sonoporation. It is also worth noting that these effects were observed at low ultrasound intensity which is also used for other purposes, such as diagnostic ultrasound.

See press release.

Nazar Gafar Abdulrahman Mohamed defended June 19, 2020, his doctoral work "Biomarker Identification in Oral Squamous Cell Carcinoma: Study on Cohorts of Patients from Sudan".

Main supervisor: Professor Daniela Elena Costea. Co-supervisors: Professor Anne Christine Johannessen, Professor Ahmed Sulaiman and PhD Elisabeth Sivy Nginamau.

Nazar has tested a new method for diagnosing oral cancer, aiming to find a method so cheap and easy to use that it can be used in a village in a low-income country. He tested out a so-called "electronic nose", a portable device that can detect substances from exhaled air from a person with oral cancer. He found that the electronic nose could detect oral cancer with a high degree of speci-ficity and sensitivity, and may lead to earlier diagnosis of oral cancer. He has also analyzed the types of fungi that occur in saliva from people with oral cancer and whether these are different compared to healthy people. In total, he detected a total of 102 different fungal species in the saliva. These were largely the same in the two groups. An important finding was that people with oral cancer had a composition of immune cells in the cancerous tumor that could be related to some of the fungal species in the saliva. The findings may contribute to a better understanding of how oral cancer occurs, and contribute to earlier diagnosis.

See press release.

CCBIO'S SEMINAR LIST FOR THE FALL TERM

This fall, CCBIO wants to take the opportunity to let you get more aquainted with our international faculty, and will be showcasing interesting research from some of our international colleagues. We will also be highlighting selected Boston lectures from the CCBIO907 course as Special Seminars. All fall seminars will be digital events.

August 27, Ritva Heljasvaara will be talking about "Novel roles of collagens and a11 integrin in solid cancers". See abstract and bio.

September 24, Joyce Bischoff will give a lecture on "Endothelial Anomalies in Vascular Tumors and Vascular Malformations." See abstract and bio.

September 28, Hong Chen will give the talk "Endocytic Adaptor Protein Epsin is a Gatekeeper of the Quiescent Endothelium"

September 30, Edward R. Smith will give the talk "Learning from tumor to treat stroke"

October 1, Mike Rogers will discuss "Metastasis without a tumor".

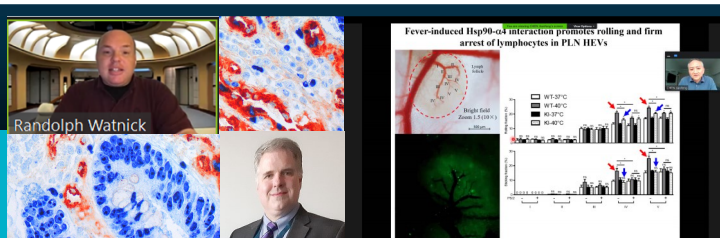
November 5, Rolf Brekken from UT Southwestern.

November 26, speaker TBA.

December 17, speaker TBA

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.



- August 27, CCBIO Seminar as Webinar, speaker Ritva Heljasvaara. Digital event.
- September 17, CCBIO Junior Scientist Symposium, Bergen, Haukeland campus (relative small group).
- September 21-October 2, CCBIO907 Cancer-related vascular biology, digital event.
- September 24, CCBIO Seminar as Webinar, speaker Joyce Bischoff. Digital event.
- September 28, CCBIO Special Seminar as Webinar, speaker Hong Chen. Digital event.
- September 30, CCBIO Special Seminar as Webinar, speaker Edward R. Smith. Digital event.
- October 1, CCBIO Special Seminar as Webinar, speaker Mike Rogers. Digital event.
- October 27-29, CCBIO905 Methods in Cancer Biomarker Research, digital event.
- November 5, CCBIO Seminar as Webinar, speaker Rolf Brekken. Digital event.
- November 26, CCBIO Junior Scientist Symposium, Bergen, Haukeland campus (relative small group).
- November 26, CCBIO Seminar as Webinar, speaker TBA. Digital event.

OTHER COMING EVENTS

- September 10, Knowledge for growth, the 16th edition of Europe's finest life sciences conference knowledge for growth, from Ghent, Belgium, now as a digital event. (Postponed, originally planned for May 28.)
- September 14-16, Science, Technology, and Society: RRI Course Digital Life Norway, Centre for Digital Life Norway, Bergen (Solstrand).
- September 21-26 and October 5-9, A hands-on introduction to artificial intelligence in computational biotech and medicine, Centre for Digital Life Norway, Bergen.
- September 24-25, Crash course in navigating your PhD or postdoc, Centre for Digital Life Norway, Trondheim.
- October 15, Helsenæring – hva nå? Kliniske studier og privat-offentlig samarbeid i koronaens tid. Digital streaming from Kaare Norum auditorium, Oslo Cancer Cluster Innovasjonspark.
- October 26-29, BIO-Europe® 2020 Digital, digital event.
- November 10-11, EHiN 2020, E-Health in Norway – Norway's largest e-health conference, Lillestrøm + digital events.

PUBLICATIONS

You can find the CCBIO publications on this pubmed link.
See the most recent 5 below.

- Obermair A, Baxter E, Brennan DJ, McAlpine JN, Muellerer JJ, Amant F, van Gent MDJM, Coleman RL, Westin SN, Yates MS, **Krakstad C**, Janda M. Fertility-sparing treatment in early endometrial cancer: current state and future strategies. Obstet Gynecol Sci. 2020 Jul;63(4):417-431. doi: 10.5468/ogs.19169. Epub 2020 Jul 8.PMID: 32689770
- Chouaib S, **Lorens J.** Editorial: Targeting the Tumor Microenvironment for a More Effective and Efficient Cancer Immunotherapy. Front Immunol. 2020 May 15;11:933. doi: 10.3389/fimmu.2020.00933. eCollection 2020.PMID: 32670262
- Tambe M, Karjalainen E, Vähä-Koskela M, Bulanova D, **Gjertsen BT**, Kontro M, Porkka K, Heckman CA, Wennerberg K. Pan-RAF inhibition induces apoptosis in acute myeloid leukemia cells and synergizes with BCL2 inhibition. Leukemia. 2020 Jul 10. doi: 10.1038/s41375-020-0972-0. Online ahead of print.PMID: 32651543
- Bjerkli IH, Hadler-Olsen E, Nginamau ES, Laurvik H, Søland TM, **Costea DE**, Uhlin-Hansen L, Steigen SE. A combined histo-score based on tumor differentiation and lymphocytic infiltrate is a robust prognostic marker for mobile tongue cancer. Virchows Arch. 2020 Jun 30. doi: 10.1007/s00428-020-02875-9. Online ahead of print.PMID: 32607687
- Hochhaus A, Gambacorti-Passerini C, Abboud C, **Gjertsen BT**, Brümmendorf TH, Smith BD, Ernst T, Giraldo-Castellano P, Olsson-Strömberg U, Saussele S, Bardy-Bouxin N, Viqueira A, Leip E, Russell-Smith TA, Leone J, Rosti G, Watts J, Giles FJ; BYOND Study Investigators. Bosutinib for pretreated patients with chronic phase chronic myeloid leukemia: primary results of the phase 4 BYOND study. Leukemia. 2020 Aug;34(8):2125-2137. doi: 10.1038/s41375-020-0915-9. Epub 2020 Jun 22.PMID: 32572189

RECENT CCBIO IN THE MEDIA

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

05.08.20, Dagbladet, "Blodprøve kan avsløre kreft", Bjørn Tore Gjertsen.

16.06.20, Agenda Magasin, "Helseprioriteringer under en pandemi", Ole Frithjof Norheim.

11.06.20, Dagens Medisin, "Mener ny behandling ikke bare kan drives av de mest entusiastiske legene", Line Bjørge.

11.05.20, Dagens Medisin, "Overlevelses-gevinst på 12 måneder", Line Bjørge.

04.06.20, LMI, "Diskuterte mulighetene for nye prioriteringssystemer i helsetjenesten", Ole Frithjof Norheim.

04.06.20, Khrono, "Rapporten om ordningen med SFF er klar. Vi er takknemlige for komiteens omfattende og grundige arbeid", Lars A. Akslen.

02.06.20, Dagens Medisin, "Norge aktivt med på ASCO", Line Bjørge.

01.06.20, Dagens Medisin, "Se livestream: Ekspertene oppsummerer årets høydepunkter fra ASCO", Line Bjørge.

01.06.20, Dagens Medisin, "Bergensforskere la frem resultater fra forskning på ny form for immunterapi", Liv Cecilie Vestrheim Thomsen.