

Translational Research, International Collaboration And Partnerships



LMI
LEGEMIDDELINDUSTRIEN

 **OsloLifeScience**
UiO University of Oslo

**PARTNERSHIP
FOR LIFE 2019**

AUDITORIUM, FORSKNINGSBYGGET, RADIUMHOSPITALET

13. FEBRUAR 2019

Institute for Cancer Research, Oslo University Hospital

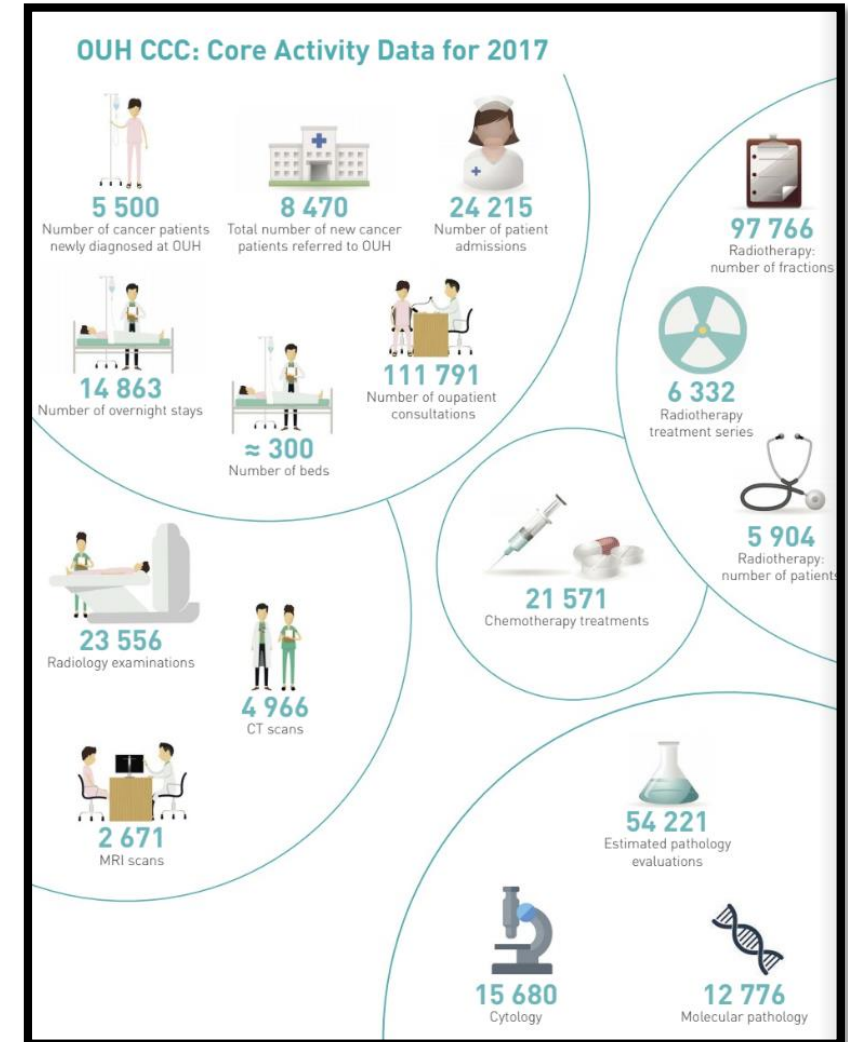


Oslo University Hospital - Cancer Treatment and Care

A large cancer center by European standards

Well established ecosystem for cancer research

- Section for Clinical Research including Phase I unit
- The Norwegian Cancer Registry
- Innovation and start-up infrastructure (Inven2 and Oslo Cancer Cluster)
- Large biobank resources (breast, lung, CRC, prostate, lymphoma, sarcoma)



Oslo University Hospital - Cancer Treatment and Care

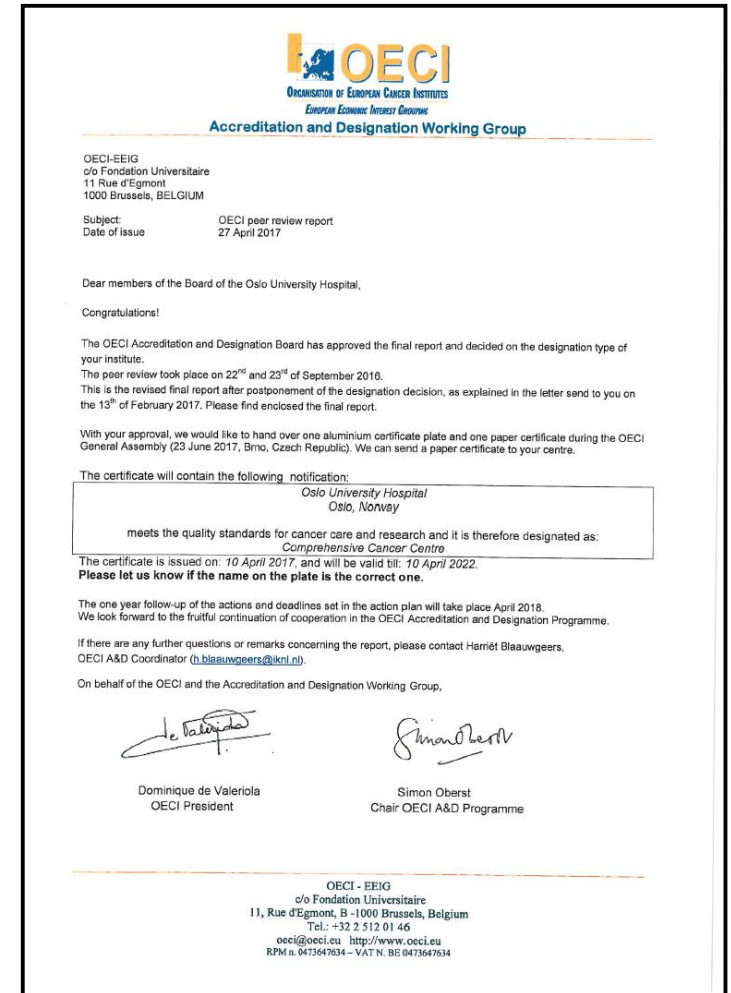
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Comprehensive Cancer Centre status

- issued April 10, 2017, valid until 10 April 2022.



Institute for Cancer Research

The Institute for Cancer Research

- Established 1954.
- Seven research departments, 320 OUH employees, approx. 100 UiO employees
- About 70% of employees / projects externally funded

Research activities – from basic to translational

- Across tumor types: breast, colorectal, lymphoma, sarcoma, prostate and lung
- All clinical trial phases
- Immunotherapy, GMP facility

State-of-the-art instrumentation and Core Facilities

- Flow cytometers (BD LSRII x2) and sorters (BD Aria, Sony)
- Mass-spec cytometer (Fluidigm CyTOF2)
- Magnetic Resonance Imaging (Bruker Biospec 7T)
- IVIS (Perkin Elmer), X-ray imager/irradiator (RPS Faxitron Multirad 225i)
- Confocal microscopes (Zeiss LSM710 and LSM880)
- High resolution microscope (GE OMX V4 3D-SIM)
- Electron microscopes (JEOL 1230 (120 kV TEM), Philips CM10 (100 kV TEM))
- Full range of Illumina sequencers and genotyping/methylation solutions
- Single cell instrumentation for sequencing applications
- NanoString technology

Cancer genetics
Therese Sørli

Molecular Cell biology
Harald Stenmark

Cancer Immunology
Johanna Olweus

Head of Institute
Kjetil Taskén

Molecular Oncology
Ragnhild A. Lothe

Radiation Biology
Kristian Berg

Tumor Biology
**Gunhild M.
Mælandsmo**

Core Facilities
**Leonardo Meza-
Zepeda**

Institute for Cancer Research

Cancer Genetics

- Genetic/molecular cancer classification and pan-cancer analysis
- Decipher inter and intra tumoral heterogeneity

Cancer genetics
Therese Sørli

Molecular Cell Biology

- Cancer-relevant cell biology, including membrane trafficking, receptor signaling, cell division

Molecular Cell biology
Harald Stenmark

Cancer Immunology

- Molecular regulation of immune cells and development of immunotherapeutic strategies

Cancer Immunology
Johanna Olweus

Molecular Oncology

- Decipher spatio-temporal tumor heterogeneity in prostate-/colorectal cancer
- Biomarker discovery, including bladder cancer and cholangiocarcinoma

Head of Institute
Kjetil Taskén

Molecular Oncology
Ragnhild A. Lothe

Radiation Biology

- Biological responses to ionizing and non-ionizing radiation, including gamma-radiation, proton therapy

Radiation Biology
Kristian Berg

Tumor Biology

- Biological mechanisms involved in cancer metastasis and progression

Tumor Biology
**Gunhild M.
Mælandsmo**

Core Facilities

- Provide service and take a leading role in establishing and developing new technologies

Core Facilities
**Leonardo Meza-
Zepeda**

Oslo University Hospital Radiumhospitalet - 2024



Scientific excellence

2017

- External competitive funding = 206 MNOK
- 220 articles published with mean IF 6

Convergence and Technologies

Cancer Research

Combined MR Imaging of Oxygen Consumption and Supply Reveals Tumor Hypoxia and Aggressiveness in Prostate Cancer Patients

Tord Hompland¹, Knut Håkon Hole², Harald Bull Ragnum^{1,3}, Eva-Katrine Aarnes¹, Ljiljana Vlatkovic⁴, A. Kathrine Lie⁴, Sebastian Patzke¹, Bjørn Brennhovd⁵, Therese Seierstad², and Heidi Lyng¹



nature
International journal of science

Letter | Published: 11 January 2017

Microenvironmental autophagy promotes tumour growth

Nadja S. Katheder, Rojyar Khezri, Fergal O'Farrell, Sebastian W. Schultz, Ashish Jain, Mohammed M. Rahman, Kay O. Schink, Theodossis A. Theodossiou, Terje Johansen, Gábor Juhász, David Bilder, Andreas Brech, Harald Stenmark & Tor Erik Rusten

nature
COMMUNICATIONS

ARTICLE

DOI: 10.1038/s41467-017-00510-x

OPEN

DNA methylation at enhancers identifies distinct breast cancer lineages

Thomas Fleischer¹, Xavier Tekpli^{1,2}, Anthony Mathelier^{1,3}, Shixiong Wang³, Daniel Nebdal¹, Hari P. Dhakal⁴, Kristine Kleivi Sahlberg^{1,5}, Ellen Schlichting⁶, Oslo Breast Cancer Research Consortium (OSBREAC), Anne-Lise Børresen-Dale¹, Elin Borgen⁴, Bjørn Naume⁶, Ragnhild Eskeland^{7,8}, Arnoldo Frigessi⁹, Jörg Tost¹⁰, Antoni Hurtado^{1,3} & Vessela N. Kristensen^{1,2,11}

SHARE

REPORT

Targeting of cancer neoantigens with donor-derived T cell receptor repertoires



71



Erlend Strønen^{1,2}, Mireille Toebes³, Sander Kelderman³, Marit M. van Buuren³, Weiwen Yang^{1,2}, Nienke van Rooij³, Marco Donia⁴, Maxi-Lu Böschchen^{1,2}, Fridtjof Lund-Johansen^{2,5}, Johanna Olweus^{1,2,*}, Ton N. Schumacher^{3,*},†



European Association of Urology

Prostate Cancer

Multifocal Primary Prostate Cancer Exhibits High Degree of Genomic Heterogeneity

Marthe Løvfi^a, Sen Zhao^a, Ulrika Axcrona^b, Bjarne Johannessen^{a,c}, Anne Cathrine Bakken^a, Kristina Totland Carm^a, Andreas M. Hoff^a, Ola Myklebost^{c,d,e}, Leonardo A. Meza-Zepeda^{d,f}, A. Kathrine Lie^b, Karol Axcrona^g, Ragnhild A. Lothe^{a,c}, Rolf I. Skotheim^{a,c,*}



Translational studies

Clinical Cancer Research

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Cancer Therapy: Clinical

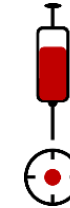
Complete Remission with Reduction of High-Risk Clones following Haploidentical NK-Cell Therapy against MDS and AML

Andreas T. Björklund, Mattias Carlsten, Ebba Sohlberg, Lisa L. Liu, Trevor Clancy, Mohsen Karimi, Sarah Cooley, Jeffrey S. Miller, Monika Klimkowska, Marie Schaffer, Emma Watz, Kristina Wikström, Pontus Blomberg, Björn Engelbrekt Wahlin, Marzia Palma, Lotta Hansson, Per Ljungman, Eva Hellström-Lindberg, Hans-Gustaf Ljunggren, and Karl-Johan Malmberg



EMIT
IBCT
NeoAVA

Monitoring Bladder cancer by urine analyses



MetAction

Actionable Targets in Metastasis

About MetAction in «VG»

Norske forskere med nytt gjennombrudd: Spesialbehandling gir håp for kreftpasienter

RADIUMHOSPITALET (VG) Ny metode kan hjelpe kreftpasienter som ikke lenger har effekt av standardbehandling. Grethe Halvorsen (68) reddet livet med målrettet medisin.

Cellegift kombinert med immunterapi til brystkreftpasienter (ICON)

Fungerer cellegift i kombinasjon med immunterapi bedre enn cellegift alene mot brystkreft?



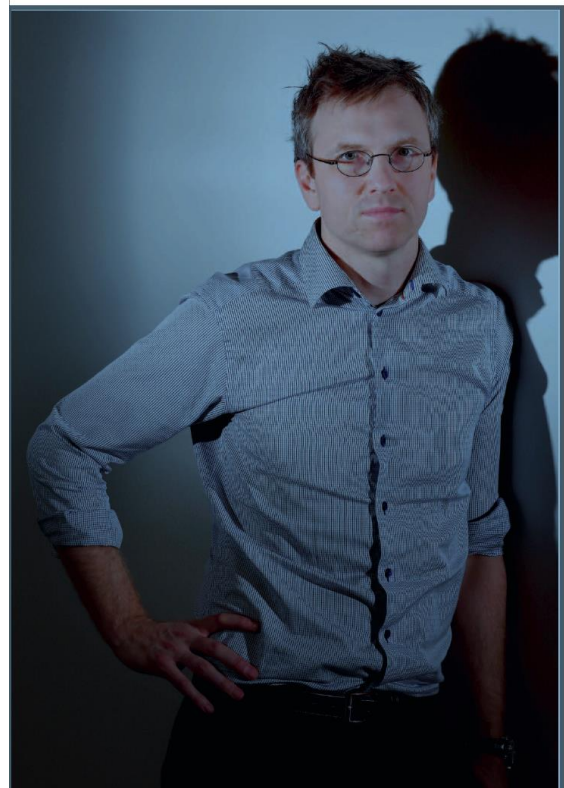
Innovation

Licencing and research agreement Fate Therapeutics
(Finansavisen 2017)

Research agreement Kite Pharma (Finansavisen Oct 2017)

LISENSAVTALE AMERIKANSKE FADE KJØPER LISENS PÅ NORSK KREFTBEHANDLING

Kreftforsker med kjempeavtale



HELSE: Den svenske kreftforskeren Karl-Johan Malmberg flyttet til Oslo for å gå på ski. Nå skal han utvikle kreftmedisin for amerikanske Fate Therapeutics som kan innbringe mange hundre millioner.

STEINAR GRUNN
Toppredsjef i børsnoterte Fate har reist over Atlanteren til Oslo. I dag kikkstartet de et prosjekt på Holmenkollen Park Hotel der Karl-Johan Malmberg samarbeider med internasjonale toppforskere skiløyper og dypt kreftfaglige. Forsøpet har Fate betalt et mindre millionbeløp, men prosjektet vil, hvis det lykkes, innbringe flere hundre millioner kroner til Oslo universitetssykehus.

Det samme vil kunne tilfalle Inven som driver kommersialisering av noen sykdomsforskning, for den siste tredjedel vil tilfalle Malmberg selv i tillegg til kolleger.

Hyllevare for alle
Malmbergs forskning handler om immunterapi. Mens dagens immunbehandling kun virker på et fåtall pasienter, vil Malmbergs plattform bli universell og virke på et større flertall.

Billig immunbehandling
En førstegenerasjon av dette behandlingsprinsippet er foreløpig testet klinisk på personer med svært lovende resultater. Malmberg kommer opprinnelig fra Karolinska Institutet i Sverige, der han først er gjeistprofessor med ansvar for fem forskere, men er nå overført til universitetet.

vil kunne brukes av de fleste kreftpasienter. Dermed unngår man dyr personilpasset behandling slik at



(19) **United States**
(12) **Patent Application Publication** (10) Pub. No.: **US 2018/0023147 A1**
Lind et al. (43) Pub. Date: **Jan. 25, 2018**

(54) **METHODS AND BIOMARKERS FOR DETECTION OF BLADDER CANCER** (60) Provisional application No. 61/394,478, filed on Oct. 19, 2010.

(71) Applicant: **OSLO UNIVERSITETSSYKEHUS HF, Oslo (NO)**

Publication Classification

(72) Inventors: **Guro Elisabeth Lind, Oslo (NO); Ragnhild A. Lothe, Oslo (NO); Rolf Inge Skotheim, Oslo (NO); Carmen Jeronimo, Maia (PT); Vera L. Costa, Aulnay-sous-Bois (FR); Rui Henrique, Maia (PT); Manuel R. Teixeira, Vila Nova de Gaia (PT)**

(51) Int. Cl. **C12Q 1/68** (2006.01)

(52) U.S. Cl. **1/68**

(21) Appl. No.: **15/728,008**
(22) Filed: **Oct. 9, 2017**

Related U.S. Application Data

(63) Continuation of application No. 13/879,545, filed on Apr. 24, 2013, now Pat. No. 9,797,016, filed as application No. PCT/IB2011/002846 on Oct. 19, 2011.

(57)

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International grants and partnerships in EU



FET-Open

Future and Emerging Technologies
2018

Acronyme: FRINGE

Coordinator: Theo Theodossiou

Support: 4 mill. Euro, 8 partners

ERC Advanced Grant for the second time to CanCell director Harald Stenmark

We congratulate Harald Stenmark with being awarded the prestigious ERC Advanced Grant for the second time!

Through this grant from the European Research Council, Stenmark's research project "Coincidence detection of proteins and lipids in regulation of cellular membrane dynamics (CODE)" is supported with 2.5 million Euros over a 5-year period.

The European Research Council funds outstanding researchers and excellent ideas.

Read more:

[Prestigious award of EUR 2.5 million for cancer research](#)

[ERC AdG for andre gang til Stenmark](#) (in Norwegian)



Professor Harald Stenmark



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MATURE-NK

Project ID: 765104



Partnerships in National Centers of Excellence

K.G. Jebsen Centre for B cell malignancies

K.G. Jebsen Centre for Cancer Immunotherapy



K.G. JEBSEN COLORECTAL CANCER RESEARCH CENTRE

Responsibility towards society and the hospital

- Competence hub – expertise to be maintained and developed
- Research on all major cancers spanning from basic to translational studies
- Explore current and cutting-edge strategies for diagnosing and treating cancer
- Focus on patient benefit and translation
- Partner with clinical environments and integral part of OUH – CCC

Institute for Cancer Research, Oslo University Hospital

