Research seminar:

The Olav Thon Foundation’s International Research Award for 2018

March 8th, 2018
DM4, The Rotunda, University of Oslo (UiO)
Research seminar:
The Thon Award

The Olav Thon Foundation's international research award for 2018.
March 8th, 2018 at 11:30 – 15:00
DM4, The Rotunda at University of Oslo (UiO), Gaustad.

Organized by
Ole Petter Ottersen, Head of the Scientific Council OTF/ Rector Karolinska Institute
Erlend A. Nagelhus, Pål Gunnar Larsson, Fernanda Cristina Petersen UiO
Gry Kolbjørnsen, Bjørnar Vold-Sarnes, Monica Lihus Ambrosen UiO

Sponsored by:
The Olav Thon Foundation distributes for 2018, a total of NOK 42 million. This is divided between one international research award, five national awards for excellence in teaching in higher education, three Nordic research projects in medicine and three national projects for student active research.

**Winner of the Olav Thon Foundation International Research Award 2018**

**Professor emerita Riitta Hari** is the winner of this year’s international research award of the Olav Thon Foundation. She is a highly recognized researcher in the study of the human brain, and has been behind several breakthroughs in this field. Professor Hari completed her doctorate in medicine at the University of Helsinki in 1980. She has worked at Aalto University, where she was the director of the brain research unit, the O. V. Lounasmaa Laboratory, from 1982 to 2016.

Riitta Hari has studied the electrical currents that naturally occur in the brain using instruments – so-called magnetometers – developed at the O. V. Lounasmaa Laboratory for low temperature physics. These instruments must be very sensitive in order to capture the particularly weak currents that brain activity generates.

More recently, Riitta Hari has been pushing for what we might call “two-person neuroscience.” In a social context, our brain rarely acts “alone”, but rather in a mutual interaction with the brains of one or more persons in our immediate vicinity. The neuroscience basis for social interaction can be studied by analysing the brain activity of two people who interact. Riitta Hari’s group was one of the first (2012) to combine MEG units for simultaneous registration of brain activity in two people. This type of research opens up great opportunities and connects classic neuroscience to the social sciences.

**Recipients of Olav Thon Foundation grants for Nordic research projects in medicine 2018**

Olav Thon Foundation grants to Nordic research projects in medicine, with a focus on antimicrobial resistance (AMR), are given to the following three projects:

1. **Development of antibiotic resistance in bacterial biofilms**

   Coordinator: Professor Dan I. Andersson, University of Uppsala, Sweden. Partners: Professor Hanne Ingmer, University of Copenhagen, Denmark, Professor Pål Jarle Johnsen, University of Tromsø, Norway.

Winners of the Olav Thon Foundation’s international and national awards, and recipients of financial support for Nordic and national research projects in mathematics/natural sciences and medicine 2018
The project is on how bacteria in biofilms become resistant to antibiotics and how antibiotics affect biofilm formation; this will be investigated in the context of antibiotic concentration, HGT and mechanisms by which resistance evolves in biofilms.

This is an important and relevant question - especially because antibiotic recalcitrant bacterial pathogens often present themselves in biofilms - which will be comprehensively addressed in this project.

The project has duration of four years and is given total grant of NOK 10 million.

2. Discovering new therapeutic targets and drugs to combat AMR tuberculosis: proteomics characterization and drug screening of mycobacterium – infected macrophages

Coordinator: Professor Trude Helene Flo, NTNU, Norway. Partner: Ass. Professor Maria Lerm, University of Linköping, Sweden.

The project is on using phagolysosomal markers to characterise to identify characterise host and Mtb/Ma genetic factors that support and prevent mycobacterial presence/growth (WP1&2) – this represents the USP of this application; In WP3, the role and contribution of these factors in mycobacterial disease progression will be evaluated, potentially leading to the identification novel bacterial targets or host factors for therapeutic intervention. In WP4, which is largely independent on WPs1-3, the plan is to use an imaging based method to identify potential compounds (from libraries available in the public domain) that antagonize Mtb/Ma.

The project has duration of four years and is given total grant of NOK 10 million.


Coordinator: Professor Fernanda Petersen, University of Oslo, Norway. Partners: Professor Gorm Greisen, University of Copenhagen, Denmark, Professor Anders Håkansson, University of Lund, Sweden.

The project is a clinical study to (a) understand how the (respiratory) microbiome develops in pre-term infants that have be exposed to antibiotic treatment vs. no antibiotic treatment and (b) the potential of human milk protein HAMLET to prevent dysbiosis and thus enrichment of antibiotic resistant bacteria. This project has huge societal value, substantially enhances medical knowledge in the area of respiratory microbiome and demonstrates translation (part b).

The project has duration of four years and is given total grant of NOK 10 million.
2 Speakers

Riitta Hari
Professor Emerita
Aalto University, Helsinki Finland
Winner of the Olav Thon Foundation International Research Award 2018.

Pål Gunnar Larsson
Head of Clinical Neurophysiology
Oslo University Hospital, Norway

Trude Helen Flo
Professor, Department of Clinical and Molecular Medicine, NTNU, Norway
Recipient of Olav Thon Foundation grant for Nordic research projects in medicine 2018

Pål Jarle Johnsen
Professor, Department of Pharmacy,
University of Tromsø, Norway
Recipient of Olav Thon Foundation grant for Nordic research projects in medicine 2018

Fernanda Cristina Petersen
Professor, Department of Oral Biology, University of Oslo, Norway
Recipient of Olav Thon Foundation grant for Nordic research projects in medicine 2018
11:30 Coffee/Tea - presentations ready

12:00 **Ole Petter Ottersen**, Head of the Olav Thon Foundation scientific council and Vice-chancellor of Karolinska Institutet, Stockholm, Sweden: Welcome, introduction of the Thon awards and the legacy of the Thon awardees.

12:05 **Pål Gunnar Larsson**, Head of Clinical Neurophysiology at Oslo University Hospital: Introduction of the 2018 Thon international research awardee

12:15 **Riitta Hari**, professor emerita, Aalto University, Helsinki, Finland: “The brain in time”

13:00 Lunch served by Hotel Bristol

13:45 **Pål Jarle Johnsen**, professor, University of Tromsø, Norway: “Development of antibiotic resistance in bacterial biofilms”?

14:10 **Trude Helen Flo**, professor, NTNU, Trondheim, Norway: “Discovering new therapeutic targets and drugs to combat AMR tuberculosis: proteomics characterization and drug screening of mycobacterium-infected macrophages”

14:35 **Fernanda Cristina Petersen**, professor, UiO, Norway: “Born in the twilight of antibiotics: fighting antimicrobial resistance in preterm infants”
Other awardees

Winners of the Olav Thon Foundation National Award for Excellence in Education 2018

1. Professor Karl Inne Ugland, Department of Biosciences, University of Oslo
2. Professor Atle Rotevatn, Department of Earth Science, University of Bergen
3. Professor Morten Hjorth-Jensen, Department of Physics, University of Oslo
4. Professor Helge Drange, Geophysical Institute, University of Bergen
5. Professor Tone Bratteteig, Department of Informatics, University of Oslo

Each of the above receives an award of NOK 500 000.

Recipients of Olav Thon Foundation grants for student active research 2018

Olav Thon Foundation grants for student active research in medicine and/or the natural sciences/mathematics are given to the following three projects:

1) Ass. Professor Marcos Danny Caballero, Professor Anders Malthe-Sørenssen and Administrative Head Sunniva Rose, Department of Physics, University of Oslo, for the project Student-dreven forskning for bedre realfagsutdanning.

The project receives a total grant of NOK 1.5 million over three years.

2) Professor Hilde Eide and Adjunct Professor Anne Moen, University College of Southeast Norway, for the project Klinisk vurderingskompetanse – overføring av naturvitenskap til sykepleierens praksis.

The project receives a total grant of NOK 1.5 million over three years.

3) Ass. Professor Steven Ray H. Wilson, Department of Chemistry and Professor Stefan Krauss, Institute of Basic Medical Sciences, University of Oslo for the project “Organ på chip” koblet til massespektrometri: Et effektivt verktøy for å utvikle og teste legemidler.

The project receives a total grant of NOK 1.4 million over three years.