Core Lunch – CRISPR-Cas9

Wednesday the 31st of January, Eliane Piket, Alexander Espinosa and Fredrik Wermeling attracted a huge crowd on the core lunch subject CRISPR/Cas9.

The three hosts generously shared a lot of basic knowledge and practical information about how to use the technique in research.

Staff News

Tong Jiao from Harbin Medical University China has joined the group as a PhD student. Tong will work on the project “The role of red blood cells in myocardial ischemia-reperfusion injury”.

CMM Day

Thursday the 26th of April
Venue: Norra Latin
(entrance from Barnhusgatan 7A)
Abstract submission deadline: 18/4
**CMM SEMINAR**

1/3, 12:00
*Microbes and women’s reproductive health: large-scale studies at the Center for Translational Microbiome Research (CTMR)*
Speakers: Ina Schuppe Koistinen and Nele Brussalaers
Host: Louise Sjöholm

8/3, 12:00
*Immune and metabolic control of atherosclerosis*
Speaker: Daniel Ketelhuth

22/3, 12:00
*Regulatory T cell plasticity in autoimmunity: mechanisms and therapeutic opportunities*
Speaker: Margarita Domiguez-Villar, Yale School of Medicine
Host: Johan Öckinger

**DISSERTATION**

23/3, 09.00
*Immunogenicity of biopharmaceuticals in chronic inflammatory diseases*
Hermanrud, Christina
Location: CMM lecture hall, L8:00
Opponent: Dr. Joep Killestein MD, PhD.
VU University Medical Center, Department of Neurology
MS Centre Amsterdam, The Netherlands
Supervisor: Associate Professor Anna Fogdell-Hahn
Disputation: Respiratory Medicine

23/3, 09.00
*Breathe (In the air): Pulmonary immunology in multiple sclerosis*
Michael Hagemann-Jensen
Opponent: Assistant Professor Margarita Domiguez-Villar, Department of Neurology, Yale School of Medicine, New Haven, USA
Location: CMB Lecture Hall, Berzelius väg 21, Karolinska Institutet
Supervisor: Assistant Professor Johan Öckinger

**MedS/CMM SEMINAR**

29/3, 12:00
*Resolving T helper cell fate decisions using single-cell RNA-sequencing*
Speaker: Tapio Lönnberg
Host: Eduardo Villablanca

**CERIC SEMINAR**

16/3, 15:00
*Title: To be announced*
Speaker: Hervé Kempf, INSERM, Université de Lorraine
Location: Lecture Hall, CMM L8:00
Host: Magnus Bäck

23/3, 15:00
*ADAMTS Enzymes in Development and Disease*
Speaker: Timothy Mead and Christopher Koch, Dept of Biomedical Engineering, Lerner Research Institute, Cleveland Clinic
Location: Lecture Hall, CMM L8:00
Host: Ljubica Perisic Matic
Publications


Awards

Yvonne Enman, research officer at the Swedish Rheumatism association has been awarded honorary doctorate at Karolinska Institutet. Yvonne has worked for many years to promote communication between researchers and patients and her scientific writing has contributed to a public understanding of research and an understanding among researchers regarding the needs of patients. The ceremony takes place at Stockholm City Hall on 4 May 2018.

Superintendent’s Corner

As you are aware, the delayed move to Bioclinicum has an impact on CMM premises and everyone residing here as well. We appreciate the engagement and understanding you have shown us during this time of uncertainty and confusion. At CMM, we are doing everything we can to make things run as smooth as possible, being pragmatic about the situation and work things out issue by issue.

Thank you for your collaboration!
During the early 1990s, research at the Karolinska University Hospital was foremost conducted in small laboratories located in basement premises linked to the respective clinics. Although being geographically located close to the patients, the research was primarily conducted in isolation and was highly inefficient both intellectually and financially. This inadequacy was painfully highlighted by the fact that Åke Lernmark, who was appointed professor at KI at that time, did not have access to premises suitable for research. Despite his efforts to rectify this situation, Lernmark subsequently chose to move away quite soon. What was needed was a building that met both high demands with respect to infrastructure and that could also focus knowledge and methodologies into a critical mass.

At that time a new concept emerged about the notion of Molecular Medicine. A central thought was to maintain close contact between the clinics and the laboratories. A research center needed to be placed with easy access to clinically active researchers. The idea was already that short physical distances would reduce the intellectual distance between discovery and healthcare, commonly known as ‘translational research’. Professors Lars Terenius and Lars Klareskog, who are as of today still active at CMM, together with Åke Lernmark were the KI professors who lobbied for construction of such a research facility.

The production team for the building itself unconventionally comprised of only four people: professor Lars Terenius, Karl Alexandersson (White Architectural Office), Nils Brunnqvist (Staff of the KS Management) and Claes Lindblom, Master of Engineering and Construction. Claes got the project on his desk with the question: Is this good? That Claes believed in the idea of the research center is beyond doubt - one still finds him at CMM’s administration, where he is currently occupied with drawing plans on how to smoothly redesign the CMM building as it faces it largest transition of research groups with the opening of NKS’s research building BioClinicum.

The Center for Molecular Medicine (CMM) arose from an idea of gathering interdisciplinary research competence and advanced laboratories that were closely linked to the clinics and patients of the Karolinska University Hospital. Today a building stands which houses over 500 researchers and students in the hospital area. CMM has during its 20 years of operation been a bridge that connects the activities at Karolinska Institutet and Karolinska University Hospital. It is a house in which advanced molecular and cell biological activities have created the prerequisites for transforming research results into improved healthcare and quality of patient life.
Persistent political lobbying was required to bring together all parties involved in the project. A site in a parking lot was decided for CMM, but the question remained of who would pay. The plan was that the house would be partly financed through donations and the rest with loans. In order for this to be feasible, it was strategically important that the project was set up through a legally stable body, and creating a foundation thus became the preferred solution. The foundation legally borders KI and KS, both of which are significant players in the field with strict regulatory requirements in their decision-making polices. As a foundation CMM enjoys more flexibility. “CMM is a small organization with a crystal-clear mission,” says Claes Lindblom, speaking on subject of short decision-making paths. “The only thing that matters when management makes a decisions is ‘is this promoting research?’”

Those who first believed in the project were the Wallenberg Foundation,” says Lars Terenius. “They contributed to laying the groundwork, which meant a lot when we were soliciting for other funding. By the beginning of 1994 a sufficiently large donation capital had been procured and in 1997 it was time to move in. The original donation has been well managed and the return on capital is still being used to make investments in common equipment. The thought of common core equipment was included from the start. If you would like to be a part of CMM, you are expected to share your equipment. “The sum of the parts was to be something more”, Lars Terenius says.

Professor Marie Wahren-Herlenius moved early into CMM. Before that she was a research clinician at the KI Campus. During her PhD studies she used serum antibodies from patients with rheumatic diseases as tools in order to study cell biological processes. Evolution of such autoantibodies that are directed to self-tissues is a hallmark of these diseases. Following completion of her thesis Marie hade formed her own research group and her interest in the clinical implications of her research program grew. “I wanted to understand what these autoantibodies were doing in patients with rheumatic diseases, and focused on Sjögrens disease. The move to CMM provided us an excellent environment closer to the clinic and with an integral translational medicine infrastructure”, she says. Marie’s research discerned that a specific type of autoantibody was evident in pregnant Sjögrens disease patients that were transferred into the fetus, which subsequently developed life-threatening heart block. The result of many years of research collaboration between rheumatologists, CMM researchers and the children’s cardiac specialists has led to characterization of the underlying mechanisms of heart block, and together with child cardiologist Sven-Erik Sonesson Marie has developed tests, monitoring and treatment protocols that such pregnant mothers receive in the clinic. The prognosis for the children has increased dramatically. "In principle we don't lose any children anymore, and the time before the children require a pacemaker has been greatly increased, which is of enormous benefit to both the children and their families”, says Marie.

CMM has endeavored to bring added value to the research community. Although researchers from Karolinska Institutet and from the hospital rent their premises, CMM is more than a research hotel. The flexibility CMM has as a stand-alone foundation has allowed it to make other investments in the research collective in addition to joint equipment.

Early during its operation, Lars Terenius contacted the Torsten and Ragnar Söderberg’s foundations and conveyed the importance of investing in a clinical research program to strengthen CMM’s potential. The foundations agreed and contributed with a total of 15 million SEK, thereby ensuring that well-qualified clinicians with PhDs were given the opportunity to apply for half-time research.
positions. “In fact, the scholarship meant that I could get my first doctoral student, i.e. start my own research group. Soon my seventh doctoral student will defend his thesis. Today I am a professor with my own SRC grant” says Lou Brundin, one of the first to be awarded the clinical researcher’s scholarship. She continues: “A position of this kind is very important if you want to give a clinically active doctor the opportunity to conduct research.”

The innovative sprit of CMM has met with both its shares of successes and failures. An attempt to expand the CMM concept was made in the late 2000s, and a collaborative project with partners in China was launched. The purpose of the project was to merge the knowledge and skills of CMM with the access to patients and resources in China. Not only the proximity between research labs and the clinics, but also between researchers within different disciplines is the core strength of CMM’s model, and was a contributing factor to the fact that export to China did not work and had to be put on hold. Over the years there have been numerous investments in exchange, fundraising and innovation. Some projects have been very successful while others had to be filed away under ‘experience gained’. Despite its independent position as a foundation, it is a fact that the researchers’ employers are the Karolinska Institutet or Karolinska University Hospital, which means that in many decisions other objectives must be taken into account. CMM sees itself as a complement to Karolinska Institutet and offers alternatives in IT, leadership and web exposure. CMM is not a department, not an employer, nor a research hotel. It is a foundation that brings together talented researchers across different departments and disciplines and invites them to actively participate in the research programs together. A community such as ours will never be better than what people bring into it, both financially and intellectually.