

Crystallography Project RAMP Awarded Funding by the European Commission

NOV 10, 2016

EU Science Support. European initiative to train 12 young structural biology researchers receives €3.2 million in funding through Marie Skłodowska-Curie Actions. Instrument Scientist Esko Oksanen will supervise one researcher at ESS and co-supervise a second at Aarhus University.

The European Commission has approved funding for the Grenoble University-led RAMP (Rationalising Membrane Protein crystallization) project under the highly competitive Marie Skłodowska-Curie Actions Innovative Training Network (ITN) call in the Horizon 2020 Framework Programme for Research and Innovation. The RAMP network is a consortium of nine beneficiaries, including the European Spallation Source ERIC (ESS), and six partner organisations from academia and industry spread across eight different countries.

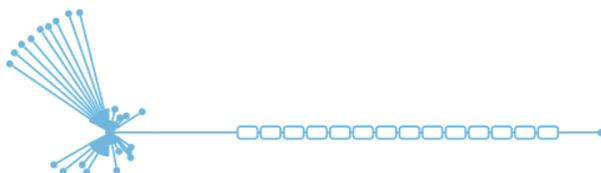
The Marie Skłodowska-Curie Actions train early-stage researchers (ESRs) across Europe, building the careers of tomorrow's leaders in research and industry. The RAMP project is currently in the Grant Preparation Phase and is expected to start early 2017. The total project budget of €3.2 M will support the research and training of 12 ESRs hosted over a four-year project period.



Developing Capacity in Structural Biology

RAMP will bring together cutting-edge physical chemistry methods developed in academia and industry to help solve some of society's most challenging biological problems. [Esko Oksanen](#), ESS Instrument Scientist for Macromolecular Crystallography and lead scientist for the ESS instrument [NMX](#), will supervise one ESR at ESS in collaboration with Grenoble University and the Ithaca, New York-based company MiTeGen. Oksanen will also co-supervise one ESR hosted at Denmark's Aarhus University.

With the structured training programme, RAMP will equip the early stage researchers with the skills needed for a successful research career in the field of structural biology. Frequent secondments, research visits and meetings between ESRs ensure an efficient exchange of ideas and practical experiences between different groups leading to better integration of European research and innovations in structural biology. Supervision and mentoring by several senior scientists will give the researchers a strong scientific education and make them highly competitive in the workplace of tomorrow. RAMP aims to



improve European competitiveness and advance graduate training in the area of structural biology.

New Crystallisation Methods Key to Optimising Use of ESS

Membrane proteins form more than 85% of drug targets, but just 600 unique membrane protein X-ray crystal structures have been determined. A better understanding of how to crystallize membrane proteins reliably is therefore urgently required. RAMP brings together expert academic and industrial research groups in crystallisation theory, methods development, membrane protein crystallography, drug development and novel structural techniques like time-resolved and neutron crystallography.

RAMP will develop new, rational methods for crystallising membrane proteins, focusing particularly on transporters that are also interesting drug targets. New robust crystallisation methods include condition control and phase diagram exploration, and the development of new reagents and crystallisation screens. These techniques will provide the necessary precise control of crystal size. [Such advancements will in turn optimise the use of emerging European research infrastructures like ESS and XFEL—which use crystallisation processes to prepare samples—by scientists working to gain insight into membrane protein function.](#)

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