



## SGC 20TH ANNIVERSARY SYMPOSIUM - EUROPE

### - FROM PROTEIN STRUCTURES TO PROBING BIOLOGY -

Rolf Luft Auditorium, Karolinska University Hospital,

Anna Steckséns gata 53, L1:00, Solna, Sweden

September 6, 2023

[SGC 20th Anniversary Symposium Europe](#) | [SGC \(thesgc.org\)](#)



**Karolinska  
Institutet**

#### Speakers' Bio



#### Opher Gileadi

Opher Gileadi is heading the Protein Science team at the Structural Genomics Consortium (SGC) unit at the Karolinska Institute, Sweden. Opher obtained his PhD at the Hebrew University in Jerusalem, followed by a postdoc at Stanford and a Senior Scientist at the Weizmann Institute, where he investigated mechanisms of transcription in yeast. He was one of the founding group leaders at the SGC at the University of Oxford, where his team established a pipeline of cloning and expression of human proteins for structural studies, resulting in more than 800 new protein structures. His group studied a diverse selection of proteins, including DNA helicases and nucleases, transcription factors, protein kinases, signalling proteins and genes linked to Alzheimer's disease. In 2015, Opher was the first scientific director of the newly established SGC group at the State University of Campinas, Brasil (CQMED). After a year as the Director of Protein Science in Exscientia (Oxford), Opher joined the SGC at the Karolinska Institute in 2023.

#### Session 1 - SGC – the first 20 years



#### Robert Cooke

Rob Cooke was most recently the Chief Technology Officer at Sosei Heptares in Cambridge, where he was responsible for the company's core approaches in using protein engineering, biochemistry, and biophysics for structure-based drug design for GPCR targets. He was also responsible for Bioinformatics, Research Informatics, IT, and site operations. Prior to joining Heptares in 2011, Rob was at Glaxo, then Glaxo Wellcome, then GlaxoSmithKline where he led Departments covering research in several disciplines including structural biology, computational chemistry and analytical sciences. Rob received his BSc and PhD in Inorganic Chemistry from the University of Sydney and was a post-doctoral researcher in the Department of Biochemistry at the University of Oxford.



### Stefan Knapp

Prof Stefan Knapp studied Chemistry at the University of Marburg (Germany) and at the University of Illinois. He did his PhD in protein crystallography at the Karolinska Institute in Stockholm. In 1999, he joined Pharmacia and left the company in 2004 to set up a group at the Structural Genomics Consortium at Oxford University. From 2008 to 2015 he was a Professor of Structural Biology at Oxford University (UK) and director of Chemical Biology at the Target Discovery Institute. He joined Frankfurt University in 2015 as a Professor of Pharmaceutical Chemistry. Since 2017 he is the CSO of the SGC node at the Goethe-University Frankfurt. His research interests are the rational design of selective kinase inhibitors and inhibitors of protein interactions modules that function as reader domains of the epigenetic code.



### Udo Oppermann

Udo Oppermann obtained his Diploma in Human Biology in 1990 and his PhD in Pharmacology and Toxicology in 1994, both with distinctions from Philipps University Marburg, Germany. He went on to become Associate Professor at Karolinska Institutet, Stockholm, in the Department of Medical Biochemistry and Biophysics where he stayed until 2004. After a sabbatical stay at Yale University, he has been a Principal Investigator of the Structural Genomics Consortium (SGC) in Oxford since its inception in 2003. In 2008 he became Professor of Molecular Biology at NDORMS, and he is now Director of the Laboratory Sciences Division at the Institute of Musculoskeletal Sciences, Botnar Research Centre, University of Oxford. He is a fellow of St Catherine's College at Oxford University as well as an alumnus of the Freiburg Institute of Advanced Studies through a Senior Marie Curie fellowship. His research focuses on drug and target discovery by using systems biology and single-cell approaches in a variety of human diseases including metabolic, inflammatory and malignant diseases. Application of novel single-cell technologies and chemical biology in primary and secondary bone cancers such as multiple myeloma with a focus on epigenetic mechanisms is a key research area of the group.



### Liz Carpenter

Liz Carpenter is a protein scientist and structural biologist with experience working with soluble and membrane proteins. She has a degree in Biochemistry from the University of Cambridge and a PhD in Crystallography from Birkbeck College in London. She worked as a post-doctoral scientist for the CNRS in Paris, at the NIOMR in Mill Hill and at Imperial College London. In 2007 she moved to the Diamond Light Source where she established and ran the Membrane Protein Laboratory, an international research and training facility for membrane protein structural biology. In 2009 she moved to Oxford University, as the principal investigator for the Integral Membrane Proteins Group in the Structural Genomics Consortium. Her group focused on structural and functional studies of human membrane proteins that are associated with genetic diseases. Over the next 11 years, they solved the structures of more than a dozen human membrane proteins, in a broad range of protein families, including ABC transporters, ion channels, membrane enzymes and solute carriers. The structural biology program evolved to include target identification and delivery of target enabling packages, an extensive package of information designed to facilitate drug discovery. In 2017 Liz was appointed as a Professor of Membrane Protein Structural Biology at the Nuffield Department of Medicine

in Oxford. In Sept 2020 Liz moved into industry to extend her understanding of the drug discovery process, working as a senior director at Vertex Pharmaceuticals for 18 months. She is currently on a career break.

## Session 2 - Routes to Target 2035



### Anke Mueller-Fahrnow

Anke Mueller-Fahrnow studied Biochemistry and received a Ph.D. in structural biology from the Free University Berlin, Germany in 1990. She joined Schering AG in 1991 to establish a Structural Biology function within the company. Anke subsequently held different positions with increasing responsibility at Schering Ag. In 2007, she became Head of Lead Discovery Berlin within Bayer AG and responsible for Protein Technologies, Structural Biology and for High Throughput Screening in Berlin. Since her retirement in 2020, Anke works as an independent scientific consultant for Nuvisan ICB GmbH, a CRO based in Berlin, Germany. Anke is the board chair of the SGC (Structural Genomics Consortium) and of VIMI (Viral Medicines Initiative).



### Paul Workman

Professor Paul Workman FRS FMedSci FRSC is a multidisciplinary cancer research scientist, molecular pharmacologist and chemical biologist who has been responsible for the laboratory discovery of multiple chemical probes and innovative cancer drugs. His specialty is designing personalized cancer medicines that are targeted to precise molecular abnormalities and vulnerabilities – an approach he refers to as ‘drugging the cancer genome’. Paul is particularly well known for the discovery of numerous clinical drug candidates and chemical probes inhibiting protein kinases, PI3 kinases, the molecular chaperones HSP90 and HSP70, and the HSF1 transcription factor pathway. He is Harrap Professor of Pharmacology and Therapeutics at The Institute of Cancer Research, London (ICR) and was previously Chief Executive and President of ICR and Director of ICR’s CRUK Cancer Therapeutics Unit at ICR (now known as ICR’s Centre for Cancer Drug discovery). Paul is committed to the development and best practice use of chemical probes in biomedical research and serves as Executive Director of the Chemical Probes Portal, having been instrumental in its initial establishment. Paul has also overseen the production of a sequential series of guidelines for the welfare and use of animals in cancer research and currently chairs a working group that aims to publish new best practice guidelines. Paul has received many awards and accolades and is a Fellow of the Royal Society (the UK’s national academy of science), the Academy of Medical Sciences, the Royal Society of Chemistry of Chemistry, the Royal Society of Biology, the European Academy of Cancer Sciences, and the American Association for the Advancement of Science, and he is a CRUK Life Fellow. Paul’s work has received over 53,000 citations and his h-index is 117.



### Florian Montel

Dr. Florian Montel grew up in the southeast of France and obtained his Ph.D. at Sanofi-Aventis in 2005 for the total synthesis of Cyclostreptin. He joined Novartis in Basel in 2005 for a post-doctoral position and the synthesis of food additive for brain development. After that, he spent 8 years at UCB in Belgium being project leader of CNS projects. He was also implied in the development of PET ligands; his work led to the finding of the first human PET tracer for the SV2A receptor. In 2014, he joined Boehringer Ingelheim as project leader in the Medicinal Chemistry department at Biberach an der Riss in Germany, leading respiratory and CNS projects for various indications from early stages to clinical candidate selection. Since 2017, he is leading the opnMe.com initiative and was appointed head of Open Science Group of Boehringer Ingelheim in 2022 overseeing the open innovation initiatives of the company from the opnMe.com website to the coordination of the Public-Private-Partnerships funded under IHI or the collaborations with BioMed X. He received various awards at UCB as the best youngest scientist and later for the most innovative scientist of the company and at Boehringer Ingelheim with the AAI award for the opnMe.com launch in 2018, the R&D award for Germany in 2019 and the Lighthouse award in 2021.



### Oliver Krämer

Oliver Krämer studied chemistry at the University of Siegen, Germany, and the University of Marburg, Germany. He did his PhD in computational chemistry / molecular modeling at the Department of Pharmacy of the University of Marburg and holds an executive MBA from the University of Mainz, Germany. In 2003, Oliver joined Boehringer Ingelheim's research site in Vienna, Austria, where he has held positions with responsibility for computational chemistry, hit identification and structural biology efforts for various drug discovery projects, including six years as research lab head for computational chemistry and six years as research group leader for Structural Research. Since 2015, Oliver is a director in Discovery Research Coordination at Boehringer Ingelheim's headquarters in Ingelheim, Germany. In his current position, he is responsible for the global coordination of research activities and external liaison, in particular public-private partnerships. Oliver represents Boehringer Ingelheim on the board of directors of the Structural Genomics Consortium (SGC).



### Cheryl Arrowsmith

Cheryl Arrowsmith is a Senior Scientist at the Princess Margaret Cancer Centre, Professor in the Department of Medical Biophysics, University of Toronto, and the Chief Scientist of the Structural Genomics Consortium (SGC) at the University of Toronto. Her research focuses on the structural and chemical biology of chromatin and epigenetic regulatory factors especially as relates to cancer and drug discovery. In partnership with major pharmaceutical companies, she leads the SGC's international open science program that is developing and distributing unencumbered Chemical Probes that support the discovery of new medicines. She received her Ph.D. from the University of Toronto and carried out postdoctoral research at Stanford University, and was co-founder of Affinium Pharmaceuticals, which developed a new medicine for multidrug resistant bacteria. She has published over 300 research articles, and was recognized by Clarivate Analytics as being among the worlds top 1% of highly cited scientists in



2018, 2019 and 2022. She was elected a AAAS Fellow (2015), and a Fellow of the Royal Society of Canada (2020).



### Matthew Todd

Mat Todd was born in Manchester, England. He was educated at Cambridge University where he obtained an MA in Natural Sciences in 1995 and a PhD in organic chemistry (with Chris Abell) in 1999. He was then a Wellcome Trust postdoc at The University of California, Berkeley (99-00), a College Fellow back at New Hall (now Murray Edwards) College, Cambridge University (00-01), a Lecturer in Chemistry at Queen Mary, University of London (01-05) and between 2005 and 2018 was at the School of Chemistry, The University of Sydney where he moved from Lecturer to Associate Professor. He is now Professor and Chair of Drug Discovery at University College London (2018-present). He is head of Open Chemistry Networks at the Structural Genomics Consortium. His research interests include the development of new ways to make molecules, particularly how to make chiral molecules with new catalysts. He is also interested in making metal complexes that do unusual things when they meet biological molecules or metal ions. His lab motto is to make the right molecule in the right place at the right time, and his students are currently trying to work out what this means. He has a significant interest in open science, and how it may be used to accelerate research, with particular emphasis on open source discovery of new medicines. He founded and currently leads several open science consortia such as [Open Source Malaria \(OSM\)](#) and is a founder of a broader [Open Source Pharma](#) movement. In 2011 he was awarded a New South Wales Scientist of the Year award in the Emerging Research category for his work in open science and in 2012 the OSM consortium was awarded one of three Wellcome Trust/Google/PLoS Accelerating Science Awards. For his open-source research, Mat was selected for the Medicine Maker's Power List in [2017](#) and 2018. He is on the Editorial Boards of PLoS One, ChemistryOpen and Nature Scientific Reports. He has been a sabbatical visitor at Stanford, UCSF, the Broad Institute and [Pembroke College, Oxford](#). He lives in Greenwich, London, with his wife and two children. He is related to [Trevor Horn](#) and, apparently, [Samuel Crompton](#).

## Session 3 - Target areas & Technologies



### Susanne Mueller-Knapp

Susanne Müller-Knapp studied Human Biology in Marburg Germany followed by a PhD in molecular biology at the Karolinska Institute in Stockholm, Sweden (1997). After spending more than 6 years as postdoctoral researcher in the area of inflammation and gene regulation at the Karolinska Institute and at the DIBIT San Raffaele Scientific Institute in Milan, Italy, Susanne joined 2004 the Structural Genomics Consortium, SGC, in Oxford. Susanne has been the Project Manager of the Epigenetic Probe Project, before moving to Frankfurt in 2015. In her role as Chief Operating Officer at the SGC Frankfurt Susanne is now coordinating several chemical probe programs and making these well-characterised tool compounds available to the scientific community. Her research group focuses on evaluating novel chemical probes for their cellular target engagement and biological roles. She is also Director of Operations of the Chemical Probes Portal, an online platform, providing recommendations for the right choice and use of chemical probes <https://www.chemicalprobes.org/>. Her research centers on using chemical biology on system evaluation to dissect the role of a specific target in biology and disease.



### Nicola Burgess Brown

Since September 2021, Nicola has been leading the Enzymology and Protein Engineering Team at Exact Sciences Innovation in Oxford, producing proteins for cancer diagnostic research. Before this, she worked at the University of Oxford for 17 years, initially managing the Biotechnology Group at the Structural Genomics Consortium (SGC) and more recently, as an Associate Professor and Head of the Protein Production Small Research Facility (SRF) in the Centre for Medicines Discovery (CMD). She led a research group experienced in all aspects of biotechnology, molecular biology, protein biochemistry and technology development and supported the other teams providing protein production and mass spectrometry services for internal and external academic and industrial customers. Nicola obtained a First Class degree in Applied Biochemical Sciences from the University of Ulster in 1997, then worked as a molecular biologist for SmithKline Beecham. She received her Ph.D. in Molecular Microbiology at the University of Nottingham in 2001 and then moved back to industry to work on high-throughput cloning and validation of therapeutic cancer antigens for Oxford Glycosciences and subsequently Celltech R&D.



### Matthias Gstaiger

Martin Schwalm studied Biosciences and Biotechnology at the University Frankfurt with a focus on enzyme engineering. For his MSc, he worked at the Max Planck Institute for Terrestrial Microbiology (Marburg, Prof. Tobias Erb) in the field of synthetic biology and metabolic engineering for the generation of autotrophic bacteria strains as a basis for long-term directed evolution. In 2020, he joined the SGC Frankfurt and the group of Prof. Stefan Knapp as PhD student, focusing on the development of novel protein degraders and the design and establishment of in vitro and cellular assay systems for degrader profiling and characterization.



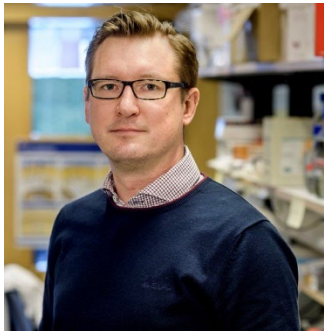
### Lizbé Koekemoer

Lizbé completed her studies at Stellenbosch University in South Africa focusing on Organic chemistry and Biochemistry. After her PhD she worked as a Postdoc with Prof. Erick Strauss at Stellenbosch University, studying coenzyme A biosynthesis, and at H3D, Africa's first integrated drug discovery and development centre, at the University of Cape town doing tuberculosis assay development. It was during her time at H3D that she got exposed to XChem and structure-enabled drug discovery. In 2019 Lizbé joined Frank von Delft's PX group in the Structural Genomics Consortium (SGC) at Oxford. She is currently still in Frank's group as a team leader at The Centre for Medicines Discovery (CMD), where she is responsible for the day to day operations of the CMD's crystallography small research facility (PX-SRF). She is also part of the NIH-funded ASAP AVIDD centre where she coordinates the Target Enablement Package (TEP) generation activities.



### Martin Schwalm

Martin Schwalm studied Biosciences and Biotechnology at the University Frankfurt with a focus on enzyme engineering. For his MSc, he worked at the Max Planck Institute for Terrestrial Microbiology (Marburg, Prof. Tobias Erb) in the field of synthetic biology and metabolic engineering for the generation of autotrophic bacteria strains as a basis for long-term directed evolution. In 2020, he joined the SGC Frankfurt and the group of Prof. Stefan Knapp as PhD student, focusing on the development of novel protein degraders and the design and establishment of in vitro and cellular assay systems for degrader profiling and characterization.



### Jesper S. Hansen

Dr Jesper S. Hansen is a biomedical and biophysical research scientist specialising in the biology and targeting of integral membrane proteins, as well as proteins interacting with cellular lipid membranes. Jesper completed his degree in biomedicine (MSc) at the University of Southern Denmark and did his PhD with the Danish biotech company Aquaporin A/S and Technical University of Denmark, DTU Nanotech. He has since worked as a postdoctoral researcher at the University of Copenhagen (DK), University of Southern California (US) and Lund University (SE) before joining University of Oxford (UK) in 2019. His work comprises of establishing and running biochemical and biophysical analyses of proteins including solute carriers.



### Susanne Gräslund

Susanne performed her graduate studies at the Biotechnology department at the Royal Institute of Technology (KTH) in Stockholm, starting in January 1997. After the dissertation, Susanne joined Biovitrum AB working as a researcher in the Targets expression and purification group. Susanne worked experimentally in several projects within the areas of cloning and protein production, but also as a project leader for a technology development project. In March 2005, Susanne joined the Swedish node within the Structural Genomics Consortium as head of the Biotechnology team. Susanne was one of the first recruits and was responsible for building up a state-of-the-art laboratory for high-throughput protein production. From July 1<sup>st</sup> 2005, the lab was fully functional and has since then delivered human protein structures according to or exceeding the milestones until it was closed in July 2011. Susanne also acted as Lab manager at SGC Stockholm and took care of organizing the lab and purchasing both consumables as well as instruments. In September 2011, Susanne moved to SGC Toronto for a position as Principal Investigator in Biotechnology. In addition to managing the Biotech team, Susanne also started a large-scale project to generate renewable recombinant antibodies to human target proteins involved in epigenetic mechanisms. In September 2015, Susanne moved back to Stockholm and the Karolinska Institute where she continued to work for the newly restarted SGC group, SGC Karolinska, which was a part of the two IMI-funded projects ULTRA-DD and EUbOPEN. In March 2022 Susanne left the SGC after 17 years for a position in the industry. She is now at Affibody AB, where she works as Head of Protein Production (Early Research).



### Aled Edwards

Dr. Aled Edwards is founder and Chief Executive of the Structural Genomics Consortium (SGC), a research organization celebrated for being a pioneer of open science, particularly as it applies to protein science, chemical biology and drug discovery. Aled leads the six SGC laboratories from the SGC headquarters in Canada. Aled is a Professor at the University of Toronto and Adjunct Professor at McGill University. He has published over 200 papers and his teams have contributed over 4,500 structures into the Protein Data Bank, as of 2021.

Aled has also founded many companies, including Affinium Pharmaceuticals, which developed a novel antibiotic currently in late-stage clinical trials, and M4K Pharma, the first pharmaceutical company formed explicitly to invent new, and affordably priced, medicines for pediatric cancers.



### Michael Sundström

Michael Sundström received his PhD from Uppsala, followed by Postdoctoral studies at Karolinska Institutet. From 1993-2000 he was at Pharmacia as Director for structure-based drug design and oncology R&D portfolio management. Between 2001 and 2003 he held senior positions at the Swedish Biotech Actar and Biovitrum. In 2003 he joined the Structural Genomics Consortium (SGC) at the University of Oxford, as Chief Scientist, until 2007 when he assumed the position as Managing Director for the Novo Nordisk Foundation Center for Protein Research (Copenhagen). From the end of 2011, he was VP Discovery Research at Karolinska Development. He then re-joined the SGC and Karolinska Institutet and is since mid-2014 Scientific Director for the SGC at KI.



### Volker M. Lauschke

Volker M. Lauschke is a Professor in Translational Pharmacology at Karolinska Institutet, Stockholm and Deputy Head of the Bosch Institute of Clinical Pharmacology in Stuttgart, Germany. His research group integrates 3D cell culture systems of primary human cells and microfluidics with phenotypic and chemogenomic screening to discover novel therapeutic strategies for NASH, infectious diseases (COVID-19 and hemorrhagic fevers) and complex metabolic diseases (type 2 diabetes). In addition, the lab develops machine-learning tools to improve personalized pharmacological therapy and establish novel methods for the prediction of drug toxicity. V.M.L. has authored over

140 papers, is a Clarivate Highly Cited Researcher and is the recipient of multiple awards in the area of genetics, pharmacology and drug discovery, including the Malin and Lennart Philipson Prize, the AAPS High Impact Award and the ISSX Karl Netter Award. Besides his academic work, he is co-founder and CEO of HepaPredict AB, a biotech company offering 3D human liver models for drug discovery and development.





## Maja Jagodic

Maja Jagodic completed her MSc at the University of Belgrade, Serbia, in Molecular Biology and Physiology specializing in Experimental Medicine in 1999. Upon obtaining the Swedish Institute scholarship, she moved to Sweden where she completed her PhD degree at the Karolinska Institute, Stockholm in 2004 studying genetic predisposition to autoimmune diseases. After thesis defense, she spent a year at the Karolinska Institute gaining skills in human genetics. Already towards the end of her PhD, Maja became fascinated by the field of epigenetics. At that time, epigenetic mechanisms, which orchestrate genome activity in response to environmental cues, were strongly implicated in the etiology of complex inflammatory diseases but virtually unexplored. Maja was awarded a Wenner-Gren postdoctoral fellowship to study epigenetic mechanisms in cancer at the University of Cambridge, UK. In 2008, she was awarded an Assistant Professor position by the Swedish Research Council for her pioneering research in epigenetics of neuroinflammation and she returned to Sweden to initiate studies of epigenetic mechanisms in Multiple Sclerosis. She was appointed a group leader at the Department of Clinical Neuroscience at the Karolinska Institute in 2012, she became an Associate Professor in Experimental Medicine in 2014 and a Professor of Neuroinflammation in 2021. Her research group thrives in the field of translational neuroimmunology focusing on the mechanisms underlying neuroinflammation and neuronal loss in Multiple Sclerosis and other inflammatory diseases with similar complex etiology. This builds on her expertise in functional genetics, human genetics and epigenetics of inflammation. Her group utilizes state-of-the-art molecular and analytical methods to elucidate functional states of discrete cells in unique clinical cohorts, followed by functional studies in advanced experimental models, with the goal to reveal the etiology of neuroinflammatory diseases and improve their management through novel treatments and specific biomarkers. Her excellent scientific quality and leadership is recognized by multiple awards (e.g. the Best PI at KI award, 2015), fellowships and grants (e.g. the ERC-consolidator grant, 2019; the Wallenberg grant, 2020, multiple EU Horizon2020 grants) and by her membership in renowned constellations of experts in neuroimmunology, genetics and epigenetics.



## Zhuoyao Chen

Zhuoyao Chen is a Postdoc Research Associate working in the Centre for Medicines Discovery, University of Oxford. Before this, she obtained her DPhil in Clinical Medicine degree from SGC Oxford. Having been trained in Biochemistry and Structural Biology for 8 years, Zhuoyao is committed to understanding the disease mechanisms of brain tumours and translating her research into drug discovery. To get in touch with Zhuoyao, please email [zhuoyao.chen@cmd.ox.ac.uk](mailto:zhuoyao.chen@cmd.ox.ac.uk).