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Welcome

Dear Delegates

We are delighted to welcome you to the **LMB-IGBMC Graduate Life Sciences Symposium 2018** held at the MRC-Laboratory of Molecular Biology. We are proud to be a symposium exclusively organized by graduate students from the MRC-LMB and from our partner institute this year, the Institut de Génétique et de Biologie Moléculaire et Cellulaire (IGBMC), Strasbourg. This follows a tradition of the LMB graduate symposium being partnered with an international institute promoting what we hope is a global, collaborative environment that fosters cultural exchange.

We are thrilled to present speakers this year from Europe and the USA covering a wide range of bioscientific disciplines. This years programme also includes our take on the popular ‘3 Minute Thesis’ competition.

We would like to thank both our institutes for their commitment and support to this student led venture and to all our industry and academic sponsors, including the Cambridge MRC-Doctoral Training Partnership sponsoring the Poster session.

We hope that you enjoy this years programme as much as we enjoyed putting it together and hope that you will be able to join us at the symposium closing dinner at Christ’s College.

*Your LMB-IGBMC Graduate Life Sciences Symposium Committee 2018*
Introduction

About the LMB

The MRC Laboratory of Molecular Biology (LMB) is a world-class research laboratory, dedicated to understanding important biological processes at the molecular level – with the goal of using this knowledge to tackle major problems in human health and disease. It is one of the birthplaces of modern molecular biology. Many pivotal techniques were pioneered at the laboratory, including DNA sequencing, methods for determining the three-dimensional structure of proteins and the development of monoclonal antibodies.

Since the opening of the LMB in 1962, research conducted by LMB scientists has been awarded 11 Nobel Prizes, including work by James Watson and Francis Crick (NL 1962), Fred Sanger (NL 1980), Venki Ramakrishnan (NL 2009) and Richard Henderson (NL 2017).

The four divisions of the LMB – Protein and Nucleic Acid Chemistry (PNAC), Cell Biology, Structural Studies and Neurobiology – are working on different aspects of molecular biology. Across the divisions there are more than 50 research groups that conduct basic research, employing 320 scientists of which 80 are students. Core funding as well as shared resources and facilities ensure good communication and collaboration between the divisions and individual scientists.

About IGBMC

The Institute of Genetics and Molecular and Cellular Biology (IGBMC) was created in 1994 by Pierre Chambon, one of the most important figures in biomedical research, and is now one of the main European Research Centre in this domain. IGBMC is the largest Research unit in France, involving Inserm, CNRS and University of Strasbourg. IGBMC has developed four cutting-edge scientific programs: development and stem cells, integrated structural biology, functional genomics and cancer, translational medicine and neurogenetics. The Institute has also established advanced scientific services and technological platforms, such as high-throughput cell-based screening, imaging, genomics and Cryo-EM. The Institute aims to develop interdisciplinary research at the interface of biology, biochemistry, physics and medicine, and to attract students from around the world by offering very high-level education in the field of biomedical sciences. The IGBMC campus is located on the “Parc d’Innovation d’Illkirch” in the Strasbourg suburbs, which represents an exceptional scientific, academic and industrial environment and largely favours collaborations and technology transfer.
Sponsor profiles

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Active Motif. Our understanding of the histone code and its essential role in gene regulation depend on reliable tools and reagents to perform this research. Working with our partners in the epigenetics research community, Active Motif is dedicated to providing best in class proteins, reagents and antibodies to enable chromatin biology research and facilitate our understanding of these key epigenetic events.

Cambridge Research Biochemicals® founded in 1980 is a leading British independent producer of custom-made peptide and antibody tools, supplying researchers in the pharmaceutical, life science and academic sectors worldwide. The primary applications of its products are as custom-made, laboratory scale reagents for proof of principal studies within early phase drug discovery and to support biomarker programmes in clinical studies. The company produces all flavours of peptides from simple to modified, stable and radio-labelled to dye labelled from milligrams to gram-scale to the highest levels of purity. In addition, CRB is a recognised expert at generating highly specific and targeted antibodies (both polyclonal and monoclonal). Fluorescent dye labelling is also a focus. In 2016 the company launched its first catalogue business DISCOVERY® since 1994.

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A full-service provider, GENEWIZ provides Sanger DNA sequencing, gene synthesis, molecular biology, high throughput/next generation sequencing, bioinformatics, and GLP regulatory services. GENEWIZ leads the way in providing superior data quality with unparalleled technical support to enable researchers around the world to advance their scientific discoveries faster than ever before.

Our customers at top-tier pharmaceutical, biotechnology, and academic institutions, as well as cutting-edge start-ups, rely on GENEWIZ’s proprietary technologies for consistent, reliable, high-quality data, even on the most difficult projects.

LI-COR® Biosciences offers a complete discovery process to give you accurate, reproducible data, including imaging platforms, analysis software, standardized protocols, training, and validated IRDye® infrared dye reagents for protein and molecular imaging. Our complete solutions for Western blot imaging include the Odyssey® CLx and Odyssey FC Infrared Imaging Systems and unique IRDye Infrared Dye-based antibodies and reagents. LI-COR also offers the C-DiGit® Blot Scanner for chemiluminescent Western blots as an affordable digital replacement for film.

Miltonyi Biotec Enabling Cell Research. Enabling Cell Therapy
With over 2000 employees worldwide, and over 14,000 products, for almost 30 years, Miltonyi Biotec has played an important part in the design, development, manufacture and integration of products that empower the advancement of biomedical research and enable cell and gene therapy.

QIAGEN serves more than 500,000 customers around the globe, all seeking insights from the building blocks of life – DNA, RNA and proteins. We deliver Sample to Insight solutions for molecular testing, propelling QIAGEN customers from start to finish to unlock new insights. This is how we make improvements in life possible.

Stratech supply over 1.8 million specialist life science research tools for researchers who need consistent, reproducible results. They have built an excellent reputation over 34 years for supplying high quality, competitively priced, reliable products. They are a family run business dedicated to delivering exceptional product quality with unbeatable technical support. Stratech are not a multi-national super conglomerate biotech company, instead we are family run business dedicated to delivering exceptional product quality with unbeatable technical support. We are so confident that you will LOVE both our products and our technical support that we guarantee all our products with a full money back promise.

At Vector Laboratories we have over 40 years of experience in Glycobiology, Immunohistochemistry and Immunofluorescence. Our aim is to make IHC ‘as easy as ABC’, with a range of ready-to-use products so there’s little optimisation required to get great results. We hold stock in our Peterborough distribution office for next day delivery on the majority of orders, and have friendly, knowledgeable technical services here for fast, local help and advice. Our reagents are available through your Science Warehouse portal and in 2018 we have NO SHIPPING charges for standard UK delivery, and NO MINIMUM ORDER VALUE. We develop and manufacture all of our reagents to high standards. Your research is important to us, so we believe it’s important we you offer you the best reagents and service we can.

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Programme

Wednesday 11th July

16.00 – 17.00  Registration and drinks reception with poster set up
17.00 - 18.00  KEYNOTE
Hang Lu
18.00 – late  Pub dinner at Cambridge Brew House

Thursday 12th July

8.30 – 9.20  Registration

WELCOME

9.25 - 11.00 IMMUNITY, CANCER AND DISEASE GENETICS
Geert van den Bogaart, Pascale Cossart, Wolf Herve Fridman

11.00 - 11.30  Tea break

11.30 - 13.00  STUDENT SESSION
‘three-minute-thesis’ competition

13.00 - 14.00  Lunch

14.00 - 15.30  STRUCTURAL BIOLOGY
Patrick Cramer, Elizabeth Villa, John Schwabe

15.30 - 16.00  Tea break

16.00 - 17.00  KEYNOTE
Alpha Lee

17.00 - 18.00  Poster session with wine and cheese sponsored by Cambridge MRC-Doctoral Training Partnership (DTP)
17.00 - 17.30  Even numbers presenting
17.30 - 18.00  Odd numbers presenting

18.30 - onward  Free evening

Friday 13th July

9.00 – 9.20  Registration

9.20 – 11.00  NEUROBIOLOGY
Alain Prochiantz, Frank Bradke, Michael Granato

11.00 - 11.30  Tea break

11.30 - 1.00  CELL & DEVELOPMENTAL BIOLOGY
Alison Woollard, Axel Behrens, Iva Tolic

1.00 - 14.00  Lunch

14.00 - 15.00  KEYNOTE
Richard Henderson

15.00-15.15  Final remarks by organizing committee

15.15-15.45  Tea break

15.45-onward  Free time to see Cambridge

16:30-17:30  Afternoon Punting from Magdalene Bridge

19.30  Formal dinner at Christ’s College
Hang Lu

July 11th / 17.00 - 18.00

Hang Lu
School of Chemical and Biomolecular Engineering
Atlanta, Georgia

Microfluidics, Automation, and Big-Data for Biology

Biographical Note
Hang Lu is the Love Family Professor in the School of Chemical and Biomolecular Engineering at Georgia Tech. She graduated summa cum laude from the University of Illinois at Urbana-Champaign in 1998 with a B.S. in Chemical Engineering. She has a Master’s degree in Chemical Engineering Practice from MIT (2000). She obtained her Ph.D. in Chemical Engineering in 2003 from MIT working with Dr. Klavs F. Jensen (Chemical Engineering) and Dr. Martin A. Schmidt (Electrical Engineering and Computer Sciences) on microfabricated devices for cellular and subcellular analysis for the study of programmed cell death. Between 2003 and 2005, she pursued a postdoctoral fellowship with neurogeneticist Dr. Cori I. Bargmann at University of California San Francisco and later at the Rockefeller University on the neural basis of behavior in the nematode C. elegans. Her current research interests are microfluidics, automation, quantitative analyses, and their applications in neurobiology, cell biology, cancer, and biotechnology. Her award and honors include the ACS Analytical Chemistry Young Innovator Award, a National Science Foundation CAREER award, an Alfred P. Sloan Foundation Research Fellowship, a DuPont Young Professor Award, a DARPA Young Faculty Award, Council of Systems Biology in Boston (CSB2) Prize in Systems Biology, Georgia Tech Junior Faculty Teaching Excellence Award, and Georgia Tech Outstanding PhD Thesis Advisor Award; she was also named an MIT Technology Review TR35 top innovator, and invited to give the Rensselaer Polytechnic Institute Van Ness Award Lectures in 2011, and the Saville Lecture at Princeton in 2013. She is an elected fellow of American Association for the Advancement of Science (AAAS) and an elected fellow of the American Institute for Medical and Biological Engineering (AIMBE).

Alpha Lee

July 12th / 16.00 - 17.00

Alpha Lee
Department of Physics
University of Cambridge, UK

Exploring Chemical Space Using Random Matrix Theory

Biographical Note
Alpha Lee is a Group Leader (Winton Advanced Research Fellow) in the Department of Physics, University of Cambridge. He is interested in problems at the interface between chemistry, machine learning and statistical physics. Currently his research group focuses on combining physical models with data-driven approaches to accelerate drug discovery as well as finding new materials for energy storage applications.

Alpha studied Chemistry as an undergraduate student at Imperial College London. He then ventured into mathematics and obtained a MSc and DPhil in Mathematics from Oxford. He was a UK-US Fulbright Scholar and George F. Carrier Fellow in the School of Engineering and Applied Sciences at Harvard University before starting his group at Cambridge
Richard Henderson

July 13th / 14.00 - 15.00

Richard Henderson
MRC Laboratory of Molecular Biology
Cambridge, UK

The Cryo-EM Revolution

Biographical Note
Richard Henderson was originally a physicist from Edinburgh University but switched into molecular biology at age 21. He went as a research student to the MRC Laboratory of Molecular Biology (LMB) in Cambridge, UK where he joined the team led by David Blow that worked out the atomic structure of the enzyme chymotrypsin, one of the first few protein structures to be determined using X-ray crystallography. He went on as a Helen Hay Whitney postdoctoral fellow at Yale University to develop an interest in the structure of membrane proteins, working for a few years on voltage dependent ion channels. After returning to LMB in 1973, he began to collaborate with Nigel Unwin and together they developed electron microscopy into a tool for the direct determination of the structure of proteins, and applied it most notably to the light-driven proton pump, bacteriorhodopsin, from Halobacteria. During the next 15 years, he worked to solve a number of the technical and conceptual problems which limited the attainable resolution of electron crystallography and by 1990, he and his colleagues had succeeded in obtaining the first atomic structure of the membrane protein, bacteriorhodopsin, by using electron microscopy and diffraction. Subsequent analysis of the structure of some of its photochemical intermediates has helped to understand how bacteriorhodopsin and other closely related family members function. In 2009, he turned his attention to single particle electron microscopy where more advanced electron cryomicroscopy now offers the promise of being able to determine atomic structures of large protein assemblies without the need first to make crystals. These methods are now being used to solve many of the outstanding problems in structural biology.

He was Joint-Head of the Division of Structural Studies at the MRC Laboratory of Molecular Biology from 1986 until 2001, and has been Director from 1996 to 2006. He is a fellow of the Royal Society and a Foreign Associate of the US National Academy of Sciences.
Quantitative visualization of membrane trafficking driving antigen presentation by dendritic cells

Biographical Note
Geert’s research interest is the uptake and processing of foreign antigens in immune cells with a focus on dendritic cells. He completed his M. Sc. and PhD in Groningen by studying the dynamics of membrane proteins in the lab of Bert Poolman. After obtaining his PhD in 2008, Geert worked as a postdoctoral fellow in neurobiology at the Max Planck Institute for Biophysical Chemistry in Göttingen. In 2012, Geert started his own group at the department of Tumor Immunology at the Radboud University Medical Center in Nijmegen with a focus on membrane trafficking in immune cells. This year, his lab will move to the University of Groningen where he will take up a full professorship.

The bacterium Listeria: towards a complete understanding of its physiology and virulence

Biographical Note
Pascale Cossart, after studying chemistry in Lille (France) obtained a master degree at Georgetown University, Washington, DC. Back in France, she obtained her PhD in Paris in the Institut Pasteur where she is still now, heading the Bacteria-Cell Interactions unit which is also an Inserm and an INRA unit. After studying DNA-protein interactions, she started in 1986, to study the molecular and cellular basis of infections by intracellular bacteria taking as a model the bacterium Listeria monocytogenes. Her research has led to new concepts in infection biology but also in microbiology in cell biology and in epigenetics.

Pascale Cossart is considered as a pioneer in Cellular Microbiology. Her contributions have been recognized by a number of international awards, including the Robert Koch Prize (2007), the Louis Jeantet Prize for Medicine (2008), the Balzan Prize (2013). She is a member of the French Academy of Science (2002), a foreign member of the American National Academy of Science (2009), of the German Leopoldina (2001), of the Royal Society (2010), and of the National Academy of Medicine (2014).
Wolf Herve Fridman

July 12 / 9.25 - 11.00

The immune system controls cancer: the promises of immunotherapy

Biographical Note
Professor Wolf H. Fridman is Professor Emeritus of Immunology at the Paris Descartes University Medical School in Paris, France. He received his MD and PhD degrees from the University of Paris. After 10 years in the laboratory headed by Jean Dausset, he created his own laboratory at the Cancer Research Centre in Villejuif in 1976, then moved to Institut Curie in 1983. In 2007 he created in 2007 and directed the Cordeliers Research Centre, a joint research structure between INSERM, University Paris Descartes and University Pierre et Marie Curie. He is President of the Canceropole Ile de France.

Dr Fridman’s research interests have been focused around the role of the immune system in controlling human tumors and the biological functions of receptors for IgG antibodies, both through basic and translational approaches. He, and his team, identified the protein references which trigger the biological functions of the receptors for IgG. In particular, he identified and named the ITIM motif, an inhibitory motif common to many receptors.

His main contributions in cancer immunology stand up to 1969 when he published, with François Kourilsky, the first demonstration of an immune response of the patient to his own cancer, in acute leukemia. He, then, focused on the analysis of the tumor microenvironment with the demonstration of the beneficial effect of a Th1 oriented immune response to control clinical outcome in cervical cancer. Since 2005, the studies of Jérôme Galon, Franck Pagès and Wolf H. Fridman have changed the paradigm of host/cancer interactions by demonstrating that the ‘immune contexture”, taking in account the functionality, the location and the density of the immune infiltrate in colorectal tumors, is the major prognostic factor for human cancers. These findings really open the way for immune-based tools for efficient prognosis and therapy of cancers.

Cambridge Research Biochemicals (CRB), established in 1980, are purveyors of peptides and antibody artisans, generating the highest quality research tools for the International Life Science Industry.

All flavours of peptides are offered from simple to heavily modified targets, in milligram to gram scale quantities at the highest purity level. CRB offer custom fluorescent dye labelling of peptides, proteins and antibodies with one of the most comprehensive selection of dyes in the world.

CRB also specialise in custom polyclonal (across a variety of species) and monoclonal antibody generation. Complimentary services such as ELISA analysis, Western blotting and purification are also available, in addition to antigen prediction services to enable peptide immunisation.
Patrick Cramer

Towards a basis for human transcription regulation

Biographical Note
Born on February 3, 1969 in Stuttgart. Studied chemistry at the Universities of Stuttgart and Heidelberg. Research student at the University of Bristol (UK) and Cambridge (UK). Diploma in chemistry in 1995 at the University of Heidelberg, doctorate at the University of Heidelberg/EMBL Grenoble (France) in 1998. Predoctoral fellow in Grenoble (France) from 1995 to 1998, postdoctoral fellow at Stanford University (USA) from 1999 to 2001. Tenure-track professor of biochemistry at the University of Munich from 2001 to 2003. Professor of biochemistry at the University of Munich from 2004 to 2014. Director of the Gene Center of the University of Munich (LMU) from 2004 to 2013. Director at the Max Planck Institute of Biophysical Chemistry since 2014.

Elizabeth Villa

Opening windows into the cell: bringing structure to cell biology with cryo-electron tomography

Biographical Note
Elizabeth did her PhD with Klaus Schulten, where she worked on computational methods to combine scales into molecular simulations. During her PhD, she learned about cryo-electron microscopy (cryo-EM) from Joachim Frank in a very productive collaboration that led to the development of a method to combine X-ray crystallography structures with cryo-EM data using molecular dynamics simulations (Molecular Dynamics Flexible Fitting). This was followed by a short stint in the Marine Biological Laboratory (MBL) for Physiology Course. She then went on to work in the lab of Wolfgang Baumeister at the Max Planck Institute of Biochemistry in Munich, where she learned and developed tools to realize the power of cryo-electron tomography for cells. Combining these multidisciplinary skills, her lab at UCSD is taking on the challenge of quantitative cell biology, using tools from cell biology, cryo-electron microscopy and tomography, computational analysis, and integrative modeling.

Her current research is focused on studying the nuclear periphery and also pursues many collaborations aimed at understanding the bacterial cytoskeleton, studying Parkinson’s disease. In 2016, she was granted an NIH Director’s New Innovator Award, which allows her to pursue high-risk high-reward research such as developing new technological and computational techniques to advance structural cell biology.
The assembly and mechanisms of Histone Deacetylase complexes

Biographical Note
John Schwabe is Professor of Structural Biology at the University of Leicester in the UK where he is Director of the Leicester Institute of Structural and Chemical Biology. He studied Biochemistry at University College, University of Oxford and obtained his PhD at Trinity Hall, University of Cambridge and the MRC Laboratory of Molecular Biology, Cambridge. He received the Max Perutz Prize for his doctoral research in 1991. He then worked as a postdoctoral fellow at the MRC Laboratory of Molecular Biology, Cambridge until he joined the Salk Institute of Biological Studies, La Jolla, California as a staff scientist. In 1997, he returned to the MRC Laboratory of Molecular Biology in Cambridge as a Group Leader/Senior Scientist until moving to Leicester in 2006. John Schwabe holds a Royal Society Wolfson Merit Award, a Wellcome Trust Senior Investigator Award. He is also an elected Member of the Academia Europaea.

John Schwabe has a long-standing research interest in understanding the molecular mechanisms through which nuclear receptors regulate transcription. His research has made a major contribution to our understanding of the structure and function of nuclear receptors. More recently his research has focused on understanding the recruitment and assembly of co-repressor complexes that are key to transcriptional regulation by nuclear receptors and other transcription factors.
Alain Prochiantz

**Signaling with non-cell autonomous homeoprotein transcription factors**

**Biographical Note**

Alain Prochiantz is Professor of Neurobiology and Director at the College de France. Alain is a former fellow of Ecole normale superieure and obtained his PhD at the University Rene Diderot in Paris. During his PhD, Alain worked on the structure of plant viral RNAs, but then went on to study brain morphogenesis. Alain Prochiantz has since gone on to direct CNRS “Development and Evolution of the Nervous System” unit as well as the biology department at ENS. His major scientific contributions have been discoveries of a novel signaling mechanism based on the intercellular transfer of homeoprotein transcription factors and the study of the developmental and physiological functions of this pathway. Based on the analysis of how these proteins travel across biological membranes, his laboratory has identified the first transduction peptides capable of addressing pharmacological substances to the cell interior. In addition to these biological studies, Alain Prochiantz has written several books targeted at a wider audience. He is currently head of the Center for Interdisciplinary Research in Biology at Collège de France.

Frank Bradke

**Mechanisms of axon growth and regeneration**

**Biographical Note**

Frank Bradke studied Biochemistry, Anatomy and Developmental Biology at the Freie Universität Berlin and the University College London. In 1994, he received a B.Sc. degree in Anatomy and Developmental Biology and in 1995 a degree in Biochemistry. During his thesis, he conducted research at the EMBL, Heidelberg. In 1999, he earned his PhD from the Ruprecht-Karls-Universität Heidelberg. Thereafter, in 2000, as a postdoctoral fellow he moved to Prof. Marc Tessier-Lavigne’s laboratory at the University of California, San Francisco and Stanford. Then, in 2003, he became a Max Planck Institute Research Group Leader at the MPI of Neurobiology, Martinsried. In 2009, Frank Bradke habilitated in Neurobiology at the Ludwig Maximilians-University Munich. In 2011 he received the IRP-Schellenberg-Prize and became full professor at the University of Bonn and Senior Research Group leader for Axonal Growth and Regeneration at the German Center for Neurodegenerative Diseases (DZNE) in Bonn. In 2013 Frank Bradke was elected to the European science organization EMBO. In 2014, he was elected a member of the Leopoldina, the German National Academy of Sciences. In 2016, Frank Bradke received the Gottfried Wilhelm Leibniz-Prize, the most important research prize in Germany.
Michael Granato

July 13 / 9.20 - 11.00

Michael Granato
University of Pennsylvania School of Medicine
USA

Cellular and genetic analysis of peripheral nerve regeneration using zebrafish

Biographical Note
Michael Granato is Professor of Cell and Developmental Biology at the University of Pennsylvania School of Medicine. He obtained his PhD at the University of Tübingen and the Max Planck Institute in Munich, Germany. Before moving to the University of Pennsylvania, he did his Postdoctoral research at the Max Planck Institute in Tübingen in the laboratory of Nobel Prize winner Dr. Christiane Nüsslein-Volhard. His group focuses on three areas of modern Neuroscience using the model organism zebrafish: axonal guidance, injury induced nerve de- and regeneration, and sensorimotor behaviour. The laboratory’s recent pioneering work on the molecular basis of target-specific axonal regeneration after injury demonstrated how components of the extracellular matrix guide axons to their original target. Following up on this work, the group currently uses in vivo screens to identify modulators of peripheral nerve regeneration in zebrafish, hereby significantly contributing to the understanding of axonal injury and nerve regeneration.
Alison Woollard

How the worm completes it skin, and other stories

Biographical Note
Alison is an Associate Professor in the Biochemistry Department at Oxford University where she leads a research team working on the developmental genetics of the nematode worm Caenorhabditis elegans. Her current work concerns molecular mechanisms of cell fate determination and morphogenesis during C. elegans development, trying to unpick the complex mechanisms by which cells become different from one another as an organism develops from egg to adult. She also has a developing interest in the biology of ageing, with an emphasis on the contribution of chromatin regulators and the WRN homologue wrn-1 to lifespan and healthspan regulation.

Alison is also very committed to Public Engagement, believing that science must be more strongly embedded in society as an important cultural ambition, as well as a crucial driver of economic competitiveness, improved healthcare and sensible public and governmental policy. She presented the 2013 Royal Institution Christmas Lectures series “Life Fantastic”, broadcast on BBC4, and since then has taken part in a diverse range of public engagement activities, from pop festivals to stand-up comedy! Alison was awarded the 2015 Genetics Society JBS Haldane Lectureship to recognize her public engagement activities and was recently elected Vice President of the Genetics Society with a special responsibility for public understanding of genetics. Her BBC Radio 4 “Life Scientific” was broadcast in spring 2017.

Axel Behrens

Understanding cellular heterogeneity in pancreatic cancer

Biographical Note
Axel is senior group leader at the Francis Crick Institute, has an associate affiliation as Principal Research Fellow at King’s College, London, and holds an Honorary Professorship at London University College (UCL), London.

He received his PhD degree in Molecular Genetics from Vienna University and completed his postdoctoral training in the University Hospital in Zurich (Switzerland). Axel’s lab focuses on the biology of adult stem cells and their function in cancer.

https://www.crick.ac.uk/research/a-z-researchers/researchers-a-c/axel-behrens/
Iva Tolic
July 13 / 11.30 - 1.00

A new twist in the mitotic spindle

Biographical Note

Iva Tolic's scientific training and career has taken her all over Europe, to the United States, and back again. She began her studies in her home city of Zagreb, Croatia, traveling to Boston, MA (USA) to complete her thesis work. Upon obtaining her doctorate in biology, she did post-doctoral training in biophysics first in Copenhagen, Denmark, and then in Florence, Italy. Following her post-doctoral training, she was appointed as a Research Group Leader at the Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany in 2004, promoted to a Senior Research Group Leader at the same Institute in 2009, finally moving back to where she started in Zagreb, Croatia in 2014. In her time as an independent investigator, she has made several key discoveries related to microtubules, motor proteins, and cell division. These include the discovery of a novel mechanism of kinetochore capture during mitosis, the discovery that non-kinetochore microtubules connect sister kinetochore fibers thereby balancing forces in the spindle.
Three Minute Thesis (3MT®) celebrates the exciting research conducted by PhD students around the world. Developed by The University of Queensland (UQ), the competition cultivates students’ academic, presentation, and research communication skills. Presenting in a 3MT competition increases their capacity to effectively explain their research in three minutes, in language appropriate to a non-specialist audience. Competitors are allowed one PowerPoint slide, but no other resources or props.

Emma Morris
Investigating network topology of the master circadian oscillator - the SCN

Louise Funke
Towards automated genome engineering

Max Stammnitz
The Devil’s DNA

Ingrid Lager Gotaas
Small heat shock proteins

Lisa Heinke
FoxK and the Wnt Enhanceosome

Pernelle Klein
Structural study and characterization of HNF4A-TAF4-TAF12 complex

Jia Song
Oxidative stress during ageing of budding yeast

Xiangrong Chen
Discovering inhibitors of human BLM helicase

Anna Bonhoure
Interactome from HPV E6 oncoproteins: a structural and quantitative study

Perrine Kretz
Cracking the vault: a key to understand autism?
Posters 13th July

1. Mechanism of PINK1-mediated ubiquitin phosphorylation
   Alexander Schubert, MRC-LMB

2. Investigating the function of golgin vesicle tethers in Drosophila melanogaster
   Rosa Park, MRC-LMB

3. Cryptochromes are not required for circadian rhythms in mammalian cells
   David Wong, MRC-LMB

   Emma Morris, MRC-LMB

5. PuntSeq - sequencing the Cam river metagenome with a MinION
   Max Stammnitz, University of Cambridge Department of Veterinary Medicine

6. Design of chimeric proteases for therapeutic applications
   Katrin Fischer, MRC-DTP Biochemistry

7. The role of Bax clusters during apoptosis
   Alicia Borgeaud, MRC-LMB

8. Rational design of conformation-specific antibodies for tau oligomers
   Klara Kulenkampff, MRC-LMB

9. Genetically encoded protein phosphorylation in mammalian cells
   Vaclav Beranek, MRC-LMB

10. Deciphering a metabolism-sensitive molecular readout of histone crotonylation through identifying crotonyl-interacting factors
    Elena Stoyanova, MRC-DTP Babraham Institute

11. Towards the structure of a bacterial supercomplex
    Mutum Yaikhomba, University of Cambridge Mitochondrial Biology Unit

12. CHCHD4 and its role in hypoxia signalling
    Jenna Stephen, MRC-DTP Medicine

13. The role of chchd4 in hypoxia signalling and zebrafish development
    Alhasan Al-Habib, MRC-DTP Medicine

14. Structural basis for NusA stabilized transcriptional pausing
    Xieyang Guo, IGBMC

15. A role for FoxK in Wnt signalling
    Lisa Heinke, MRC-LMB

16. Biochemical, biophysical and structural study of macromolecular complexes involved in transcription: 1) HNF4α-TAF4-TAF12 complex; 2) Histone variant H2A.Z & ANP32E histone chaperone
    Pernelle Klein, IGBMC

17. Structure of the transcriptional co-activator NuA4
    Alexandre Frechard, IGBMC

18. Elongator complex: from activity to diseases
    Mónica Peña Luna, IGBMC

19. Mapping of the residues involved in E6AP – HERC2 ubiquitin ligases interaction
    Anna Bonhoure, IGBMC

20. Role of Tip60 in UHRF1 regulation in human cancer cells
    Tanveer Ahmad, University of Strasbourg

21. Control of normal and dysfunctional metabolic gene expression by the HNF4A-TAF4 axis in pancreatic beta cells
    Thomas Kleiber, IGBMC

22. Contribution of a RNA degradation factor for the development of a mammalian model organism
    Mélanie Mahé, IGBMC

23. Identifying the MVP/vault neuronal function at the autism-associated 16p11.2 locus
    Perrine Kretz, IGBMC

24. Characterization of PI3K Complex I and II - Like two peas in a pod?
    Shirley Tremel, MRC-LMB

25. Deubiquitylating enzyme UCHL3 controls mitotic timing and chromosome segregation
    Katerina Jerabkova, IGBMC
### Enabling Epigenetics Research

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<thead>
<tr>
<th>Acronym</th>
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<td>H3K4me3</td>
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**NOTE:**

- Antibodies, Kits and Services
- Enabling Epigenetics Research

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