



Aaron Ciechanover joins LifeNet Advisory Board

Aaron Ciechanover (Institute of Technology, Bat Galim Haifa, Israel) visited the School of Life Sciences - LifeNet in June 2010 to give a talk within the Hermann Staudinger Lecture Series on "Why Our Proteins Have to Die so We shall Live or The Ubiquitin Proteolytic System - From Basic Mechanisms and onto Disease Mechanisms and Drug Development". During his visit to Freiburg, Aaron Ciechanover had the opportunity to acquaint himself with the School's work and as a result willingly accepted the directors invitation to contribute to the School's activities by becoming a member of the Advisory Board.



Hector Fellowship for Jens Timmer

Jens Timmer, one of the LifeNet directors, has been appointed a Hector Fellow. Each year the Hector Stiftung II (Hector Foundation II) bestows this honour on three professors for their outstanding achievements in and contributions to science, research and teaching. By facilitating networking among the fellows, the foundation intends to create a round table of particularly highly qualified, dedicated individuals and specialists who stimulate one another in their work on knowledge-based topics. The research prize is endowed with 150,000 euros and will be awarded to Jens Timmer at a ceremony held by Josefine and Dr h. c. Hans-Werner Hector on February 4th.

New External Senior Fellow Christopher Overall

Christopher Overall began his External Senior Fellowship at LifeNet in November 2010. Overall is a Professor and Tier I Canada Research Chair in Metalloproteinase Proteomics and Systems Biology at the Centre for Blood Research, University of British Columbia. His work focuses on system biology and degradomics of proteolysis in cancer.

Overall completed his undergraduate, honours science and masters degrees at the University of Adelaide, South Australia, before moving to Canada. He was an MRC Centennial Fellow and conducted his post-doctoral work with Nobel Laureate Michael Smith, Biotechnology Laboratory, University of British Columbia. Overall completed his Ph.D in biochemistry at the University of Toronto .

He has won numerous awards including the 2002 CIHR IMHA Researcher of the Year Award and the University of British Columbia Killam Senior Researcher Award (Science) 2005. He chaired both the 2003 MMP and the 2010 Protease Gordon Research Conferences.

He is a pioneer in the field of proteomics now termed degradomics, protease genomics, drug target validation, MMP therapeutics, and substrate discovery. He has developed numerous approaches to decipher the roles of proteases *in vivo* by elucidating the protease and substrate degradomes through quantitative proteomics and N- and C-terminome analysis in cell-based systems and in animal models. His main research focus at FRIAS is system biology and degradomics of proteolysis in cancer and metastasis.



Florian Mintert awarded European Research Council's Starting Grant

Florian Mintert, School of Soft Matter Research's Junior Fellow, has been awarded one of the European Research Council's (ERC) prestigious Starting Grants for his project "Optimal dynamical control of quantum entanglement". The ERC Starting Grants are designed to enable outstanding young researchers to set up research groups in any field and foster excellence in cutting-edge science. The grant is endowed with funding for Mintert's own project and for an additional five-year post-doc.

Entangled states, i.e. the coherent superposition of many-body states associated with different single-particle properties, are typically rather fragile and therefore easily destroyed by unavoidable noise such as thermal fluctuations. The project 'Optimal dynamical control of quantum entanglement' aims to identify the means of driving many-body systems into a state of maximally robust entanglement properties. Unlike approaches which target a specific entangled state, the aim of this project is to maximize a so-called entanglement measure. Since there is a continuum of states that maximize such a measure, this allows the system to evolve into a maximally robust state. It is hoped that this research will show how many-body quantum coherence can persist in predominantly environment-coupled systems.

New External Senior Fellow Maria Anita Rampi

In January 2011 chemist Maria Anita Rampi joined the School of Soft Matter Research. Rampi studied chemistry at the University of Bologna and is professor of polyelectrolyte brushes chemistry at the University of Ferrara, where she teaches inorganic chemistry



and chemistry of nano-structured materials. She has been interested in 1) photochemistry and photo-physics of supramolecular systems, 2) photoinduced energy and electron transfer processes in supramolecular Donor-Bridge-Acceptor systems, both in

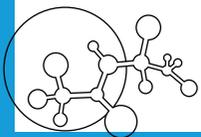
solution and in self-assembled monolayers on solid surfaces, and more recently 3) electron-transfer processes in molecular junctions. For several years she has been a visiting professor at the Max Plank Institute in Goettingen, and presently also holds a position at Harvard University where she collaborates with George M. Whitesides (Department of Chemistry and Chemical Biology - Harvard University).

New Junior Fellow Karen Lienkamp

Since December 2010 Karen Lienkamp is a Junior Fellow at the School of Soft Matter Research. Lienkamp studied chemistry at the University of Cambridge, England, and the Freie Universität Berlin, where she graduated 'with distinction' in 2003. She then joined Prof. Gerhard Wegner's group at the Max-Planck-Institute for Polymer Research (MPI-P) in Mainz, where she studied cylindrical polyelectrolyte brushes as a synthetic model system for cartilage. In 2006 she received her Ph.D. from the University of Mainz. Until 2007 she worked as a project leader at MPI-P and was responsible for an industrial cooperation with CIBA SC, Basel. She then moved to the U.S. and joined Prof. Gregory N. Tew's lab at the University of Massachusetts, Amherst, to work on antimicrobial polymers. In 2010 she returned to Germany and started a junior research group at IMTEK which focuses on the synthesis and

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characterization of polymer-functionalized surfaces, in particular for biomedical applications. She has received numerous scholarships from various organizations, including the German National Academic Foundation (Studienstiftung des deutschen Volkes), Funds of the German Chemical Industry (Fonds der chemischen Industrie), the Medical Foundation, and the German Research Foundation (Deutsche Forschungsgemeinschaft, DFG). In December 2010 she furthermore was awarded a DFG Emmy Noether grant.

8th Hermann Staudinger Lecture with Nobel Laureate Robert Huber

On December 16th Nobel Laureate Robert Huber from the Max Planck Institute of Biochemistry in Martinsried was a guest of the FRIAS Schools LifeNet and Soft Matter Research. Robert Huber received the Nobel Prize for Chemistry in 1988 together with Johann Deisenhofer and Hartmut Michel. They were recognized for their work in first crystalliz-



ing an intramembrane protein important in photosynthesis in purple bacteria, and subsequently applying X-ray crystallography to elucidate the protein's structure. His work >>>

contributed enormously to the development of methods in protein crystallography and their refinement, as well as to the development of new instruments for crystallography. Although retired he is still an active member in research which showed in his inspiring talk on proteases. His talk was a *tour de force* from first time discoveries to current research on protease function convincing the auditorium in the Hermann Staudinger Lecture on how important the "daily role" of proteases in the cellular environment is. He presented an important medical application of the first therapeutic proteasome inhibitor Bortezomib, marketed as Velcade, for the treatment of multiple myeloma. Impressive 3D-images of crystal structures depicted the role and function of different proteasome inhibitors and the link from structure via function to a deeper understanding of cellular processes in general.

EVENTS TO COME

February 7, 2011

Seminar: Peer Fischer, IPM, Fraunhofer: *"Breaking Symmetry: From the molecules of life to artificial flagella"*
FRIAS seminar room at 11:15 h

February 21, 2011

Seminar: Andrey Gurtovenko, Russian Academy of Sciences, St.Petersburg: *"Defect-Mediated Trafficking across Cell Membranes: Insights from in Silico Modeling"*
FRIAS seminar room at 11:15 h

May 25-27, 2011

Black Forest Focus on Soft Matter Research 5 *"Self-Assembly on all Scales"*, Saig/Titisee
Registration required.

July 26-29, 2011

Black Forest Focus on Soft Matter Research 6 *"Magnetic Resonance Microsystems"*, Saig/Titisee
Registration required.

www.frias.uni-freiburg.de/softmatter-events

New Internal Senior Fellow Kerstin Krieglstein

In October 2010 Kerstin Krieglstein became an Internal Senior Fellow at LifeNet. She is professor and chair of the Department of Molecular Embryology at the School of Medicine, Albert-Ludwigs-University of Freiburg. She studied chemistry and pharmacy at the Universities of Marburg and Munich, and after an experimental dissertation in protein chemistry and pharmacology, continued her post-doc in molecular biology and biochemistry at the University of California in Irvine, USA and in neuroanatomy and cell biology at Marburg and Heidelberg. She became associate professor (C3) for anatomy at the University of Saarland in 1999 and full professor (C4) and head of the department of neuroanatomy at the University of Göttingen in 2001. Krieglstein is a scientific advisor to the German Research Foundation DFG, acting as a rapporteur of the graduate



programme, the Alexander von Humboldt-Foundation and the Federal Ministry for Education and Research, BMBF. She is a scientific board member of the Center of Excellence of Neurosciences, Helsinki, of the Finnish Academy of Sciences (since 2008), and of the Max-Delbrück Center (since 2009). She has won numerous awards including the Bargmann-Prize of the Anatomical Society (1999) and the Saar-LB Prize (2000). In 2007 she was elected a member of the German Academy of Sciences Leopoldina. Krieglstein's research investigates the growth factors in nervous system development: induction and specification of neuronal phenotypes, regulation of neuron survival, ontogenetic

cell death, synaptogenesis, functions, signaling and contextual actions of TGF- β , and related proteins.

Peter Jonas awarded European Research Council's Advanced Investigators Grant

Peter Jonas, until December 2010 Internal Senior Fellow at LifeNet, has been awarded an ERC Advanced Investigators Grant (with a volume of 2.5 mio euro) for his research on *"Nanophysiology of fast-spiking, parvalbumin-expressing GABAergic interneurons"*. Jonas expects to gain valuable insight into the mechanics of dynamic activities of neuron networks.

EVENTS TO COME

February 14, 2011

Seminar: Hans-Georg Rammensee, Department of Immunology, Tübingen: *"Multi-peptide vaccination for immunotherapy of cancer"*
FRIAS seminar room at 11:15 h

March 11, 2011

Seminar: Celso Grebogi, Institute for Complex Systems and Mathematical Biology, University of Aberdeen: *"Multi-layered Networks and Emergence of Spatio-Temporal Order in Ecological Systems"*
FRIAS seminar room at 11:15 h

March 14, 2011

Seminar: Niko Beerenwinkel, Computational Biology Group, ETH Basel (Title tba)
FRIAS seminar room at 11:15 h

October 9-11, 2011

FRIAS-LifeNet Workshop on *"Integrative 'Omics' Approaches to Disease Mechanisms - from emerging technologies to new perspectives"*
Schloß Reinach/Freiburg Munzingen
Registration required.



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