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Press release

Max-Delbrück-Centrum für Molekulare Medizin in der Helmholtz-Gemeinschaft
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10/19/2015
http://idw-online.de/en/news639701

Cooperation agreements, Personnel announcements
Biology
transregional, national

From Vancouver to Berlin: W3 Professorship for Bioinformatician Irmtraud Meyer at FU Berlin and MDC

The bioinformatician Irmtraud Meyer of the University of British Columbia in Vancouver, Canada, has accepted the appointment to a W3 professorship for "Bioinformatics of the RNA Structure and Transcriptome Regulation" at the Freie Universität Berlin (FU) in cooperation with the Berlin Institute for Medical Systems Biology (BIMSB) of the Max Delbrück Center (MDC). The two institutions have thus succeeded in recruiting an internationally recognized scientist to Berlin and to strengthen the field of systems biology and systems medicine. Professor Meyer will begin her work in Berlin during this winter term and thus return to Germany after 16 years of research abroad.

Systems biology and systems medicine combine the study of biology and medicine with bioinformatics. The underlying idea is that many diseases have molecular causes which can be elucidated in detail as to their pathogenesis. The aim of this new branch of research is to unravel complex processes on various levels, including the molecular level, and based on this to develop new diagnostic methods and therapies in order to diagnose and treat diseases at an early stage and ideally to adapt this treatment to the individual patient.

The main research interest of Professor Meyer is the transcriptome, the set of all RNA molecules that are formed during the transcription of genes – the translation of DNA into RNA – and consist of protein-coding and non-coding RNA molecules. Protein-coding RNAs are translated into proteins; non-coding RNAs are important regulators of the cell machinery. Only the cell-type-specific regulation of these individual molecules leads to the correct formation of a healthy cell or a healthy organism.

The role played by the so-called RNA structure in regulating the protein-coding and non-coding gene transcripts is of particular interest to Professor Meyer because through this RNA structure, potentially many types of regulatory mechanisms can be controlled robustly, i.e. without the major influence of many external molecules. Her research group has developed several computer programs and conducted computational analyses to predict RNA structures and their functions.

Another research focus of Professor Meyer is the decryption of the network of RNA-RNA interactions and other transcriptome interactions. In contrast to protein-protein networks, these types of interactions have not yet been explored as comprehensively. Specific classes of RNA-RNA interactions, such as interactions between messenger RNA (mRNA) with microRNA (miRNA), have already proven to be functionally extremely important. Therefore, there is reason to hope that new classes of interactions remain to be discovered.

Irmtraud Meyer was born in 1974 in Hameln on the Weser River. From 1993-1998 she studied physics and mathematics at the Rheinisch-Westfälische Hochschule (RWTH) Aachen, and at the University of Paris-South XI, France. As part of her work on her diploma thesis she spent several months at the European Organization for Nuclear Research (CERN) in Geneva, Switzerland. From 1999-2002, after her diploma in physics in Aachen, she was a PhD student at the Wellcome

Trust Sanger Institute and the Department of Genetics at the University of Cambridge, UK. After receiving her doctorate, she worked from 2002 to 2004 at the Oxford Centre for Gene Function and the Department of Statistics at the University of Oxford and then returned for one year to Cambridge. There she worked as a postdoc at the European Bioinformatics Institute, which is part of the European Molecular Biology Laboratory (EMBL) in Heidelberg. In March 2006 she accepted a position at the University of British Columbia in Vancouver, Canada. There she worked for more than nine years at the UBC Centre for High-Throughput Biology (ChiBi), the Department of Computer Science and the Department of Medical Genetics, most recently as assistant professor.

The young researcher has received numerous awards. She was Honorary Scholar of the Cambridge European Trust (1999-2002), Wellcome Trust Prize Student (2000-2002) and twice Marie Curie Fellow (2007, 2009) at the Rényi Institute of Mathematics of the Hungarian Academy of Sciences, Budapest. Professor Meyer is also a member of the International Society for Computational Biology, the RNA Society and the Mathematical Society of the University of Oxford.

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(Photo: private)