

Prof. Dr. Roland Eils



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SCIENTIFIC VITA

- 1992 – 1995 Ph.D. study at University of Heidelberg (Ruprecht-Karl-Universität Heidelberg); Specialization: Mathematics and Scientific Computing (PhD in Mathematics, first class)
- 1995 - 1996 Postdoctoral student at the IWR.
- 1996 – 1996 Guest researcher at the Institut Albert Bonniot, Université Grenoble, France (Host: Prof. M. Robert-Nicoud, Faculty of medicine). Research area: Development of 3-dimensional image analysis methods.
- 1996 – 1999 Head of the biocomputing group „Structure and function in cell biology“, IWR, University of Heidelberg, Germany
- 2000 head of the bioinformatics group „Intelligent bioinformatics systems“ at the German Cancer Research Center (dkfz)
- 2002 head of division „Theoretical Bioinformatics“ at the German Cancer Research Center (dkfz), Heidelberg, presently with 25 researchers
- 2002 appointed director of department “Bioinformatics and Functional Genomics” and full professor (C4) at University of Heidelberg
- 2006 appointed founding director of BIOQUANT-Centre for quantitative Biology, University of Heidelberg.

TECHNOLOGY TRANSFER

- Since 1997 Founder and director of the Steinbeis-Technology Transfer Centre „Intelligent bioinformatics systems“
- 2000-2003 Founder and former Chief Scientific Officer (CSO) of phase-it intelligent solutions AG, Heidelberg, Germany
- Since 2005 Founder and director of the Steinbeis-Research Institute „Systems Biology“

AWARDS

- June 1999 BioFuture prize from the German Ministry for Education and Research (approx. 1.2 Millionen €)
- 2002/2003 Nominated for full professor positions (C4) at University of Giessen, University of Bonn (not realized) and University of Heidelberg
- 2005 Microsoft Research award "Computational tools for advancing science"
- 2005 Award for new innovative research by Helmholtz Society: "Systems Biology of Complex Diseases"
- 2006 Nominated for full professor positions at the University of Manchester and University College Dublin (the latter combined with directorship of the Centre for Complex Adaptive Systems); both not realized

AWARDS TO MEMBERS OF DIVISION

- Aug. 2000 GMDS- promotional prize for students 2000 (to D. Berrar)
- Nov. 2000 short-listed for Heinz-Billing-prize of the Max-Planck-Society (for PhD thesis by K. Sätzler)
- Aug. 2001 GMDS- promotional prize for students 2001 (to F. Schubert)
- 2002/03 Appointment of two postdocs (Dr. W. Dubitzky and Dr. K. Sätzler) for full professorship and lectureship, respectively, at Ulster University, Northern Ireland
- 2003 Richtzenhain prize for best PhD thesis at DKFZ Heidelberg (D. Gerlich)
- 2006 MLP Prize for best PhD thesis at Institute for Pharmacy and Molecular Biotechnology, University of Heidelberg (C. Bacher)

FURTHER APPOINTMENTS

- since 2000 Extended board of directors of "Interdisciplinary Center of Scientific Computing" (IWR), University of Heidelberg
- since 2001 Coordinator of bioinformatics platform in the National Genome Research Network (NGFN)
- since 2001 Steering committee of the German Systems Biology Research Programme (BMBF)
- since 2002 scientific director of the Bioinformatics postgraduate course, Academy for further Education, University of Heidelberg
- 2003 Chair of referee board for Sysbio programme, Academy of Finland

REVIEWER FOR SCIENTIFIC JOURNALS AND ORGANIZATIONS

Science, Nature, Cell, Nature Genetics, Nature Cell Biology, Nature Methods, Nature Reviews Molecular Cell Biology, Bioinformatics, BMC Bioinformatics, PLoS Computational Biology, Journal of Microscopy, Journal of Theoretical Biology, Biophysical Journal, Cancer Research, International Journal of Cancer, Cytometry and others

DFG, BMBF, BBSRC, GIF, HFSP, NIH, Wellcome Trust, European Bioinformatics Institute, diverse National Councils in Europe, and others

ORGANIZATION OF CONFERENCES

- 12.12.99 GFP-Symposium at the annual meeting of the American Society of Cell Biology (ASCB), Washington, DC, USA (chair)
- Apr. 2001 "Focus on Multidimensional Microscopy and Image Processing", Amsterdam, Netherlands (member of Scientific Organizing Committee)
- July 2002 Dynamics Days 2002, Heidelberg (scientific host)
- July 2004 Gordon Conference „Molecular Cytogenetics“ (co-chair)
- Oct. 2004 International Conference on Systems Biology, Heidelberg (chair)
- Febr. 2005 1st FEBS course on Systems Biology (co-chair)
- Oct. 2006 International Conference on Systems Biology, Yokohama (programme co-chair)
- Febr. 2007 2nd FEBS course on Systems Biology (co-chair)

GRANTS

- since 2000 more than 8 million € project funds granted by the DFG (German Research Council), the BMBF (Federal Ministry of Education and Research), the Ministry of the State Baden-Württemberg for Science, Research and Arts, the Human Frontier Science Programme, the Helmholtz society, Deutsche Krebshilfe, and the EU

SPECIAL SYSTEMS BIOLOGY ACTIVITIES

- 2001 Co-Initiator of the German National Programme on Systems Biology (Hepatosys)
- 2004 Chair of International conference on Systems Biology
- 2005-2006 Co-chair of two conferences/courses on Systems Biology
- 2005 two awards in Systems Biology (see above)
- 2005 Coordinator of the Helmholtz Initiative on Systems Biology (50 million € for five years, programme initiated by Helmholtz prize awarded to Roland Eils)
- 2005 Book editor: Computational Systems Biology, Elsevier
- 2006 Guest editor of Special Issue on Systems Biology, published in: Biosystems
- 2006 Guest editor of Special Issue on Systems Biology, published in: IT
- 2008 Guest Editor of "Systems Biology and Artificial Life: Towards Predictive Modeling of Biological Systems"; published in Artificial Life.

PUBLICATIONS (10 selected publications)

- R. Eils**, S. Dietzel, E. Bertin, E. Schröck, M. R. Speicher, T. Ried, M. Robert-Nicoud, C. Cremer, T. Cremer (1996) Three-dimensional reconstruction of painted human interphase chromosomes: active and inactive X-chromosome territories have similar volumes but differ in shape and surface structure. *J. Cell Biol.* 135, 1427-1440.
- W. Tvaruskó, M. Bentele, T. Misteli, R. Rudolf, C. Kaether, D.L. Spector, H.H. Gerdes, **R. Eils** (1999) Time-resolved analysis and visualization of dynamic processes in living cells, *Proc. Natl. Acad. Sci USA* 96, 7950-7955.
- D. Gerlich, J. Beaudouin, M. Gebhard, J. Ellenberg, **R. Eils** (2001) 4-D Imaging and Quantitative Reconstruction to Analyse Complex Spatiotemporal Processes in Live Cells. *Nature Cell Biology*, 3: 852-855.
- Gerlich, D., Kalbfuss, B., Beaudouin, J., Daigle, N., **Eils, R.***, Ellenberg, J. (2003) Inheritance of chromosome topology throughout mitosis. *Cell* 112, 751-764.

**corresponding author*

- Bentele M, Lavrik I, Ulrich M, Stosser S, Heermann DW, Kalthoff H, Krammer PH, **Eils R.** (2004) Mathematical modeling reveals threshold mechanism in CD95-induced apoptosis. *J Cell Biol.* 166(6):839-51.
- S. Bulashevskaya, O. Szakacs, B. Brors, **R. Eils*** and G. Kovacs (2004) Pathways of urothelial cancer progression suggested by Bayesian network analysis of allelotyping data. *Int. J. Cancer*, 110,850 –856. **corresponding author*
- R. König and **R. Eils** (2004) Gene expression analysis on biochemical networks using the potts spin model. *Bioinformatics*, 20(10): 1500-5.
- Lenart P., CP Bacher , N Daigle , A Hand , **R Eils** , M Terasaki, J Ellenberg (2005) A contractile nuclear actin network drives chromosome congression in oocytes. *Nature*, 436(7052): 812-8.
- Bulashevskaya S, **Eils R** (2005) Inferring regulatory logic from gene expression data. *Bioinformatics*, 21(11):2706-13.
- Bacher CP, Guggiari M, Brors B, Augui S, Clerc P, Avner P, **Eils R***, Heard E* (2006) Transient colocalization of X-inactivation centres accompanies the initiation of X inactivation. *Nat Cell Biol.* 2006 8(3):293-9 **corresp. author and equal contribution*