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Education / Training

Institution and Location	Degree	Years	Field of Study
Dresden Institute of Technology, Dresden, Germany	M.S.	09/1988 – 07/1993	Chemistry
Dresden Institute of Technology, Dresden, Germany	Ph.D.	08/1993 – 12/1996	Chemistry / Biochemistry
Columbia University, New York, NY	Postdoc.	01/1997 – 11/2000	Biochemistry
Stanford University, Stanford, CA	Visiting Scholar	12/2000 – 11/2001	Biophysics / Physics

Professional Experience

- 1992-1993 Undergraduate Researcher, Institute of Wood and Plant Chemistry, Tharandt, Germany, "Peroxidases in *Picea Abies*", Advisor: Professor Klaus Fischer
- 1993-1996 Graduate Research Assistant, Department of Biochemistry, Dresden University of Technology, Dresden, Germany, "Mechanisms of Hammerhead Ribozymes", Advisor: Dr. Bernd Schwenzer
- 1997-2000 Postdoctoral Research Fellow, Department of Biochemistry and Molecular Biophysics, Columbia University, New York, NY, "Mechanism of RNA helicases", Mentor: Professor Anna Marie Pyle
- 2000-2001 Visiting Scholar, Department of Physics, Stanford University, Stanford, CA, "Single Molecule Fluorescence Techniques", Mentor: Professor Steven Chu
- 2000-present Assistant Professor of Biochemistry, Department of Biochemistry, School of Medicine, Case Western Reserve University, Cleveland, OH
"Dynamics of Ribonucleoprotein Complexes"
Secondary Appointments: - Center for RNA Molecular Biology
- Department of Physics

Honors and Awards

- 1996 Dissertation with *Summa cum laude*
- 1997 Curt Engelhorn Postdoctoral Fellowship (awarded by the German Cancer Research Center)
- 1997 Human Frontier Science Program Postdoctoral Fellowship (declined)
- 2003 Damon Runyon Scholar Award

Publications

Research Articles

Fairman ME, Maroney P, Wang W, Bowers H, Gollnick P, Nilsen, TW & **Jankowsky E**: “Protein displacement by DExH/D “RNA helicases” without duplex unwinding.” *Science* **304**, 730-734 (2004)

Highlighted in:
Perspective, *Science* **304**: 694-695 (2004)
News and Views, *Nature Struct. Mol. Biology* **11**: 494 - 496 (2004)

Kawaoka J, **Jankowsky E** & Pyle AM:
“Backbone tracking by the SF2 RNA helicase NPH-II.”
Nature Structural & Molecular Biology **11**: 526-530 (2004)

Highlighted in:
News and Views, *Nature Struct. Mol. Biology* **11**: 494 - 496 (2004)

Pang PS, **Jankowsky E**, Planet PJ & Pyle AM:
“The hepatitis C viral NS3 protein is a processive DNA helicase with cofactor enhanced RNA unwinding.”
EMBO J. **21**:1168-1176 (2002)

Kang DC, Gopalkrishnan RV, Wu Q, **Jankowsky E**, Pyle AM & Fisher PB:
“Mda-5: An interferon-inducible putative RNA helicase with double-stranded RNA-dependent ATPase activity and melanoma growth-suppressive properties.”
Proc. Natl. Acad. Sci. USA **99**: 637-642 (2002)

Highlighted in:
Editor’s choice , *Science* **304**: 694-695 (2002)

Jankowsky E, Gross CH, Shuman S & Pyle AM:

“Active disruption of an RNA-protein interaction by a DExH/D RNA helicase.”

Science **291**: 121-125 (2001).

Highlighted in:

Perspective, *Science* **291**: 1916-1917 (2001)

Specific Review, *Nature Structural & Molecular Biology* **8**: 113-116 (2001)

Research Update, *Trends Biochem. Sci.* **26**: 339-341 (2001)

Jankowsky E, Gross CH, Shuman S & Pyle AM:

“The DExH protein NPH-II is a processive and directional motor for unwinding RNA.”

Nature **403**: 447-451 (2000)

Highlighted in:

News and Views, *Nature Structural & Molecular Biology* **7**: 97-99 (2000)

Jankowsky E & Jankowsky A:

“The DExH/D protein family database.”

Nucleic Acids Res. **28**: 333-334 (2000)

Wagner JD, **Jankowsky E**, Company M, Pyle AM & Abelson JN:

“The DEAH-box protein PRP22 is an ATPase that mediates ATP-dependent mRNA release from the spliceosome and unwinds RNA duplexes.”

EMBO J. **17**: 2926-2937 (1998)

Jankowsky E & Schwenzler B:

“Oligonucleotide facilitators enable a hammerhead ribozyme to cleave long RNA substrates with multiple-turnover activity.”

Eur J Biochem. **254**: 129-134 (1998)

Jankowsky E, Strunk G & Schwenzler B:

“Peptide nucleic acid (PNA) is capable of enhancing hammerhead ribozyme activity with long but not with short RNA substrates.”

Nucleic Acids Res. **25**: 2690-2693 (1997)

Jankowsky E & Schwenzler B:

“Efficient improvement of hammerhead ribozyme mediated cleavage of long substrates by oligonucleotide facilitators.”

Biochemistry **35**: 15313-15321 (1996)

Jankowsky E & Schwenzler B:

“Oligonucleotide facilitators may inhibit or activate a hammerhead ribozyme.”

Nucleic Acids Res. **24**: 423-429 (1996)

Book Chapters

Jankowsky E & Fairman ME:

“Duplex unwinding and RNP remodeling with RNA helicases.”

RNA –Protein interaction protocols, 2nd Edition, Humana, in press (2004)

Pyle AM, Chu VT, **Jankowsky E & Boudvillain M:**

“Using DNazymes to cut, process, and map RNA molecules for structural studies or modification.”

***Methods Enzymol.* 317:140-146 (2000).**

External Research Support

- | | |
|-------------------|---|
| 01/2002 – 12/2002 | American Cancer Society, Institutional Grant
“Analysis of RNA helicase activity by the DExH/D protein NPH-II“ |
| 04/2002 – 06/2004 | Ohio Board of Regents
“Single Molecule Analysis of the Hepatitis C virus RNA helicase complex bound to a membrane” |
| 05/2003 – 04/2008 | National Institutes of Health, RO1
“Mechanism of DExH/D proteins” |
| 01/2004 – 12/2006 | Damon Runyon Cancer Research Foundation, Scholar Award
“Molecular Mechanisms of tumor-induced deregulation of eukaryotic translation initiation” |
| 12/2004 – 11/2008 | National Institutes of Health, RO1
(Co-Investigator with Dr. Bill Merrick)
“Mechanism of protein synthesis initiation” |

Other Scientific Activities

Ad hoc Reviewer for: *Cell, Molecular Cell, Nature Structural and Molecular Biology, Journal of Biological Chemistry, Journal of Molecular Biology, Biochemistry, RNA*

Development and maintenance of two websites (included in ISI Thompson Web contents):

Helicase.net: Curated information about resources related to research on helicases (<http://www.helicase.net>)

The DExH/D Protein Database: Curated database of DExH/D (RNA) helicases (<http://www.helicase.net/dexhd/dbhome.htm>)