

# Curriculum Vitae

## **PERSONAL INFORMATION**

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Family name, First name: Tiemann-Boege, Irene  
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 Position: Associate Professor  
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## **RESEARCH AREAS: SINGLE-MOLECULE ANALYSIS OF GENOME DYNAMICS**

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- Mutagenesis: mutational processes in the male germline, paternal age effect, mutagenic recombination
- Meiotic recombination: recombination hotspots, regulation of hotspots, hotspot sequence evolution
- Technological developments: ultrasensitive rare variant or mutation detection; bead-emulsion-amplification, ultra-sensitive sequencing, single molecule PCR, PCR-based mutation detection

## **EDUCATION**

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2015 *Venia docendi* (Habilitation) in Molecular Genetics, Johannes Kepler University, Linz  
 2003 Ph.D. in Molecular Biology, University of Southern California, Los Angeles, USA. Advisor: Norman Arnheim  
 1999 M.Sc. in Zoology, Texas Tech University, Lubbock, USA. Advisor: Robert D. Bradley  
 1997 B.Sc. and M.Sc. in Biology--*summa cum laude*, Universidad de las Américas, México. Advisor: Dr. Javier Garcés-Eisele.  
 1994-95 Exchange student at McGill University, Montreal, Canada

## **PROFESSIONS**

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2015 - Associate Professor and Senior Group Leader of Single Molecule Genetics, Institute of Biophysics, Johannes Kepler University, Austria  
 2010-2015 Assistant Professor and Group Leader of Single Molecule Genetics, Institute of Biophysics, Johannes Kepler University, Austria  
 2009-2010 Lise Meitner Fellow, Institute of Biophysics, Johannes Kepler University, Austria;  
 2007-2008 Senior Research Associate, Department of Oncology, University of Cambridge, UK  
 2003-2007 Postdoctoral Research Associate, Department of Molecular and Computational Biology, University of Southern California, USA  
 1999-2003 Research Assistant, Department of Molecular and Computational Biology, University of Southern California, USA  
 1997-1999 Research Assistant, Department of Zoology, Texas Tech University, USA

## **FUNDING**

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2018-2022 DK NanoCell, University of Linz; Co-PI  
 2018-2022 FWF the Austrian Science Fund (P30867-B26). Age related mutagenesis of driver genes in the male germline. Principal Investigator.  
 2017-2019 Linz Institute of Technology (LIT). Seed research grant. Discovery of New mutations using ultra-sensitive sequencing. Principal Investigator.  
 2014-2018 FWF the Austrian Science Fund (P27698). Binding properties of PRDM9. Principal Investigator.

- 2013-2017 FWF the Austrian Science Fund (P25525). Higher mutations in older men. Principal Investigator.
- 2011-2015 FWF the Austrian Science Fund (P23811-B12). Mutagenic recombination. Principal Investigator
- 2006-2007 Center of Excellence in Genomic Sciences (NHGRI), Pilot Grants by the University of Southern California (ITI0701821).

### **FELLOWSHIPS**

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- 2009-2010 Lise Meitner fellowship awarded by the Austrian Science Funds
- 1999-2003 Doctoral Grant. Consejo Nacional de Ciencia y Tecnologia (CONACYT), the Mexican Ministry of Science and Technology.
- 1999 Fellowship from the Association for the Advancement of Women in Science
- 1998-1999 Chancellor Fellowship of the Texas Tech University, Texas.

### **AWARDS AND ACHIEVEMENTS**

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- 2016 Pilgerstorferpreis awarded by the Upper Austrian medical society for outstanding scientific achievements
- 2015 Upper Austrian researcher of the year; Landespreis Oberösterreichische Forscherinnen
- 2015 Regional award from the state of Upper Austria for Outstanding Research and Collaborative Effort (Winner in the category of Arts and Science)
- 2005 & 2006 Award for women with outstanding career track record in science and engineering--WiSE (Women in Science and Engineering)
- 2003 Outstanding Achievement Award from the University of Southern California, Los Angeles, USA.

### **INVITED SPEAKER**

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- 2017 European Society for Evolutionary Biology (ESEB), Groningen, Neatherlands: "Drivers of the evolution of hotspot".
- 2016 EMBO Meeting, Mannheim, Germany: "Sequence evolution at recombination hotspots".
- 2016 Embriologenforum Austria (EFA); „Is sexual reproduction mutagenic“.
- 2015 The Human Mutation Meeting, Leipzig; „Mutagenesis at recombination hotspots“.
- 2015 20th Aniversary Meeting of the Science School Universidad de las Americas: About the origin of mutations in our genome: an analysis at single molecule resolution.:
- 2014 Embriologenforum Austria (EFA); „The paternal age effect; an analysis of its origins“.

### **INVITED SEMINARS**

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- 2018 Austrian Institute of Science (IST), Lunch seminar series, Host: Nick Barton, "The evolution of polyAs at a recombination hotspot".
- 2017 Departmental seminar, Institute of Molecular Medicine, University of Lisbon Medical School: "Age-related mutagenesis of driver genes in the male germline"
- 2016 Departmental seminar, Penn State University: "Selfish mutations are important drivers of the paternal age effect".
- 2015 Departmental seminar Computational and Molecular Biology, University of Southern California: "How meiosis drives the sequence evolution at recombination hotspots".
- 2014 Gemeinsamer Seminarabend, Medizinische Gesellschaft OÖ und Johannes Kepler Universität Linz; "Mehr Mutationen dank älteren Männern? Eine Studie von seltenen Mutationen“.

- 2012 Centro de Biomedicina, Universidad do Algarve, Portugal; "New evidence for positive selection explaining the paternal age-effect observed in achondroplasia"
- 2011 VetMed University, Vienna; "The enigma of recombination hotspots"
- 2011 Austrian Institute of Technology, Vienna; "Genetics on microscopic beads-the uses of bead-emulsion amplification"
- 2010 Austrian Association of Molecular Life Sciences and Biotechnology; "Screening meiotic recombination on microscopic beads".
- 2009 University of Vienna, Max F. Perutz Laboratories; "What can we learn about meiotic recombination from human sperm?"
- 2008 Cancer Research Institute, Cambridge, UK; "Can we track the human somatic cell tree using beads?"
- 2007 Johannes Kepler University, Linz; "Measuring rare events in genomic DNA".
- 2007 VetMed University, Vienna; "The human somatic cell ancestral tree. Can it be reconstructed using microscopic beads?"
- 2007 University of Philadelphia, School of Medicine, Department of Genetics; "Spying on sperm to understand recombination".