

MARIJA ZANIC, Ph.D.

Assistant Professor, Department of Cell and Developmental Biology
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EDUCATION

Ph.D. Physics, The University of Texas at Austin, Weinberg Theory Group, December 2007

M.S. Physics, The University of Zagreb, Croatia, September 1998

POSITIONS AND RESEARCH EXPERIENCE

Assistant Professor, Vanderbilt University
Department of Cell and Developmental Biology
Department of Chemical and Biomolecular Engineering
Nashville, TN, 2014 - present

Postdoctoral Fellow, Advisor: Dr. Jonathon Howard
Max Planck Institute of Molecular Cell Biology and Genetics,
Dresden, Germany, 2008 - 2013
Yale University, Department of Molecular Biophysics and Biochemistry,
New Haven, CT, 2013 - 2014

Graduate Research Assistant, University of Texas at Austin
Weinberg Theory Group, Advisor: Dr. Sonia Paban
Austin, TX, 2003 - 2007

AWARDS AND HONORS

- 2016 - 19 **Searle Scholars Award**
- 2014 - 17 **Career Development Award**, Human Frontier Science Program (HFSP)
- 2008 - 12 Cross-Disciplinary Postdoctoral Fellowship, HFSP
- 2010 Federation of European Biochemical Societies Fellowship
- 2009 Eva Szent-Gyorgyi Scholarship
- 2009 Lola Ellis Robertson Endowed Scholarship
- 2008 Max Planck Society Postdoctoral Fellowship
- 2003 - 07 Research Assistantship, Weinberg Theory Group, UT Austin
- 2006 Jane and Roland Blumberg Scholarship
- 2003 Professional Development Award, Graduate School, UT Austin
- 2002 Research Assistantship, Experimental High Energy Group, UT Austin

PUBLICATIONS

Zanic M. “Measuring the Effects of Microtubule-Associated Proteins on Microtubule Dynamics *In Vitro*”, *In: The Mitotic Spindle. Methods Molecular Biology, 1413* (2016), in press

Ohi R, **Zanic M.** “Ahead of the Curve: New Insights into Microtubule Dynamics”, *F1000Research 314* (2016)

Grimaldi AD, **Zanic M**, Kaverina I, “Encoding the microtubule structure: Allosteric interactions between the microtubule +TIP complex master regulators and TOG-domain proteins”, *Cell Cycle 14(9):1375-1378* (2015)

Zanic M, Widlund PO, Hyman AA, Howard J, “Synergy between XMAP215 and EB1 Increases Microtubule Growth Rates to Physiological Levels”, *Nature Cell Biology, 15(6):688-93* (2013)

Faculty of 1000 Recommended Reading

Bowne-Anderson H*, **Zanic M***, Kauer M, Howard J, “Microtubule dynamic instability: A new model with coupled GTP hydrolysis and multistep catastrophe”, *BioEssays, 35(5):452-61* (2013)
*equal contribution

Gardner MK, **Zanic M**, Howard J, “Microtubule Catastrophe and Rescue”, *Current Opinion in Cell Biology, 25:14–22* (2013)

Tropini C, Roth EA, **Zanic M**, Gardner MK, and Howard J, “Islands Containing Slowly Hydrolyzable GTP Analogs Promote Microtubule Rescues”, *PLoS ONE 7(1): e30103* (2012)

Gardner MK*, **Zanic M***, Gell C, Bormuth V, and Howard J, “Depolymerizing Kinesins Kip3 and MCAK Shape Cellular Microtubule Architecture by Differential Control of Catastrophe”, *Cell 147(5);1092-103* (2011)

*equal contribution, **Faculty of 1000 Recommended Reading**

Widlund PO, Stear JH, Pozniakovsky A, **Zanic M**, Reber SB, Brouhard GJ, Hyman AA, and Howard J, “XMAP215 Polymerase Activity is Built by Combining Multiple Tubulin-Binding TOG Domains and a Basic Lattice-Binding Region”, *Proc Natl Acad Sci U S A. 108(7); 2741-2746* (2011)

Gell C, Bormuth V, Brouhard GJ, Cohen DN, Diez S, Helenius J, Nitzsche B, Ribbe J, Schaeffer E, Stear JH, Trushko A, Varga V, Widlund PO, **Zanic M**, Howard J, “Microtubule Dynamics Reconstituted in Vitro and Imaged by Single-Molecule Fluorescence Microscopy”, *Methods Cell Biol. 95; 221-45* (2010)

Zanic M, Stear JH, Hyman AA, Howard J, “EB1 Recognizes the Nucleotide State of Tubulin in the Microtubule Lattice”, *PLoS ONE 4(10); 7585* (2009)

Faculty of 1000 Recommended Reading

Lee Y, Block G, Chen H, Folch-Puy E, Foronjy R, Jalili R, Jendresen CB, Kimura M, Kraft E, Lindemose S, Lu J, McLain T, Nutt L, Ramon-Garcia S, Smith J, Spivak A, Wang ML, **Zanic M**, Lin SH, “One-step isolation of plasma membrane proteins using magnetic beads with immobilized concanavalin A”, *Protein Expr Purif. 62(2):223-9* (2008)

Fischler W, Krishnan C, Paban S, **Zanic M**[#], “Vacuum bubble in an inhomogeneous cosmology”, *J. High Energy Phys. JHEP05 041, arXiv:0711.3417 [hep-th]* (2008)

Krishnan C, Paban S, **Zanic M**[#], “Evolution of gravitationally unstable de Sitter compactifications”, *J. High Energy Phys. JHEP05 045 [arXiv:hep-th/0503025]* (2005)

Fischler W, Paban S, **Zanic M**[#], “The energy density of “wound” fields in a toroidal universe”, *J. High Energy Phys. JHEP10 041 [arXiv:astro-ph/0407349]* (2004)

[#] first-author contribution (alphabetical ordering of authors common practice in the field)

COURSE PARTICIPATION

- 2010 Pierre-Gilles de Gennes School: Cytoskeleton, Contractility and Motility, Institut d'Études Scientifiques de Cargèse, Corsica, France
- 2009 **Physiology Course, Marine Biological Laboratories, Woods Hole, MA**
- 2008 Protein Purification and Characterization, Cold Spring Harbor Laboratory, NY
- 2004 Frontiers of Mathematical Physics, Pacific Institute for the Mathematical Sciences, University of British Columbia, Vancouver, BC
- 2002 - 04 **Prospects in Theoretical Physics, Institute for Advanced Study, Princeton, NJ**

INVITED TALKS & SEMINARS

- 2015 Clemson University, Department of Physics and Astronomy, Clemson, SC
Vanderbilt-Ingram Cancer Center, Signal Transduction Mini-Retreat, Nashville, TN
Vanderbilt University, Department of Physics, Nashville, TN
- 2014 Vanderbilt University, Department of Chemical and Biomolecular Engineering, Nashville, TN
Gordon Research Conference: Muscle and Molecular Motors, West Dover, VT
Vanderbilt University, Department of Cell and Developmental Biology, Nashville, TN
University of Washington, Department of Physiology and Biophysics, Seattle, WA
- 2013 **Gordon Research Conference: Motile and Contractile Systems**, New London, NH
University of California San Diego, Physics Department, San Diego, CA
Biophysical Society 57th Annual Meeting, Philadelphia, PA
Northwestern University, Department of Molecular Biosciences, Evanston, IL
- 2012 Yale University, Department of Molecular Biochemistry and Biophysics, New Haven, CT
Chicago Cytoskeleton Meeting, Chicago, IL
Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany