# Biographical Sketch – Jozsi Z. Jalics

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## Professional Preparation

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| John Carroll University | Mathematics (minor in Physics) | B.S. 1996 |
| The Ohio State University | Mathematics | M.S. 1999 |
| The Ohio State University | Mathematics | Ph.D. 2002 |
| Boston University | Mathematical Neuroscience | Post Doc. 2003-06 |

## Appointments

2006- Assistant Professor, Department of Mathematics and Statistics, Youngstown State University
2003-06 Postdoctoral research fellow, Center for BioDynamics and Department of Mathematics and Statistics, Boston University
2002-03 Volunteer Teacher, St. Mary's School (St. Francis Foundation), Deva, Romania
1996-02 Graduate Teaching Assistant, Department of Mathematics, The Ohio State University

## Publications

Refereed Journal Articles

Jalics, J., Krupa, M., Rotstein, H.G., *Mixed-mode oscillations in a three time scale system of ODEs motivated by a neuronal model*, Dynamical Systems, in press, DOI: 10.1080/14689360903535760, 2010.

Ermentrout, G.B, Jalics, J.Z., Rubin, J.E., *Stimulus-driven traveling solutions in continuum neuronal models with a general smooth firing rate function,* SIAM Journal on Applied Mathematics, in press, 2010.

Middleton, S., Jalics, J., Kispersky, T., LeBeau, F., Roopun, A., Kopell, N.,Whittington, M., and Cunningham, M., *NMDA receptor-dependent switching between different gamma rhythm-generating microcircuits in entorhinal cortex*, Proc Natl Acad Sci USA, 105: 18572-18577, 2008.

Jalics, J., *Slow waves in mutually inhibitory neuronal networks,* Physica D: Nonlinear Phenomena, 192: 95-122, 2004.

Abstracts

Doinoff, C., Kalik, Z., Wright, M., Jalics, J., Sims, C., Gender *and Regional Differences in $I_{cal}$ Distribution in Adult Rabbit Right Ventricle Influence Action Potential Duration and Propensity for EADS in a Model of Long QT Syndrome Type 2.* Biophysical Journal, Volume 98, Issue 3, Supplement 1, 2010.

Middleton, S., Jalics, J., Kispersky, T., LeBeau, F., Kopell, N.,Whittington, M., and Cunningham, M., *NMDA receptor-dependent expression of different gamma rhythm-generating microcircuits in the entorhinal cortex*, Soc. Neurosci. Abs., 38:41.9, 2008.

Jalics, J., Cunningham, M., Kispersky, T.J., Whittington, M., and Kopell, N., *Activation of Different Gamma-Generating Microcircuits in Entorhinal Cortex is NMDA Receptor Dependent,* Soc. Neurosci. Abs., 36:635.18, 2006.

Jalics, J., Kispersky, T.J., Cunningham, M., Whittington, M., and Kopell, N., *Modeling theta nested gamma in the medial entorhinal cortex,* Soc. Neurosci. Abs., 35:274.1, 2005.

Jalics, J., Kispersky, T.J., Dickson, C., and Kopell, N., *Neuronal ensembles and modules: modeling dynamics in medial entorhinal cortex,* Soc. Neurosci. Abs. 34:517.1, 2004.

**Synergistic Activities**

- Active research program in mathematical and computational neuroscience in collaboration with experimental neuroscientists.
- Active research program in cardiac dynamics in collaboration with experimentalists.
- Development and analysis of models for activity patterns in neuronal and cardiac networks using numerical and dynamical systems techniques such as geometric singular perturbation theory and bifurcation theory.
- Incorporation of topics from mathematical biology in undergraduate courses.

**Collaborators & Other Affiliations**

(a) Collaborators and Co-Editors

Mark Cunningham, University of Newcastle upon Tyne
Clayton Dickson, Universiy of Alberta
Bard Ermentrout, University of Pittsburgh
Tilman Kispersky, Boston University
Nancy Kopell, Boston University
Martin Krupa, Radboud University Nijmegen
Fiona LeBeau, University of Newcastle upon Tyne
Steve Middleton, University of Newcastle upon Tyne
Anita Roopun, University of Newcastle upon Tyne
Horacio Rotstein, New Jersey Institute of Technology
Jonathan Rubin, University of Pittsburgh
Carl Sims, Youngstown State University
Miles Whittington, University of Newcastle upon Tyne
Mark Womble, Youngstown State University
George Yates, Youngstown State University

(b) Graduate and Postdoctoral Advisors

Nancy Kopell, Boston University
David Terman, The Ohio State University