

Ivan V. Maly
Curriculum vitae

Education

Postdoctoral training, MIT Biological Engineering Division, 2003. Project: Mathematical modeling and computational analysis of autocrine signaling networks. Supervisor: Prof. D.A. Lauffenburger.

Ph.D., Integrated Graduate Program in the Life Sciences, Northwestern University, 2002. Thesis: Spatial Organization in Kinetic Models of the Cytoskeleton and Cell Motility. Advisor: Prof. G.G. Borisy.

Diploma with distinction, Physiology, Moscow State University, 1999. Thesis: Anisotropy and Heterogeneity of Cytoplasm with Respect to Organelle Movement. Advisor: Prof. I.A. Vorobjev.

Publications

I.V. Maly, H.S. Wiley, and D.A. Lauffenburger. Self-organization of polarized cell signaling via autocrine circuits: computational model analysis. To appear in *Biophys. J.*, 86(1).

I.V. Maly and G.G. Borisy. Self-organization of treadmilling microtubules into a polar array. *Trends Cell Biol.*, 12:462–465 (2002).

I.V. Maly and G.G. Borisy. Self-organization of a propulsive actin network as an evolutionary process. *Proc. Natl. Acad. Sci. USA*, 98:11324–11329 (2001).

I.V. Maly. A stochastic model for patterning of the cytoplasm by the saltatory movement. *J. Theor. Biol.*, 216:59–71 (2002).

I.V. Maly. Diffusion approximation of the stochastic process of microtubule assembly. *Bull. Math. Biol.*, 64:213–238 (2002).

I.V. Maly and I.A. Vorobjev. Centrosome-dependent anisotropic random walk of cytoplasmic vesicles. *Cell Biol. Int.*, 26:791–799 (2002).

I.A. Vorobjev, V.I. Rodionov, I.V. Maly, and G.G. Borisy. Contribution of plus and minus end pathways to microtubule turnover. *J. Cell Sci.*, 112:2277–2289 (1999).

J.E. Bear, T.M. Svitkina, M. Krause, D.A. Schafer, J.J. Loureiro, G.A. Strasser, I.V. Maly, O.Y. Chaga, J.A. Cooper, G.G. Borisy, and F.B. Gertler. Antagonism between Ena/VASP proteins and actin filament capping regulates fibroblast motility. *Cell*, 109:509–521 (2002).

D.J. Tschumperlin, G. Dai, I.V. Maly, L.H. Laiho, A.K. McVittie, P.T.C. So, D.A. Lauffenburger, R.D. Kamm, and J.M. Drazen. Mechanotransduction via growth factor shedding into a compliant extracellular space. Submitted.

Selected presentations

Self-organization of treadmilling microtubules into a polar array. Biocomplexity Seminar, Interdisciplinary Center for the Study of Biocomplexity, University of Notre Dame, October 7, 2002.

Diffusion dynamics of microtubules. Contributed talk, International Conference on Theoretical and Mathematical Biology, Hilo, HI, July 15–19, 2001.

Refereeing

Journal of Theoretical Biology

Journal of Cell Science

Journal of Computational and Applied Mathematics

Membership

Society for Mathematical Biology

American Society for Cell Biology

Ivan V. Maly

References

Prof. Douglas A. Lauffenburger. Postdoctoral supervisor.

Biological Engineering Division, Massachusetts Institute of Technology. 77 Massachusetts Ave., Cambridge MA 02139. E-mail: lauffen@mit.edu. Tel: (617) 252-1629 / (617) 253-4480. Fax: (617) 258-0204 / (617) 253-2400.

Prof. Gary G. Borisy. Graduate advisor.

Department of Cell and Molecular Biology, The Feinberg School of Medicine, Northwestern University. 303 E. Chicago Ave., Chicago, IL 60611. E-mail: g-borisy@northwestern.edu. Tel: 312-503-2852. Fax: 312-503-7912.

Prof. Ivan A. Vorobjev. Undergraduate advisor and co-author.

Department of Cytology and Histology, Biological Faculty, Moscow State University. Vorobjevy Gory, 119899, Moscow, Russia. E-mail: ivorobjev@mail.ru. Tel: 7-095-939-2084. Fax: 7-095-939-3181.