

# Selected Publications through 2004

## Stanislav Y. Shvartsman

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<b>2004</b>
"Ligand Trapping in Epithelial Layers and Cell Cultures." <i>Biophys. Chem.</i> , <b>107</b> , 221, 2004 [with A.M. Berezhkovskii and L. Batsilas].
"Epidermal Growth Factor Receptor Signaling in Tissues." <i>IEE E Control Systems Magazine</i> , <b>24</b> , 53, 2004 [with H.S. Wiley and D.A. Lauffenburger].
"Signal Propagation and Failure in Discrete Autocrine Relays." <i>Phys. Rev. Lett.</i> , <b>93</b> , 2004 [with C.B. Muratov].
"Spatiotemporal Patterns of Mapk Activation in Migrating Epithelial Sheets." <i>Molec. Bio. Cell</i> , <b>15</b> , 105A, 2004 [with D.L. Nikolic, A.N. Boettiger, and J.D. Carbeck].
"Argos Inhibits Epidermal Growth Factor Receptor Signalling by Ligand Sequestration." <i>Nature</i> , <b>430</b> , 1040, 2004 [with D.E. Klein, V.M. Nappi, G.T. Reeves, and M.A. Lemmon].
"Boundary Homogenization for Trapping by Patchy Surfaces." <i>J. Chem. Phys.</i> , <b>121</b> , 11390, 2004 [with A.M. Berezhkovskii, Y.M. Makhnovskii, M.M. Monine, and V.Y. Zitserman].
<b>2003</b>
"Stochastic Model of Autocrine and Paracrine Signals in Cell Culture Assays." <i>Biophys. J.</i> , <b>85</b> , 3659, 2003 [with L. Batsilas and A.M. Berezhkovskii].
"Diffusivity in Periodic Arrays of Spherical Cavities." <i>J. Chem. Phys.</i> , <b>118</b> , 7146, 2003 [with A.M. Berezhkovskii and V.Y. Zitserman].
"Effective Diffusivity in Periodic Porous Materials." <i>J. Chem. Phys.</i> , <b>119</b> , 6991, 2003 [with A.M. Berezhkovskii and V.Y. Zitserman].
"Equilibration in Two Chambers Connected by a Capillary." <i>J. Chem. Phys.</i> , <b>119</b> , 12473, 2003 [with L. Dagdug, A.M. Berezhkovskii, and G.H. Weiss].
"An Asymptotic Study of the Inductive Pattern Formation Mechanism in Drosophila Egg Development." <i>Physica D</i> , <b>186</b> , 93, 2003 [with C.B. Muratov].
"Long-range Signal Transmission in Autocrine Relays." <i>Biophys. J.</i> , <b>84</b> , 883, 2003 [with M. Pribyl and C.B. Muratov].
"Transitions in the Model of Epithelial Patterning." <i>Devl. Dyn.</i> , <b>226</b> , 155, 2003 [with M. Pribyl and C.B. Muratov].

<p>"Discrete Models of Autocrine Signaling in Epithelial Layers." <i>Biophys. J.</i>, <b>84</b>, 3624, 2003 [with M. Pribyl and C.B. Muratov].</p>
<p>"Computational Modeling of the EGF-Receptor System: A Paradigm for Systems Biology." <i>Trends Cell. Biol.</i>, <b>13</b>, 43, 2003 [with H.S. Wiley and D.A. Lauffenburger].</p>
<p><b>2002</b></p>
<p>"Modeling and Computational Analysis of EGF Receptor-Mediated Cell Communication in Drosophila Oogenesis." <i>Development</i>, <b>129</b>, 2577, 2002 [with C.B. Muratov and D.A. Lauffenburger].</p>
<p>"Autocrine Loops with Positive Feedback Enable Context-Dependent Cell Signaling." <i>Am. J. Physiol. Cell Physiol.</i>, <b>282</b>, C545, 2002 [with A. Yacoub, M.P. Hagan, P. Dent, H.S. Wiley, and D.A. Lauffenburger].</p>
<p>"Shooting From the Hip: Spatial Control of Signal Release by Intracellular Waves." <i>Proc. Natl. Acad. Sci. USA</i>, <b>99</b>, 9087, 2002.</p>
<p><b>2001</b></p>
<p>"Why Model?" <i>Trends in Genetics</i>, <b>17</b>, 479, 2001.</p>
<p>"Spatial Range of Autocrine Signaling: Modeling and Computational Analysis." <i>Biophys. J.</i>, <b>81</b>, 341, 2001 [with H.S. Wiley, W.M. Deen, and D.A. Lauffenburger].</p>
<p>"Critical Effects in NO Reduction on Microcomposite Pt/Rh Catalysts: Experiments and Computer-Assisted Analysis." <i>Catal. Today</i>, <b>70</b>, 301, 2001 [with I.G. Kevrekidis, E. Schuetz, and R. Imbihl].</p>
<p><b>2000</b></p>
<p>"Order Reduction for Nonlinear Dynamic Models of Distributed Reacting Systems." <i>J. Process Control</i>, <b>10</b>, 177, 2000 [with S. Shvartsman, C. Theodoropoulos, R. Rico-Martinez, E.S. Titi, and T.J. Mountziaris].</p>