# Igor B. Jouline

Rod Sharp Professor
Department of Microbiology, The Ohio State University
500 Aronoff Laboratory Building, 218 W. 12th Avenue, Columbus, OH 43210
Email: jouline.1@osu.edu

## EDUCATION

St. Petersburg State University, Russia - Ph.D. Microbiology, 1988
Saratov State University, Russia - B.S. Biology/M.S. Biochemistry & Biophysics (with Honors), 1983

## PROFESSIONAL EXPERIENCE

Ohio State University, Columbus, OH
Rod Sharp Professor, Department of Microbiology (2018-present)

Oak Ridge National Laboratory, Oak Ridge, TN
Distinguished R&D Staff Member, Computing and Computational Sciences Directorate (2009-2018)
Senior R&D Staff Member, Computing and Computational Sciences Directorate (2005-2009)

University of Tennessee, Knoxville, TN
Joint Faculty Professor, Department of Microbiology (2009-2018)
Joint Faculty Associate Professor, Department of Microbiology (2005-2009)

Georgia Institute of Technology, Atlanta, GA
Assistant Professor, School of Biology (2000-2005)

Loma Linda University School of Medicine, Loma Linda, CA
Research Assistant Professor, Department of Microbiology and Molecular Genetics (1996-2000)
Postdoctoral Fellow, Department of Microbiology and Molecular Genetics (1992-1996)

University of Oxford, Oxford, United Kingdom
Postdoctoral Fellow, Department of Biochemistry (1990-1991)

Institute of Biochemistry & Physiology of Plants & Microorganisms, Russian Academy of Sciences
Research Associate, Laboratory of Biochemistry (1989-1990)
Interim Assistant Director (1988-1989)

## HONORS AND AWARDS

Rod Sharp Endowed Professor, The Ohio State University, 2018
Fellow, American Academy of Microbiology, 2017
Chairperson, International Odyssey Jury, FWO - Belgian Research Foundation (2014-present)
*Ad hoc* member, National Advisory Council for Human Genome Research, 2013
Science Advisory Board, St. Petersburg State Medical University, Russia (2012-present)

Outstanding Academic Service Award, IEEE Systems, Man & Cybernetics Society (2007)
NATO Research Fellowship (1996)
Wellcome Trust Fellowship for Young European Investigators (1990)

## PROFESSIONAL SERVICE

### Editorial boards

*mBio* (Board of Editors, 2017 – present)
*Current Opinion in Microbiology* (Editorial Board, 2016-present)
*Journal of Bacteriology* (Editor, 2008-present; Editorial Board, 2004-2008)
*Biology Direct* (Editorial Board, 2005-present)

### Journal reviewer

*Nature Reviews Microbiology, Microbiology and Molecular Biology Reviews, Trends in Biochemical Sciences, Trends in Genetics, Trends in Microbiology, FEMS Microbiology Reviews, Nature Communications, Proceedings of the National Academy of Sciences of the USA, Cell Reports, Molecular Biology and Evolution, PLoS Biology, PLoS Genetics, Nucleic Acids Research, Science Signaling, Molecular and Cellular Biology, Structure, PLoS Computational Biology, Bioinformatics, Genome Biology and Evolution, Journal of Biological Chemistry, Journal of Molecular Biology, Molecular Microbiology, Journal of Clinical Microbiology, Environmental Microbiology, Journal of Bacteriology, BMC Genomics, BMC Evolutionary Biology,* and other journals

### Review panels

Chairperson, International Odyssey Jury, Belgian Research Foundation (FWO), 2014-present
Member, NIH Panel "*Early Career Investigator - Maximizing Investigators' Research Award*" 2018
Member, NIH Panel "*Academic Research Enhancement in Genetics and Molecular Mechanisms*" 2017
*Ad hoc* member, NIH Study Section *"Modeling and Analysis of Biological Systems",* 2016
Chairperson, NIH Panel "*Member Conflicts: Bioengineering Sciences*" 2015
Member, NIH Panel "*Synthetic Genome Analysis*" 2015
Chairperson, NIH Panel "*Mechanisms of Antibiotic Resistance*" 2015
Member, NIH Panel "*Maximizing Investigators' Research Award (MIRA)*" 2015
Chairperson, NIH Panel "*Program Project: Biomedical Research Technology Center*", 2014
Chairperson, NIH Panel "*Targeting Co-dependent Molecular Pathways in Oral Cancer*", 2014
Member, NIH Panel "*Centers of Excellence for Translational Research*", 2013
Member, NIH Panel "*Bacterial Transcription and Regulation*", 2013
Member, NIH Panel "*Genomic Resources*", 2013
Chairperson, NIH panel *"Multi-Omics Data in Understanding the Human Microbiome's Role in Health and Disease",* 2013
Chairperson, NIH panel "*Shared Instrument Review: Bioengineering Sciences*" (2012-2014)
Standing member, NIH Study Section "*Prokaryotic Cell and Molecular Biology*" (2011-2014)
Member, International Odyssey Jury, Belgian Research Foundation (FWO), 2011-2013
Member, NIH Administrative Review Panel "*Human Microbiome Project*", 2011

Chairperson, NIH Panel "*Computational Tools for Human Microbiome Project*", 2010
Member, NIH Panel "*Human Microbiome Project References*", 2008
Chairperson, NIH Panel "*Small Business: Bioinformatics & Software Development*", 2007-2009
Standing member, NIH Study Section "*Biodata Management and Analysis*", 2005-2009
Member, NSF-USDA Microbial Genome Sequencing Program Panel, 2005
Member, NIH Panel "*Biodefense Proteomics Research Programs*", 2004

**Meeting Organizer/Session Chair**
Chair, Gordon Research Conference on Sensory Transduction in Microorganisms, Ventura, CA, 2018
Vice-Chair, Gordon Research Conference on Sensory Transduction in Microorganisms, Ventura, CA, 2016
Session Chair, International Symposium "Systems Biology and Bioinformatics", St. Petersburg, Russia, 2016
Discussion Leader, Gordon Research Conference on Sensory Transduction in Microorganisms, Ventura, CA, 2014
Session Chair, 4th International Conference BioMicroWorld, Malaga, Spain, 2011
Discussion Leader, Gordon Research Conference on Sensory Transduction in Microorganisms, Ventura, CA, 2010
Meeting Review Committee, BLAST IX International Conference on Bacterial Locomotion and Signal Transduction, Laughlin, NV, 2007
Co-Organizer, 5th International conference on bioinformatics "In Silico Biology", Atlanta, GA 2005
Co-Organizer, 4th International conference on bioinformatics "In Silico Biology", Atlanta, GA 2003
Co-Organizer, 3rd International conference on bioinformatics "In Silico Biology", Atlanta, GA 2001

**Professional Society Memberships**
American Society for Microbiology (1996-present)
American Association for the Advancement of Science (2002-present)
International Society for Computational Biology (2006-present)

**Professional Society Service**
Editors-in-Chief Workshop, American Society of Microbiology Journals (2017)
Colloquium "Promoting Responsible Scientific Research", American Academy of Microbiology (2016)
Morison Rogosa Award Committee, American Society for Microbiology (2006-2009)
DOE Subcommittee, FASEB Federal Funding Recommendations (2008)

**Department Service**
Division of Biology Committee on Computing (2008 – present)
Microbiology Graduate Curriculum Committee (2006 – present)
Microbiology Faculty Search Committee (2010 – 2011)
Endowed Chair in Computational Biology Search Committee (2005)
Environmental Bioinformatics and Nanotechnology Faculty Search Committee (2004)
Bioinformatics Faculty Search Committee (2002 – 2004)
Microbiology Faculty Search Committee (2002 – 2003)
Coordinator, Departmental Seminar Series (2002)
Endowed Chair in Bioinformatics Search Committee (2001 – 2002)

**University and National Laboratory Service**

Program Committee, Interdisciplinary Graduate Minor in Computational Science (2017 – present)
Leadership Team, Joint Institute for Personalized Health Initiative (2015 – 2016)
Executive Committee, Joint Institute for Computational Sciences (2010 – present)
Advisor, Director's Discretionary Fund for Computing Time Allocation, National Center for Computational Sciences (2012 – present)
Bioinformatics Faculty Search Committee, College of Agricultural Sciences and Natural Resources (2013)
UT-ORNL Governor's Chair in Biological Sciences Search Committee (2007)
UT-ORNL Joint Directed Research & Development Review Panel, Science Alliance (2007)
Laboratory Directed Research & Development Review Panel (2006, 2008, 2016)
Joint Institute for Biological Sciences Director Search Committee (2006)
Georgia Tech – University of Georgia Center for Security of Agriculture and Environment (2002 – 2005)

**PUBLICATIONS (**last name transliteration in publications – Zhulin**)**

103. Hong, Y., Z. Huang, D-F. Li, B. Ni, C.-Y. Jiang, X.-J. Liu, Y.-J. Hou, W.-S. Yang, D.-C. Wang, **I. B. Zhulin***, and S.-J. Liu*. 2018. Trimeric structure of the ligand-binding domain suggests a mode of communication in bacterial chemoreceptors (submitted for publication).

102. Liu, J., T. Murali, C. Liu, T. Yu, T. A. Sivakumaran, H. N. B. Moseley, **I. B. Zhulin**, H. L. Weis, E. B. Durbin, S. R. Ellingson, J. Liu, B. J. Hallahan, C. M. Horbinski, N. L. Vanderford, D. W. Fardo, C. Wang, and S. M. Arnold*. 2018. Characterization of squamous cell lung cancers from Appalachian Kentucky. *Cancer Epidemiology, Biomarkers & Prevention* (in press).

101. Cross, K. L., P. Chirania, W. Xiong, C. J. Beall, J, G. Elkins, R, J. Giannone, A, L. Griffen, A. M. Guss, R. L. Hettich, S. S. Joshi, E. M. Morkzan, R. K. Martin, **I. B. Zhulin**, E. J. Leys, and M, Podar*. 2018. Insights into the evolution of host association through the isolation and characterization of a human periodontal pathogen, *Desulfobulbus oralis. mBio* 9: e02061-17.

100. Ortega*, D. R. and **I. B. Zhulin***. 2018. Phylogenetic and protein sequence analysis of bacterial chemoreceptors. *Methods in Molecular Biology* 1729: 373-385.

99. Lu*, J. G., J. Bishop, S. Cheyette, **I. B. Zhulin**, S. Guo*, N. Sobreira, and S. E. Brenner. 2018. A novel PRRT2 pathogenic variant in a family with Paroxysmal Kinesigenic Dyskinesia and Benign Familial Infantile Seizures. *Cold Spring Harbor Molecular Case Studies* 4: a002287.

98. Ortega, D. R., A. D. Fleetwood, T. Krell, C. S. Harwood, G. J. Jensen, and **I. B. Zhulin***. 2017. Assigning chemoreceptors to chemosensory pathways in *Pseudomonas aeruginosa. Proceedings of the National Academy of Sciences of the USA* 114: 12809-12814.

97. Ortega, A., **I. B. Zhulin***, and T. Krell*. 2017. Sensory repertoire of bacterial chemoreceptors. *Microbiology and Molecular Biology Reviews* 81: e00033-17.

96. Adebali, O., M. G. Petukh, A. O. Reznik, A. V. Tishkov, A. Upadhyay and **I. B. Zhulin***. 2017 Class III histidine kinases: a recently accessorized kinase domain in putative modulators of type IV pili based motility. *Journal of Bacteriology* 199: e00218-17.

95. Stock, A. M. and **I. B. Zhulin**. 2017. Two-Component Signal Transduction: a Special Issue in the Journal of Bacteriology. *Journal of Bacteriology* 199: e00443-17.

94. Armitage, J. P., A. Becker, P. J. Christie, P. A. J. de Boer, V. J. DiRita, R. L. Gourse, T. M. Henkin, W. Margolin, W. W. Metcalf, C. W. Mullineaux, G. A. O'Toole, J. S. Parkinson, O. Schneewind, T. J. Silhavy, A. M. Stock, and **I. B. Zhulin**. 2017. Classic Spotlights: Selected highlights from the first 100 years of the Journal of Bacteriology. *Journal of Bacteriology* 199: e00062-17.

93. **Zhulin, I. B.** 2017. By staying together, two genes keep the motor running. *Structure* 25: 214-215.

92. Adebali*, O. and **I. B. Zhulin**. 2017. Aquerium: a web application for comparative exploration of domain-based protein occurrences on the taxonomically clustered genome tree. *Proteins* 85: 72-77.

91. **Zhulin, I.B.** 2016. Classic spotlight: Genetics of *E. coli* chemotaxis. *Journal of Bacteriology* 198: 3041.

90. Day, C. J., R. M. King, L. K. Shewell, G. Tram, T. Najnin, L. E. Hartley-Tassell, J. C. Wilson, A. D. Fleetwood, **I. B. Zhulin** and V. Korolik*. 2016. A direct-sensing galactose chemoreceptor recently evolved in invasive strains of *Campylobacter jejuni*. *Nature Communications* 7: 13206.

89. **Zhulin, I. B**. 2016. Classic spotlight: 16S rRNA redefines microbiology. *Journal of Bacteriology* 198: 2764-2765.

88. Adebali, O., A.O. Reznik, D.S. Ory, and **I.B. Zhulin*.** 2016. Establishing precise evolutionary history of a gene improves predicting disease causing missense mutations. *Genetics in Medicine* 18: 1029-1036.

87. Upadhyay, A., A.D. Fleetwood, O. Adebali, R.D. Finn, and **I.B. Zhulin***. 2016. Cache domains that are homologous to, but different from PAS domains comprise the largest superfamily of extracellular sensors in prokaryotes. *PLoS Computational Biology* 12: e1004862.

86. Buensuceso. R., Y. Nguyen, K. Zhang, M. Daniel-Ivad, S. Sugiman-Marangos, A. D. Fleetwood, **I. B. Zhulin**, M. S. Junop, P. L. Howell, and L. L. Burrows*. 2016. The conserved TPR-containing C-terminal domain of *Pseudomonas aeruginosa* FimV is required for its cAMP-dependent and independent functions. *Journal of Bacteriology* 198: 2263-2274.

85. Ortega, D.R. and **I.B. Zhulin***. 2016. Evolutionary genomics suggests that CheV is an additional adaptor for accommodating specific chemoreceptors within the chemotaxis signaling complex. *PLoS Computational Biology* 12: e1004723.

84. Wang, X., A.K. Pandey, M K. Mulligan, E.G. Williams, K. Mozhui, Z. Li, V. Jovaisaite, L.D. Quarles, Z. Xiao, J. Huang, J.A. Capra, Z. Chen, W.L. Taylor, L. Bastarache, X. Niu, K.S. Pollard, D.C. Ciobanu, A.O. Reznik, A.V. Tishkov, **I.B. Zhulin**, J. Peng, S.F. Nelson, J.C. Denny, J. Auwerx, L. Lu, and R.W. Williams*. 2016. Joint mouse-human phenome-wide association to test gene function and disease risk. *Nature Communications* 7: 10464.

83. Adebali, O., D.R. Ortega, and **I.B. Zhulin*.** 2015. CDvist: a webserver for identification and visualization of conserved domains in protein sequences. *Bioinformatics* 31: 1475-1477.

82. **Zhulin, I.B**. 2015. Databases for microbiologists. *Journal of Bacteriology* 197: 2458-2467.

81. Wisniewski-Dye, F., B. Drogue, S. Borland, C. Prigent-Combaret, K. Borziak, **I.B. Zhulin**, L. Lozano,V. Gonzalez, and P. Mavingui*. 2015. Core and accessory genomes of the diazotroph *Azospirillum*. In: *Biological Nitrogen Fixation*, volume 1, First Edition. Frans J. de Brujn (ed.), John Wiley & Sons, Inc.

80. Ulirch*, L.E., and **I.B. Zhulin**. 2014. SeqDepot: a streamlined database of protein sequences and precomputed features. *Bioinformatics* 30: 295-297.

79. Krishnan, B., S.E. Thomas, H. Yamada, R. Yan, **I.B. Zhulin**, and B.D. McKee*. 2014. Sisters Unbound is required for meiotic centromeric cohesion in *Drosophila melanogaster*. *Genetics* 198: 947-965.

78. Ortega, D.R., C. Yang, P. Ames, J. Baudry, J.S. Parkinson, and **I.B. Zhulin***. 2013. A phenylalanine rotameric switch for signal-state control in bacterial chemoreceptors. *Nature Communications* 4: 2881.

77. van Kessel, J.C., L.E. Ulrich, **I.B. Zhulin**, and B.L. Bassler*. 2013. Analysis of activator and repressor functions reveals the requirements for transcriptional control by LuxR, the master regulator of quorum sensing in *Vibrio harveyi*. *mBio* 4: 00378-13.

76. Borziak, K., A.D. Fleetwood, and **I.B. Zhulin***. 2013. Chemoreceptor gene loss and acquisition via horizontal gene transfer in *Escherichia coli*. *Journal of Bacteriology* 195: 3596-3602.

75. Ortega, D.R., G. Mo, K. Lee, H. Zhou, J. Baudry, F.W. Dahlquist, and **I.B. Zhulin***. 2013. Conformational coupling between receptor and kinase binding sites through a conserved salt bridge in a signaling complex scaffold protein. *PLoS Computational Biology* 9: e1003337.

74. Li, X., A.D. Fleetwood, C. Bayas, A.M. Bilwes, D.R. Ortega, J.J. Falke, **I.B. Zhulin***, and B.R. Crane*. 2013. The 3.2 A resolution structure of a Receptor:CheA:CheW signaling complex defines overlapping binding sites and key residue interactions within bacterial chemosensory arrays. *Biochemistry* 52: 3852-3865.

73. Cashman, D., D.R. Ortega, **I.B. Zhulin**, and J. Baudry*. 2013. Homology modeling of the CheW coupling protein of the chemotaxis signaling complex. *PLoS One* 8: e70705.

72. Rekapalli, B., K. Wuichet, G.D. Peterson, and **I.B. Zhulin***. 2012. Dynamics of domain coverage of the protein sequence universe. *BMC Genomics* 13: 634.

71. Sukharnikov, L.O., M. Alahuhta, R. Brunecky, A. Upadhyay, M.E. Himmel, V.L. Lunin*, and **I.B. Zhulin***. 2012. Sequence, structure and evolution of cellulases in the glycosyl hydrolase family 48. *Journal of Biological Chemistry* 287: 41068-41077.

70. Wisniewski-Dyé, F., K. Borziak, G. Khalsa-Moyers, G. Alexandre, L.O. Sukharnikov, K. Wuichet,

G.B. Hurst, W.H. McDonald, J.S. Robertson, V. Barbe, A. Calteau, Z. Rouy, S. Mangenot, C. Prigent-Combaret, P. Normand, M. Boyer, P. Siguier, Y. Dessaux, C. Elmerich, G. Condemine, G. Krishnen, I. Kennedy, A.H. Paterson, V. González, P. Mavingui and **I.B. Zhulin***. 2011 *Azospirillum* genomes reveal transition of bacteria from aquatic to terrestrial environments. *PLoS Genetics* 7: e1002430.

69. Sukharnikov, L.O., B.J. Cantwell, M. Podar and **I.B. Zhulin***. 2011. Cellulases: ambiguous non-homologous enzymes in a genomic perspective. *Trends in Biotechnology* 29: 473-479.

68. Wuichet, K., B.J. Cantwell and **I.B. Zhulin***. 2010. Evolution and phyletic distribution of two component signal transduction systems. *Current Opinion in Microbiology* 13: 219-225.

67. Wuichet, K. and **I.B. Zhulin***. 2010. Origins and diversification of a complex signal transduction system in prokaryotes. *Science Signaling* 3: ra50.

66. Xie, Z., L.E. Ulrich, **I.B. Zhulin** and G. Alexandre*. 2010. A PAS-domain containing chemoreceptor couples dynamic changes in metabolism with chemotaxis. *Proceedings of the National Academy of Sciences of the USA* 107: 2235-2240.

65. Ulrich, L.E. and **I.B. Zhulin***. 2010. The MiST2 database: a comprehensive genomics resource on microbial signal transduction. *Nucleic Acids Research* 38: D401-D407.

64. Anderson, I., L. Dharmarajan, J. Rodriguez, I. Porat, L. E. Ulrich, J. G. Elkins, K. Mavromatis, H. Sun, M. Land, A. Lapidus, S. Lucas, A. Copeland, H. Huber, **I. B. Zhulin**, W. Whitman, B. Mukhopadhyay, and N. Kyrpides*. 2009. The complete genome sequence of *Staphylothermus marinus* reveals differences in sulfur metabolism among heterotrophic Crenarchaeota. *BMC Genomics* 10: 145.

63. **Zhulin, I. B**. 2009. It is computation time for bacteriology! *Journal of Bacteriology* 191: 20-22.

62. Rekapalli*, B., C. Halloy, and **I. B. Zhulin**. 2009. HSP-HMMER: a tool for protein domain identification on a large scale. *Proceedings of the 24th ACM Symposium on Applied Computing, Honolulu, Hawaii*: 766-770.

61. Elliott, K. T., **I. B. Zhulin**, J. A. Stuckey, and V. J. DiRita*. 2009. Conserved residues in the HAMP domain define a new family of proposed bipartite energy taxis receptors. *Journal of Bacteriology* 191: 375-387.

60. Briegel, A., D. R. Ortega, E. I. Tocheva, K. Wuichet, Z. Li, S. Chen, A. Mueller, C. Iancu, G. Murphy, M. Dobro, **I.B. Zhulin** and G. J. Jensen*. 2009. Universal architecture of bacterial chemoreceptor arrays. *Proceedings of the National Academy of Sciences of the USA* 106: 17181-17186.

59. Anderson, I., J. Rodriguez, D. Susanti, I. Porat, C. Reich, L. E. Ulrich, J. Elkins, K. Mavromatis, A. Lykidis, E. Kim, L.S. Thompson, M. Nolan, M. Land, A. Copeland, A. Lapidus, S. Lucas, C. Detter, P. Richardson, **I. B. Zhulin**, W. Whitman, B. Mukhopadhyav, C. Woese and N. Kyrpides*. 2008. Genome sequence of the Crenarchaeal hyperthermophile *Thermofilum pendens* reveals an unprecedented loss of biosynthetic pathways in a free-living organism. *Journal of Bacteriology* 190: 2957-2965.

58. Fredrickson*, J. K., M.F. Romine, A. S. Beliaev, J. M. Auchtung, M. E. Driscoll, T. S. Gardner, K. H. Nealson, A. L. Osterman, G. Pinchuk, J. L. Reed, D. A. Rodionov, J. L. Rodrigues, D. A. Saffarini, M. H. Serres, A. M Spormann, **I. B. Zhulin**, and J. M. Tiedje*. 2008. Towards environmental systems biology of *Shewanella*. *Nature Reviews Microbiology* 6: 592-603.

57. Belas*, R., **I. B. Zhulin** and Z. Yang. 2008. Bacterial sensing and motility: sure bets. *Journal of Bacteriology* 190: 1849-1856.

56. Werner*, R. M., L. E. Taylor 2nd, B. Henrissat, L. Hauser, M. Land, P. M. Coutinho, C. Rancurel, E. H. Saunders, A. G. Longmire, H. Zhang, E. A. Bayer, H. J. Gilbert, F. Larimer, **I. B. Zhulin**, N. A. Ekborg, R. Lamed, P. M. Richardson, I. Borovok, and S. Hutcheson. 2008. Complete genome sequence of the complex carbohydrate-degrading marine bacterium *Saccharophagus degradans* strain 2-40 T. *PLoS Genetics* 4: e1000087.

55. Borziak, K. and **I.B. Zhulin*.** 2007. FIST: a sensory domain for diverse signal transduction pathways in prokaryotes and ubiquitin signaling in eukaryotes. *Bioinformatics* 23: 2518-2521.

54. Alexander, R.P. and **I.B. Zhulin***. 2007. Evolutionary genomics reveals conserved structural determinants of signaling and adaptation in microbial chemoreceptors. *Proceedings of the National Academy of Sciences of the USA* 104: 2885-2890.

53. Ulrich, L.E and **I.B. Zhulin***. 2007. MiST: a Microbial Signal Transduction database. *Nucleic Acids Research* 35: D386-D390.

52. Wuichet, K., R.P. Alexander, and **I.B. Zhulin***. 2007. Comparative genomic and protein sequence analyses of a complex system controlling bacterial chemotaxis. *Methods in Enzymology* 422: 3-31.

51. Chain, P.S.G., V.J. Denef, K. Konstantinidis, L.M.Vergez, L. Agullo, V.L.Reyes, L. Hauser, M. Cordova, L. Gomez, M. Gonzalez, M. Land, V. Lao, F. Larimer, J.J. LiPuma, E. Mahenthiralingam, S.A. Malfatti, C.J. Marx, J.J. Parnell, A. Ramette, P. Richardson, M. Seeger, D. Smith, T. Spilker, W.J. Sul, T.V. Tsoi, L.E. Ulrich, **I.B. Zhulin**, and J.M. Tiedje*. 2006. *Burkholderia xenovorans* LB400 harbors a multi-replicon, 9.73 M bp genome shaped for versatility. *Proceedings of the National Academy of Sciences of the USA* 103: 15280-15287.

50. Alexandre G. and **I.B. Zhulin***. 2006. Chemotaxis in soil diazotrophs: survival and adaptive response. In *Associative and Endophytic Nitrogen-fixing Bacteria and Cyanobacterial Associations*. C. Elmerich and W.E. Newton, Eds. Springer, pp. 73-84.

49. Ulrich, L.E. and **I.B. Zhulin***. 2005. Four-helical bundle: a ubiquitous sensory module in prokaryotic signal transduction. *Bioinformatics* 21 Suppl 3: iii45-iii48.

48. Wu, M., Q. Ren, A. S. Durkin, S. C. Daugherty, L. M. Brinkac, R. J. Dodson, R. Madupu, S. A. Sullivan, J. F. Kolonay, W. Nelson, L. J. Tallon, K. M. Jones, L. E. Ulrich, J. M. Gonzalez, **I. B. Zhulin**, F. T. Robb and J. A. Eisen*. 2005. Life in hot carbon monoxide: the complete genome sequence of *Carboxydothermus hydrogenoformans* Z-2901. *PLoS Genetics* 1: e65.

47. Ulrich, L.E., E.V. Koonin and **I.B. Zhulin***. 2005. One-component regulators dominate signal transduction in prokaryotes. *Trends in Microbiology* 13: 52-56.

46. Alexandre, G. and **I.B. Zhulin***. 2004. Ecological role of energy taxis. *FEMS Microbiology Reviews* 28: 113-126.

45**. Zhulin, I.B**. 2004. Digging with experimental pick and computational shovel: a new addition to the histidine kinase superfamily. *Journal of Bacteriology* 186: 267-269.

44. Mazzag, B., **I.B. Zhulin** and A. Mogilner. 2003. Model of bacterial band formation in aerotaxis. *Biophysical Journal* 85: 3558-3574.

43. Phillips-Greer, S.E., Alexandre, G., Taylor, B.L. and **I.B. Zhulin***. 2003. Aer and Tsr guide *Escherichia coli* in spatial gradients of oxidizable substrates. *Microbiology* 149: 2661-2667.

42. Wuichet, K. and **I.B. Zhulin***. 2003. Molecular evolution of sensory domains in cyanobacterial chemoreceptors. *Trends in Microbiology* 11: 200-203.

41. Shu, C.J., L.E. Ulrich and **I.B. Zhulin***. 2003. The NIT domain: a predicted nitrate responsive module in bacterial sensory receptors. *Trends in Biochemical Sciences* 28: 121-124.

40. Alexandre, G. and **I. B. Zhulin***. 2003. Different evolutionary constraints on CheW and CheY proteins revealed by heterologous expression studies and protein sequence analysis. *Journal of Bacteriology* 185: 544-552.

39. **Zhulin*, I.B.,** A. Nikolskaya and M. Y. Galperin. 2003. Common sensory domains in transmembrane receptors for diverse signal transduction pathways in Bacteria and Archaea. *Journal of Bacteriology* 185: 285-294.

38. Hauwaerts, D., G. Alexandre, S. Das, J. Vanderleyden and **I.B. Zhulin***. 2002. A major chemotaxis gene cluster in *Azospirillum brasilense* and relationships between chemotaxis operons in α-proteobacteria. *FEMS Microbiology Letters* 208: 61-67.

37. Aizawa, S.-I., **I. B. Zhulin**, L. Marquez-Magana and G. W. Ordal*. 2002. Chemotaxis and Motility, pp. 437-452. *In* A. L. Sonenshein et al. (Ed.). *Bacillus subtilis* and Its Closest Relatives: from Genes to Cells. ASM Press, Washington, DC.

36. Shiomi, D., **I. B. Zhulin**, M. Homma and I. Kawagishi*. 2002. Dual recognition of the bacterial chemoreceptor by chemotaxis-specific domains of the CheR methyltransferase. *Journal of Biochemical Chemistry* 277: 42325-42333.

35. Sun, X., **I. Zhulin** and R. M. Wartell*. 2002. Predicted structure and phyletic distribution of the RNA binding protein Hfq. *Nucleic Acids Research* 30: 3662-3671.

34. Perelygin, A.A., S.V. Scherbik, **I.B. Zhulin**, B.M. Stockman, Y. Li and M.A. Brinton. 2002. Positioning cloning of the murine flavivirus resistance gene. *Proceedings of the National Academy of Sciences of the USA* 99: 9322-9327.

33. Shu, C.J. and **I.B. Zhulin***. 2002. ANTAR: an RNA-binding domain in transcription antitermination regulatory proteins. *Trends in Biochemical Sciences* 27: 3-5.

32. **Zhulin, I. B.** 2001. The superfamily of chemotaxis transducers: from physiology to genomics and back. *Advances in Microbial Physiology* 45: 157-198.

31. Alexandre, G. and **I. B. Zhulin***. 2001. More than one way to sense chemicals. *Journal of Bacteriology* 183: 4681-4686.

30. Iyer, L. M., L. Aravind, P. Bork, K. Hoffmann, A. R. Mushegian, **I. B. Zhulin**, and E. V. Koonin*. 2001. *Quod erat demonstrandum*? The mystery of experimental validation of apparently erroneous computational analyses of protein sequences. *Genome Biology* 2: research0051.1-0051.11.

29. Kirby, J. R., C. J. Kristich, M. M. Saulmon, L. F. Garrity, **I. B. Zhulin**, and G. W. Ordal*. 2001. CheC is related to the family of flagellar switch proteins and acts independently from CheD to control chemotaxis in *Bacillus subtilis*. *Molecular Microbiology* 42: 573-585.

28. Mougel, C. and **I. B. Zhulin***. 2001. CHASE: an extracellular sensing domain common to transmembrane receptors from prokaryotes, lower eukaryotes and plants. *Trends in Biochemical Sciences* 26: 582-584.

27. Repik, A. V., A. Rebbapragada, M. S. Johnson, J. O. Haznedar, **I. B. Zhulin** and B. L. Taylor*. 2000. PAS domain residues involved in signal transduction by the Aer redox sensor of *Escherichia coli*. *Molecular Microbiology* 36: 806-816.

26. Alexandre, G., S. E. Greer, and **I. B. Zhulin***. 2000. Energy taxis is the dominant behavior in *Azospirillum brasilense*. *Journal of Bacteriology* 182: 6042-6048.

25. **Zhulin, I. B**. 2000. A novel phototaxis receptor hidden in the cyanobacterial genome. *Journal of Molecular Microbiology and Biotechnology* 2: 491-493.

24. Alexandre, G., and **I. B. Zhulin***. 2000. Laccases are widespread in bacteria. *Trends in Biotechnology* 18: 41-42.

23. Alexandre, G., R. Bally, B. L. Taylor and **I. B. Zhulin***. 1999. Loss of cytochrome *c* oxidase activity and acquisition of resistance to exogenous quinones in a laccase-positive variant of *Azospirillum lipoferum*. *Journal of Bacteriology* 181:6730-6738.

22. Taylor*, B. L., **I. B. Zhulin**, and M. S. Johnson. 1999. Aerotaxis and related responses in bacteria. *Annual Review of Microbiology* 53:103-128.

21. Taylor*, B. L., and **I. B. Zhulin**. 1999. PAS domains: internal sensors of oxygen, redox potential and light. *Microbiology and Molecular Biology Reviews* 63:479-506.

20. **Zhulin*, I. B**., and B. L. Taylor. 1998. Correlation of PAS domains with electron transport associated proteins in completely sequenced microbial genomes. *Molecular Microbiology* 29:1522-1523.

19. Taylor*, B. L., and **I. B. Zhulin**. 1998. In search of a higher energy: metabolism-dependent behavioral responses in bacteria. *Molecular Microbiology* 28: 683-690.

18. Reinhold-Hurek, B., and **I. B. Zhulin***. 1997. Terminal oxidases of *Azoarcus* sp. BH72, a strictly respiratory diazotroph. *FEBS Letters* 404:143-147.

17. **Zhulin, I. B**., Rowsell, E. H., Johnson, M. S., and B. L. Taylor*. 1997. Glycerol elicits energy taxis in *Escherichia coli* and *Salmonella typhimurium. Journal of Bacteriology* 179:3196-3201.

16. Johnson, M. S., **I. B. Zhulin**, E. Gapuzan, and B. L. Taylor*. 1997. Oxygen dependent growth of the obligate anaerobe *Desulfovibrio vulgaris* Hildenborough. *Journal of Bacteriology* 179:5598-5601.

15. Rebbapragada, A., M. S. Johnson, G. P. Harding, A. J. Zuccarelli, H. M. Fletcher, **I. B. Zhulin**, and B. L. Taylor*. 1997. The Aer protein and the serine chemoreceptor Tsr independently sense intracellular energy levels and transduce oxygen, redox, and energy signals for *Escherichia coli* behavior. *Proceedings of the National Academy of Sciences of the USA* 94:10541-10546.

14. **Zhulin*, I. B**., Johnson, M. S., and B. L. Taylor. 1997. How do bacteria avoid high oxygen concentrations? *Bioscience Reports* 17:335-342.

13. **Zhulin, I. B**., B. L. Taylor*, and R. Dixon. 1997. PAS domain S-boxes in Archaea, Bacteria and sensors for oxygen and redox. *Trends in Biochemical Sciences* 22:331-333.

12 **Zhulin*, I. B**., Bespalov, V. A., M. S. Johnson, and B. L. Taylor. 1996. Oxygen taxis and proton motive force in *Azospirillum brasilense*. *Journal of Bacteriology* 178:5199-5204.

11. Bespalov, V. A., **I. B. Zhulin***, and B. L. Taylor. 1996. Behavioral responses of *Escherichia coli* to changes in redox potential. *Proceedings of the National Academy of Sciences of the USA* 93:10084-10089.

10. Wong, L. S., M. S. Johnson, **I. B. Zhulin**, and B. L. Taylor*. 1995. Role of methylation in *Bacillus subtilis* aerotaxis. *Journal of Bacteriology* 177: 3985-3991.

9. **Zhulin, I. B**., A. F. Lois, and B. L. Taylor*. 1995. Behavior of *Rhizobium meliloti* in oxygen gradients. *FEBS Letters* 367: 180-182.

8. **Zhulin*, I. B**., L. E. Sarmiento, and B. L. Taylor. 1995. Changes in membrane potential upon chemotactic stimulation of *Azospirillum brasilense,* p.299-305. *In* I. Fendrik, M. Del Gallo, J. Vanderleyden and M. de Zamaroczy (Ed.), *Azospirillum* VI and Related Microorganisms: Genetics, Physiology, Ecology. NATO ASI Series, Vol. G 37. Springer-Verlag, Berlin.

7. **Zhulin*, I. B**., and B. L. Taylor. 1995. Chemotaxis in plant-associated bacteria: the search for the ecological niche, p.451-459. *In* I. Fendrik, M. Del Gallo, J. Vanderleyden and M. de Zamaroczy (Ed.), *Azospirillum* VI and Related Microorganisms: Genetics, Physiology, Ecology. NATO ASI Series, Vol. G 37. Springer-Verlag, Berlin.

6. **Zhulin, I. B**., and J. P. Armitage*. 1993. Motility, chemokinesis, and methylation-independent chemotaxis in *Azospirillum brasilense*. *Journal of Bacteriology* 175: 952-958.

5. **Zhulin*, I. B**., and J. P. Armitage. 1992. The role of taxis in the ecology of *Azospirillum*. *Symbiosis* 13: 199-206.

4. **Zhulin*, I. B**., I. B. Gibel, and V. V. Ignatov. 1991. A rapid method for the measurement of bacterial chemotaxis. *Current Microbiology* 22: 307-309.

3. Grishanin, R. N., I. I. Chalmina, and **I. B. Zhulin***. 1991. Behaviour of *Azospirillum brasilense* in a spatial gradient of oxygen and a "redox" gradient of an artificial electron acceptor. *Journal of General Microbiology* 137: 2781-2785.

2. Shchyogolev*, S. Yu. and **I. B. Zhulin**. 1990. Effective method of cell agglutination analysis by lectins, p. 405-409. *In* J. Kocourek and D. L. J. Freed (Ed.), Lectins - Biology, Biochemistry, Clinical Biochemistry, Vol. 7, Sigma Chemical Co, St. Louis, Mo.

1. **Zhulin, I. B**., S. E. Tretyakova, and V. V. Ignatov. 1988. Chemotaxis of *Azospirillum brasilense* towards compounds typical of plant roots exudates. *Folia Microbiologica* 33: 277-280.

## INVITED TALKS

Physics for Life Sciences conference, St. Petersburg, Russia, 2017
Receptor Fest 20th Annual Meeting, Salt Lake City, UT, 2017
Department of Microbiology, Ohio State University, OH, 2017
Max-Planck-Institute for Terrestrial Microbiology, Marburg, Germany, 2016
Pacific Symposium on Biocomputing (PCB 2016), Kohala Coast, HI, 2016
Receptor Fest 19th Annual Meeting, Boulder, CO, 2015
UT-KBRIN Bioinformatics Summit, Cadiz, KY, 2016
SolBio International Conference "Bioinformatics & Computational Biology for Innovative Genomics", Riviera Maya, Mexico, 2016
International Symposium "Systems Biology and Bioinformatics", St. Petersburg, Russia, 2016
Center for Clinical & Translational Studies, University of Kentucky, 2015
115th General Meeting of the American Society for Microbiology, New Orleans, LA, 2015
Moscow Conference on Computational Molecular Biology, Moscow, Russia, 2015
Department of Physics and Astronomy, Clemson University, 2015
Receptor Fest 18th Annual Meeting, Boulder, CO, 2015
Department of Structural and Molecular Biology, University College London, U.K., 2015
Health Science Center, University of Tennessee-Memphis. 2014
St. Petersburg State Medical University, Russia. 2014
Gordon Research Conference on Human Single Nucleotide Polymorphisms and Disease, Easton, MA. 2014
Institut Pasteur, France, 2014
*Plenary speaker*, 21st International Symposium "Nanostructures: Physics and Technology", St. Petersburg, Russia. 2013
Ioffe Institute for Physics and Technology, St. Petersburg, Russia, 2013
Department of Biology, Ludwig-Maximilian-University, Munich, Germany, 2013
3rd International Symposium "The Bacterial Cell Envelope: Structure, Function, and Infection Interface", Kaufbeuren, Germany, 2013
Gordon Research Conference on Sensory Transduction in Microorganisms, Ventura, CA, 2012
Department of Microbiology, St. Petersburg State Medical University, Russia, 2012
Distinguished seminar series, Center for Bioinformatics and Computational Biology, University of Maryland, College Park, 2012
Department of Biology, University of Utah, 2012

Workshop on the Skolkovo Tech Research Center, Ioffe Institute for Physics and Technology, St. Petersburg, Russia, 2012
Joint Seminars in Molecular Biology, University of California, Davis, 2012
Center for Plant and Microbial Genomics, Katholieke Universiteit Leuven, Belgium, 2011
Moscow Conference on Computational Molecular Biology, Moscow, Russia, 2011
Perspectives in Biology Symposium, Wake Forest University, NC, 2011
Department of Molecular Biology, Princeton University, 2010
12th International Symposium on Biological Nitrogen Fixation, Buzios, Brazil, 2010
3d International conference BioMicroWorld 2009, Lisbon, Portugal, 2009
Department of Biology, Morehouse College, Atlanta, 2009
The Samuel Roberts Noble Foundation, 2009
Department of Biostatistics, Bioinformatics & Epidemiology, Medical University of South Carolina, 2009
Department of Microbiology, University of Iowa, 2009
7th International conference on Bioinformatics "In Silico Biology", Atlanta, GA, 2009
Department of Mathematical Sciences, Middle Tennessee State University, 2009
Biozentrum, University of Basel, Switzerland, 2009
DOE International Workshop on Exascale Computing in Biology, Chicago, IL, 2009
*Keynote speaker*, Swiss Institute for Bioinformatics Annual "Scientific Days", Fribourg, Switzerland, 200
Laboratory of Microbial Ecology, Clause Bernard University, Lyon, France, 2009
DOE Genomics:GTL meeting on *Shewanella*, Washington, D.C., 2008
Gordon Research Conference on Sensory Transduction in Microorganisms, Ventura, CA, 2008
Department of Microbiology, Georgetown University School of Medicine, Washington, 2008
IEEE 7th International Symposium on Bioinformatics & Bioengineering, Cambridge, MA, 2007
Department of Computer Science, University of North Carolina at Charlotte, 2007
Department of Bioengineering and Bioinformatics, Moscow State University, Russia, 2007
Department of Microbiology and Molecular Genetics, University of Texas, Houston, 2007
15th International Congress on Nitrogen Fixation, Cape Town, South Africa, 2007
Department of Microbiology, University of Georgia, 2007
BLAST IX International Conference on Bacterial Locomotion and Signal Transduction, Laughlin, NV, 2007
Department of Biological Sciences, University of Idaho, 2007
*Plenary speaker*, Systems Biology & Bioinformatics Symposium of The Biomedical Engineering Society Annual Meeting BMES 2006, Chicago, IL, 2006
Department of Biology, University of Arkansas, 2006
Gordon Research Conference on Sensory Transduction in Microogranisms, Ventura, CA, 2006
DOE Joint Genome Institute, Walnut Creek, CA, 2006
105th General meeting of the American Society for Microbiology, Orlando, FL, 2006
93d Boehringer-Ingelholm Fonds International Conference "Mechanisms of Chemotaxis", Titisee, Germany, 2006
Pacific Northwest National Laboratory, Richland, WA. 2006
Division of Biological Sciences, University of California, San Diego, 2006
DOE Genomics:GTL meeting on *Geobacter*, University of Massachusetts, Amherst, MA, 2005
Department of Biology, Texas A&M University, 2005
Joint meeting of the International Union of Microbiological Societies, San Francisco, CA, 2005
104th General meeting of the American Society for Microbiology, New Orleans, LA, 2004
Isle of Palms Bioinformatics Symposium, Charleston, SC, 2004
Gordon Research conference on Sensory Transduction in Microorganisms, Ventura, CA, 2004
Center for Biomedical Sciences, University of Ulster, United Kingdom, 2004
Department of Microbiology, University of Tennessee, Knoxville, 2004

Computational Biology Institute, Oak Ridge National Laboratory, 2004
7th International meeting on Bacterial Locomotion and Signal Transduction, Cuernavaca, Mexico, 2003
Department of Microbiology, University of Massachusetts, Amherst, 2003
Laboratory of Microbial Ecology, Claude Bernard University, Lyon, France, 2003
Institut Pasteur, Paris, France, 2003
Institute for Plant-Microbe Interactions, CNRS-INRA, Castanet-Tolosan, France, 2003
University System of Georgia Annual Research Symposium "Applying Bioinformatics: From Genes to Systems", Atlanta, GA, 2002
Department of Microbiology, University of Hawaii, Honolulu, 2002
Computational Biology Unit, Argonne National Laboratory, Chicago, 2002
5th European Conference on Nitrogen Fixation, Norwich, UK, 2002
3d International conference on Bioinformatics "In Silico Biology", Atlanta, GA, 2001
13th International Congress on Nitrogen Fixation, Hamilton, Canada, 2001
Oak Ridge Associated Universities Workshop on Genomics, Durham, NC, 2001
6th International meeting on Bacterial Locomotion and Signal Transduction, Cuernavaca, Mexico, 2001
8th International Symposium on Nitrogen Fixation, Sydney, Australia, 2001
Department of Microbiology and Immunology, Emory University School of Medicine, 2001
Center for Microbial and Plant Genomics, Katholieke Universiteit Leuven, Belgium, 2001
Gordon Research Conference on Sensory Transduction in Microorganisms, Ventura, CA, 2000
School of Biology, Georgia Institute of Technology, 2000
Center for Marine Biotechnology, Baltimore, 2000
Integrated Genomics, Chicago, 2000
Department of Cell Biology and Molecular Genetics, University of Maryland, College Park, 2000
Department of Biology, University of California, San Diego, 1999
National Institute for Agricultural Research, Dijon, France, 1999
Laboratory of Microbial Ecology, Claude Bernard University, Lyon, France, 1999
6th ASM Meeting "Small Genomes", Arrowhead, CA, 1998
Department of Plant Pathology, University of California, Riverside, 1998
National Center for Biotechnology Information, NIH, 1998
Department of Biology, Moscow State University, Russia, 1997
11th International Congress on Nitrogen Fixation, Paris, France, 1997
Department of Plant Pathology, University of Arizona, 1996
NATO Advanced Research Workshop on Nitrogen Fixation, Poznan, Poland, 1996
3th International meeting on Bacterial Locomotion and Signal Transduction, Cuernavaca, Mexico, 1995
NATO Advanced Research Workshop "*Azospirillum* VI", Sarvar, Hungary, 1994
1st European Nitrogen Fixation Conference, Szeged, Hungary, 1994

## RESEARCH GRANTS AND CONTRACTS

### Current

2015-2019 Computational Genomics of Signal Transduction, 2R01 GM072285-10, National Institutes of Health, $1,121,535, Principal Investigator.

2014-2019 Culturing the Uncultured: Reverse Genomics and Multispecies Consortia in Oral Microbiome, 1R01 DE024463, National Institutes of Health, $8,256,314, Principal Investigator (multiple PIs).

**Past**

2017-2018 Sensory Transduction in Microorganisms Gordon Research Conference & Gordon Research Seminar, 1R13AI136460, National Institutes of Health, $8,000, Principal Investigator.

2010-2015 Computational Genomics of Signal Transduction, 2R01 GM072285-06, National Institutes of Health, $1,136,227, Principal Investigator.

2012-2013 Large-scale Molecular Dynamics Simulation of a Microbial Chemoreceptor, National Institutes of Health/National Resource for Biomedical Computing, Time allocation on Anton supercomputer, Co-Principal Investigator (PI: J. Baudry).

2009-2012 Collaborative Research: An EPSCoR Desktop to TeraGrid Ecosystem, National Science Foundation, $3,324,669, Lead Investigator (PI: J. Bottum).

2009-2011 Computational Biology Toolbox for Ultrascale Computing, LDRD, US Department of Energy, $600,000, Principal Investigator.

2007-2012 DOE Bioenergy Research Center, US Department of Energy, $125,000,000, Key Investigator (PI: M. Keller).

2007-2009 Improved Genetic Selection of Plant Growth Promoting Bacteria for Rice and Wheat, DP0771664, Australian Research Council, $1,222,818, Co-Principal Investigator, (PI: I. Kennedy).

2006-2009 Integrated Genome-Based Studies of *Shewanella* Ecophysiology, US Department of Energy, $13,500,000, Co-Principal Investigator, (PI: J. Fredrickson).

2004-2009 Computational Genomics of Signal Transduction, R01 GM072285, National Institutes of Health, $1,253,670, Principal Investigator.

2004-2007 Genome Sequencing of Plant-Associated *Azospirillum brasilense*, EF-0412186, National Science Foundation, $791,217, Principal Investigator.

2002-2003 Comparative Genomics of Signal Transduction in Prokaryotes, EIA-0219079, National Science Foundation, $142,000, Principal Investigator.

2001-2002 Comparative and Functional Genomic Analyses of Hemicellulose Biosynthesis in Xylem Cells, Institute of Paper Science and Technology, $40,000, Principal Investigator.

1999-2001 Motility Genes and their Products in a Bacterium with Mixed Flagellation, LST.CLG 975040, North Atlantic Treaty Organization, BEF 450,000, Principal Investigator.

1998-1999 Molecular Mechanism of Taxis in *Azospirillum brasilense*, 0315-8845-20, National Medical Technology TestBed, $9,650, Principal Investigator.

1996-1998 Behavioral Responses of *Azospirillum brasilense* Involved in Nitrogen Fixation, 96-35305-

3795, US Department of Agriculture, $106,694, Principal Investigator.

## TEACHING

University of Tennessee
- Micro480/Micro540/LifeSci507 *Bioinformatics and Genomics* (2006-2018)
- LifeSci517 *Advances in Computational Biology* (2007-2008)
- LifeSci504 *Bioinformatics Journal Club* (2006-2007)

Georgia Institute of Technology
- BIOL8803 *Bioinformatics and Genomics* (2002-2005)
- BIOL3310 *Introductory Microbiology* (2001-2004)
- BIOL4390 *Microbiology Project Laboratory* (2002)

Loma Linda University School of Medicine
- MICRO545 *Bioinformatics and Genomics* (2000)
- MICRO510 *Colloquium in Microbiology* (1999)

Other universities (guest lecturer)
- Honors Program, St. Petersburg State Medical University, Russia, 2012
- Frontiers in Genomics, National Program, UNAM, Mexico, 2008
- 3d Annual BIOMAPS Summer School, Rutgers-Princeton-IBM, NJ, 2007
- Advanced Bacterial Genetics Course, Cold Spring Harbor Laboratory, 2005

## TRAINEES

### Postdoctoral Associates

Ekaterina Andrianova (2017-present)
Vadim Gumerov (2017-present)
Marharyta Petukh (2015-2018), *Assistant Professor, Presbyterian College*
Aaron Fleetwood (2014-2016) *MD candidate, University of Tennessee Health Science Center*
Sangita Choudhury (2010-2011) *Research Associate, Harvard Medical School*
Se-Ran Jun (2010-2011) *Assistant Professor, University of Arkansas for Medical Sciences*
Leonid Sukharnikov (2009-2012) *Senior Software Engineer, LTN Global Communications*
Bhanu Rekapalli (2008-2011) *Principal Investigator, BioTeam, Inc.*
Brian Cantwell (2008-2010) *Research Scientist, American Type Culture Collection*
Christophe Mougel (2000-2001) *Charge de recherché, INRA-CMSE, Dijon, France*
Gladys Alexandre (1999-2001) *Professor, Department of Biochemistry, Cell and Molecular Biology, University of Tennessee*
Subrata K. Das (1998-1999) *Associate Professor, Institute of Life Sciences, Bhubaneswar, India*

**PhD Students**

Karissa Cross (2015-present) Microbiology (Co-Advisor with Mircea Podar)
Ogun Adebali (2011-2016) *Assistant Professor, Sabanci University, Turkey*
Amit Upadhyay (2010-2015) *Postdoctoral Fellow, Emory University*
Aaron Fleetwood (2008-2014) *MD student, University of Tennessee*
Kirill Borziak (2007-2012) *Postdoctoral Fellow, Syracuse University*
Davi Ortega (2006-2012) *Research Associate, California Institute of Technology*
Kristin Wuichet (2002-2007) *Postdoctoral Fellow, Max-Planck-Institute for Terrestrial Microbiology, Marburg, Germany*
Roger Alexander (2003-2007) *Postdoctoral Fellow, Yale University*
Lance Miller (2001-2007) *Senior Associate, American Association for the Advancement of Science*
Luke Ulrich (2001-2006) *President and CEO, Agile Genomics, LLC*

**MS Students**

Harold Shanafield (2006-2008) *Research Specialist, Oak Ridge National Laboratory*
Kunmi Ayanbule (2003-2005) *Director of Engineering, Zenefits*
William Black (2002-2004) *MD, Assistant Professor, University of Mississippi Medical Center*
Siddharth Joshi (2002-2004) *Lecturer, Georgia Military College*
Omar Alexander (2001-2003) *MD, Internal Medicine, Greenville SC*
Enid McKinley (1999-2000) *Senior Scientist, Merck Animal Health*
Sean A. Bulloch (1997-1999) *Principal Analyst, Allergan, Plc*

**Undergraduate Students**

Erin Sweeny (2017) *Student, University of Tennessee*
Sarah Ramsey (2016) *Student, University of Tennessee*
Ruth Watson (2015) *Student, University of Tennessee*
Fredrick Mccorkie (2014) *Student, University of Tennessee*
Jacob Pollack (2013) *Computer Engineer, University of Tennessee*
Alexander Sokolov (2010) *Project Manager, Oak Ridge National Laboratory*
Tatiana Perevozchikova (2008) *PhD, Principal Scientist, GlaxoSmithKline*
Jason Reeves (2005) *PhD, Senior Scientist, Jounce Therapeutics, Inc.*
Thomas Filip (2005) *Senior Team Leader, Networking Services, GE digital*
Kirill Borziak (2004-2005) *PhD, Postdoctoral Fellow, Syracuse University*
Amy Alexcovich (2004) *DDS, Dentist, Strong Area Dental Center, Phillips, ME*
Alice Metzger (2004) *DDS, Dentist, Douglassville, GA*
Chinequa Patterson (HHMI intern, 2004) *PhD student, Wayne State University*
Kalpit Patel (2004) *MD, family medicine, Smyrna, GA*
Justin Wilkin (2004) *MD, ophthalmology, Canton, GA*
Madhumitha Rajagopal (2003-2004) *PhD, Senior Research Associate, University of Kansas*
Mohammad Massoomi (2002), *MD, Assistant Professor, University of Florida College of Medicine*
Andrea Liatis (2001) *Clinical Coordinator, Emory University*

Chengyi Shu (HHMI intern, 2001-2002) *Senior Scientist, Jounce Therapeutics, Inc.*

**High School Students**

Katherine Xue (2008-2009) *PhD student, Genome Sciences, University of Washington*
Alborz Bejnoon (2008-2009) *PhD student, Stanford University School of Medicine*

**Visiting Students and Scientists**

Philipp Popp (2018, expected) *PhD Student, Technical University, Dresden, Germany*
Tatiana Chontorozea (2014) *Postdoctoral Associate, Biozentrum Basel, Switzerland*
Alexander Reznik (2014) *Physician-trainee, St. Petersburg State Medical University, Russia*
Artem Tishkov (2014) *Associate Professor, St. Petersburg State Medical University, Russia*
Florence Wisniewski-Dye (2010) *Assistant Professor, Claude Bernard University, France*
Patrick Mavingui (2010) *Assistant Professor, Claude Bernard University, France*
Ariane Briegel (2008) *Postdoctoral Associate, California Institute of Technology*
Samantha Braiman (2008) *Undergraduate Student, Columbia University*
Masaru Kojima (2006) *PhD student, Nagoya University, Japan*
Ivan Kennedy (2005) *Director, Centre for Nitrogen Fixation, University of Sydney, Australia*
Laurent Philippot (2004) *Group leader, INRA, Dijon, France*
Daisuke Shiomi (2000) *PhD Student, Nagoya University, Japan*
Dieter Hauwaerts (1998) *PhD Student, KU Leuven, Belgium*

**Trainee Awards**

Bhanu Rekepalli, Best poster award, 1st conference on Extreme Science and Engineering Discovery Environment, XSEDE 12, Chicago. 2012
Katherine Xue and Alborz Bejnoon, 2nd place in Microbiology team competition, Intel International Science and Engineering Fair, Reno, Nevada, 2009
Katherine Xue and Alborz Bejnoon, winners, Appalachian Science Fair, 2009
Katherine Xue and Alorz Bejnoon, finalists of the regional (Southwest) Siemens Science Competition, 2008
Luke Ulrich, Georgia Tech College of Science Outstanding Graduate student award, 2005
Roger Alexander, Bob Macnab Best Poster Award, BLAST VIII Meeting, 2005
Jason Reeves, Georgia Tech President's Undergraduate Research award, 2004
Luke Ulrich, National Science Foundation IGERT fellowship, 2003
Andrea Liatis, Georgia Tech President's Undergraduate Research award, 2001

**Outreach**

Lecturer, Social Studies class, Cedar Bluff Middle School, Knoxville, 2013
Lecturer, Science AP class, Farragut High School, Knoxville, 2010
Project Supervisor for Katherine Xie and Albortz Bejnood, Oak Ridge High School, 2008-2009
Keynote speaker, Tennessee Junior Sciences and Humanities Symposium, 2008
Award presenter, Tennessee Science Olympiad State Competition. 2008

Lecturer, Mathematics class, Oak Ridge High School, 2007
Lecturer, Pre-Game Faculty Showcase, University of Tennessee Football, 2007