Jianzhi "George" Zhang

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4018 Biological Sciences Building, 1105 North University Avenue, Ann Arbor, MI 48109, USA
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EDUCATION

1988–1992 B.S. in Genetics, Fudan University, Shanghai, China

1992–1994 M.S. Program in Genetics, Fudan University, Shanghai, China

1994–1998 Ph.D. in Genetics, Pennsylvania State University, University Park, PA.
Thesis: Patterns and mechanisms of molecular evolution: statistical methods and data analysis. Advisor: Dr. Masatoshi Nei

EMPLOYMENT

1993–1994 Teaching Assistant, Institute of Genetics, Fudan University, Shanghai, China

1994–1998 Research Assistant and Teaching Assistant, Department of Biology, Pennsylvania State University

1999–2001 Fogarty Postdoctoral Fellow, National Institute of Allergy and Infectious Diseases, National Institutes of Health. Advisor: Dr. Helene F. Rosenberg

2001–2005 Assistant Professor, Department of Ecology and Evolutionary Biology, University of Michigan

2005–2009 Associate Professor, Department of Ecology and Evolutionary Biology, University of Michigan

2009–2013 Professor, Department of Ecology and Evolutionary Biology, University of Michigan

2013– Marshall W. Nirenberg Collegiate Professor of Ecology and Evolutionary Biology, University of Michigan

OTHER AFFILIATIONS IN UNIVERSITY OF MICHIGAN

Center for Computational Medicine and Bioinformatics
Center for Statistical Genetics
Michigan Institute for Computational Discovery and Engineering
Center for RNA Biomedicine
NIH Training Program in Genetics
NIH Training Program in Genome Sciences

MAJOR SERVICES AT UNIVERSITY OF MICHIGAN

Member, Henry Russel Award Committee, 2024–

Member, Precision Health Faculty Advisory Committee, 2020–
Member, Natural Sciences Divisional Evaluation Committee, College of Literature, Science, and the Arts, 2019–2022

Associate Chair for Graduate Studies, Department of Ecology and Evolutionary Biology, 2019–2020

Member (5 years) or Chair (3 years), Promotions and Merit Committee, Department of Ecology and Evolutionary Biology

Member (multiple times) or Chair (three times), Faculty Hiring Committees, Department of Ecology and Evolutionary Biology

Other Services: Member (or Chair) of Executive Committee, Prelim Committee, Curriculum Committee, Seminar Committee, Library Committee, Retreat Committee, Nominations Committee, Graduate Affairs Committee, Admissions Committee, and Space and Facilities Committee, Department of Ecology and Evolutionary Biology

TEACHING AT UNIVERSITY OF MICHIGAN

BIO173-Authentic Research Connection: Experimental Evolution of Yeast (3 terms, with Tim James)
BIO305-Genetics (9 terms, with Janine Maddock, Tzvi Tzfira, Andrzej Wierzbicki, or Monica Dus)
EEB410-EEB Capstone Seminars (9 terms, with Jessica Middlemis-Maher, Knute Nadelhoffer, Mark Hunter, Lydia Beaudrot, Tom Duda, or Aimee Classen)
EEB490-Population Genetics (2 terms)
EEB512-Molecular Systematics and Evolution (7 terms; 2 with David Mindell)
EEB512-Molecular and Genomic Evolution (4 terms)
EEB335-Biodiversity Research Seminars (5 terms)
EEB800-Molecular Evolution Journal Club (6 terms)
EEB800-Gradute Seminars (1 term)

TEACHING OUTSIDE UNIVERSITY OF MICHIGAN

Molecular evolution (6 hours), Kunming Institute of Zoology, Kunming, China, July 2004
Molecular evolution (6 hours), Chinese Academy of Sciences, Shanghai, China, December 2010
Molecular evolution (5 hours), Tsinghua University, Beijing, China, December 2010
Molecular evolution (3 hours), Zhejiang University, Hangzhou, China, May 2017
Quantitative and population genetics (8 hours), Shanghai Jiao Tong University, Shanghai, China, May 2019
Quantitative, population, and evolutionary genetics (16 hours per year), Shanghai Jiao Tong University, Shanghai, China, May 2020, May 2021, May 2022

HONORS AND AWARDS

Undergraduate Scholarship, Fudan University, 1989–1992

Multiple travel awards for traveling to national and international conferences, Institute of Molecular Evolutionary Genetics, Pennsylvania State University, 1996–1998

Fogarty Fellowship, Fogarty International Center, National Institutes of Health, 1999–2001

National Academy of Sciences Kavli Fellow, 2004

Robert H. Freeman Faculty Award, College of Literature, Science, and the Arts, University of Michigan, 2005

Collegiate Professorship, College of Literature, Science, and the Arts, University of Michigan, 2013

President, Society for Molecular Biology and Evolution, 2016

Fellow, American Association for the Advancement of Science, 2017

Rackham Distinguished Graduate Mentor Award, University of Michigan, 2023

FUNDING

"Genomic and systemic approaches to evolutionary mechanisms" (R35GM139484), $2,563,000, National Institute of General Medical Sciences, National Institutes of Health, 2/1/2021–1/31/2026. PI

"Equipment supplement: Genomic and systemic approaches to evolutionary mechanisms" (R35GM139484S1), $42,390, National Institute of General Medical Sciences, National Institutes of Health, 2/1/2023–1/31/2024. PI

"Pleiotropy: patterns, mechanisms, and evolutionary consequences" (2R01GM103232), $1,224,000, National Institute of General Medical Sciences, National Institutes of Health, 8/9/2019–7/31/2023. PI (replaced by R35GM139484 in 2021; actual funding $612,000)

"MCubed: Evolution of the chromatin structural organization", $60,000, Office of the Vice President for Research, University of Michigan, 3/13/2019–12/31/2020. Co-PI (PI: Jie Liu; Co-PI: Yongsheng Bai)

"Position effects on gene expression level and noise" (R01GM120093), $1,203,000, National Institute of General Medical Sciences, National Institutes of Health, 9/1/2016–5/31/2020. PI

"A comparative genomics approach to the evolution of marine animals and their genomes", $300,000, Korean Institute of Marine Science & Technology, 9/1/2015–4/30/2019. Subcontract PI

"Deep learning for phylogenetic inference", $80,000, Michigan Institute for Computational Discovery and Engineering (MICDE) Catalyst Grant, 5/1/2018–4/30/2019. PI (Co-PI: Yuanfang Guan)

"Sperm Protamine Proteins: A potential novel carrier of epigenetic memory", $100,000, Innovation Initiative Award, Endowment for the Basic Sciences, University of Michigan Medical School, 9/1/2017–8/31/2018. Co-PI (PI: Sue Hammound)

“Genomic studies of antagonistic pleiotropy” (R01GM103232), $1,160,000, National Institute of General Medical Sciences, National Institutes of Health, 9/1/2013–7/31/2018. PI

"DISSERTATION RESEARCH: The fitness landscape of a yeast tRNA gene" (DEB-1501788), $19,571, National Science Foundation, 4/1/2015–3/31/2017. PI (Co-PI: Chuan Li)

“Yeast as a model for understanding heterosis” (MCB-1329578), $535,000, National Science Foundation, 12/1/2013–11/30/2016. PI

“MCubed: transcriptome evolution”, $60,000, Office of the Vice President for Research, University of Michigan, 4/1/2013–3/31/2015. PI (Co-PIs: Stephen Smith and Alexey Kondrashov).

“Yeast as a model organism for understanding heterosis”, $15,000, Office of the Vice President for Research, University of Michigan, 4/1/2013–3/31/2014. PI.

“Functional genomic approaches to duplicate gene evolution” (R01GM67030), $1,430,000, National Institute of General Medical Sciences, National Institutes of Health, 3/1/2009–11/28/2013. PI.

“Evolution of vertebrate sensory genes” (R01GM80285), $808,640, National Institute of General Medical Sciences, National Institutes of Health, 7/1/2007–12/30/2011. PI.

“RNases for understanding the origin of new gene function” (R01GM67030), $950,000, National Institute of General Medical Sciences, National Institutes of Health, 1/1/2003–12/31/2008. PI.

“Understanding duplicate gene evolution by computational and experimental functional genomics”, $80,000, Center for Computational Medicine and Biology, University of Michigan, 11/1/2006–10/31/2008. PI (Co-PI: Anuj Kumar).

“Evolution of honeybee sex determination genes”, $15,000, Office of the Vice President for Research, University of Michigan, 1/1/2004–12/31/2004. PI.

“Molecular evolutionary mechanisms of origins of new gene functions”, $15,000, Rackham Graduate School, University of Michigan, 1/1/2002–12/31/2003. PI.

RESEARCH INTERESTS

Molecular and genome evolution

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science
Society for Molecular Biology and Evolution

PROFESSIONAL SERVICES

Academic Advisory Committee, Biodiversity Research Center, Academia Sinica, 2023–2025

Selection Committee, International Prize for Biology, 2023

National Center for Biotechnology Information (NCBI) Board of Scientific Counselors, 2014–2019

Selection Committee, *Molecular Biology and Evolution* Best Student Paper Award, 2019

Chair, Awards Committee, Society for Molecular Biology and Evolution, 2018

President-elect (2015), President (2016), and Past President (2017), Society for Molecular Biology and Evolution

Global Organizing Committee, Annual Meeting of the Society for Molecular Biology and Evolution, 2011

Elected Secretary, Society for Molecular Biology and Evolution, 2007–2009

Scientific Committee, Annual Meeting of the Society for Molecular Biology and Evolution, 2008

Bylaws Committee, Society for Molecular Biology and Evolution, 2006

Senior Editor (2012–), *Molecular Biology and Evolution*
Associate Editor (2009–), *PLOS Genetics*
Associate Editor (2009–), *Genome Biology and Evolution*
Advisory Editorial Board member (2012–), *EMBO Reports*
Editorial Board member (2017–), *National Science Review*
Editorial Board member (2013–), *Biology Direct*

Area Editor of Evolutionary Genetics, Genomes, and Evolution of Development (2019–2020), *Oxford Bibliographies in Evolutionary Biology*
Editorial Board member (2009–2020), *Journal of Genetics and Genomics*
Highlights Editor (2011–2018), *Genome Biology and Evolution*
Editorial Board member (2010–2015), *Mammalian Genome*
Associate Editor (2009–2013), *Journal of Systematics and Evolution*
Editorial Board member (2008–2012), *Current Zoology*
Associate Editor (2004–2010), *Gene*
Editorial Board member (2007–2009), *Frontiers of Biology in China*
Editorial Board member (2007–2008), *Journal of Systematics and Evolution*
Associate Editor (2004–2008), *Molecular Biology and Evolution*
Guest Editor (2015, 2018), *Proceedings of the National Academy of Sciences of USA*
Guest Academic Editor (2009, 2010), *PLOS Biology*
Guest Associate Editor (2009), *PLOS Genetics*

Guest Associate Editor (2008, 2009, 2017, 2023), *PLOS Computational Biology*

Ad hoc reviewer for *Acta Biotheoretica*, *Acta Zoologica Sinica*, *American Journal of Human Biology*, *American Journal of Human Genetics*, *American Naturalist*, *Asian Journal of Andrology*, *Biochemistry, Biochimica et Biophysica Acta*, *Bioinformatics*, *Biology Direct*, *Biology Letters*, *BMC Bioinformatics*, *BMC Biology*, *BMC Evolutionary Biology*, *BMC Genomics*, *BMC Molecular Biology*, *BMC Systems Biology*, *Briefings in Bioinformatics*, *Cell*, *Cell Reports*, *Cell Research*, *Cell Systems*, *Chaos*, *Chemical Senses*, *Communications Biology*, *Computational and Structural Biotechnology Journal*, *Current Biology*, *Current Opinion in Genetics and Development*, *Current Zoology*, *EMBO Reports*, *Emerging Infectious Diseases*, *eLife*, *Environmental Microbiology*, *Evolution*, *Evolution Letters*, *Evolutionary Bioinformatics*, *FEBS Journal*, *FEBS Letters*, *Gene*, *Gene Expression Patterns*, *Genetics*, *Genome*, *Genome Biology*, *Genome Biology and Evolution*, *Genome Research*, *Genomics*, *Heredity*, *Human Biology*, *Human Genomics*, *Human Molecular Genetics*, *Human Mutation*, *iScience*, *Journal of Biology*, *Journal of Evolutionary Biology*, *Journal of Experimental Zoology*, *Journal of Genetics and Genomics*, *Journal of Heredity*, *Journal of Integrative Plant Biology*, *Journal of Leukocyte Biology*, *Journal of Molecular Biology, Journal of Molecular Evolution*, *Journal of Neuroscience*, *Journal of Royal Society Interface*, *Journal of Systematics and Evolution*, *Journal of Theoretical Biology*, *Mammalian Genome*, *Mathematical Biosciences*, *Mechanisms of Development*, *Microbial Genomics*, *Molecular Biology and Evolution*, *Molecular Cancer*, *Molecular Diversity*, *Molecular Ecology*, *Molecular Ecology Resources*, *Molecular Genetics and Genomics*, *Molecular Phylogenetics and Evolution*, *Molecular Systems Biology*, *National Science Review, Nature*, *Nature Chemical Biology*, *Nature Communications*, *Nature Ecology & Evolution*, *Nature Genetics*, *Nature Plants*, *Nature Reviews Genetics*, *Nature Structural & Molecular Biology*, *Nucleic Acids Research*, *PLOS Biology*, *PLOS Computational Biology*, *PLOS Genetics*, *PLOS ONE*, *Proceedings of the Indian National Science Academy*, *Proceedings of the National Academy of Sciences of USA*, *Proceedings of the Royal Society of London* (*Series B*)*, RNA*, *Science, Science Advances*, *Science Bulletin*, *Scientific Reports*, *Systematic Biology*, *Trends in Ecology and Evolution*, *Trends in Genetics*, and *Yeast*.

Grant reviewer for US National Science Foundation, UK Research Council (Biotechnology and Biological Sciences), UK Medical Research Council, Poland National Science Center, China National Natural Science Foundation, and Research Foundation Flanders (Belgium).

Regular member, NIH Study Section on Genetic Variation and Evolution, 2007–2012
Ad hoc member, NIH Fellowship Review Panel, 2024
Ad hoc member, NIGMS ESI-MIRA Study Section, 2018, 2023
Ad hoc member, NIGMS MIRA Study Section, 2021
Ad hoc member, NIH Special Emphasis Study Section 2021
Ad hoc member, NIH Study Section on Genetic Variation and Evolution, 2006, 2007

Member, NSF Division of Environmental Biology pre-proposal review panel, 2014, 2017
Member, NSF Division of Environmental Biology Doctoral Dissertation Improvement Grants review panel, 2016

Member, China National Natural Science Foundation microevolution grant review panel, 2013

Evaluator, State Natural Science Award, Chinese government, 2011, 2012
External evaluator, Beijing Institute of Genomics, Chinese Academy of Sciences, 2012
Overseas evaluator, Chinese Academy of Sciences, 2012–

Evaluator for promotions and tenure: Academia Sinica, Arizona State University, Chinese Academy of Sciences, Cornell University, Georgia Institute of Technology, Iowa State University, Johns Hopkins University, Kent State University, Michigan State University, National Health Research Institutes of Taiwan, Okinawa Institute of Science and Technology, Peking University, Temple University, Texas A&M University, University at Buffalo, University of Arizona, University College Dublin, University of California at Los Angles, University of California at Santa Barbara, University of California at San Diego, University of Chicago, University of Illinois at Urbana-Champaign, University of Iowa, University of Missouri, University of Nebraska, University of Southern California, University of Toronto, University of Washington, University of Wisconsin at Maddison, US National Institutes of Health, Virginia Polytechnic Institute and State University, and Wayne State University.

Organizer, Evolutionary Systems Biology Symposium, Annual Meeting of the Society for Molecular Biology and Evolution, Tempe, Arizona, May 2006

Co-organizer, Penn State SMBE Symposium on Molecular and Genomic Evolution, University Park, Pennsylvania, March 2011

Organizer, Evolutionary Systems Biology Symposium, Annual Meeting of the Society for Molecular Biology and Evolution, Kyoto, Japan, July 2011

INVITED SEMINARS (totaling >120)

National Institute of Allergy and Infectious Diseases, National Institutes of Health, March 1998
National Center for Biotechnology Information, National Institutes of Health, March 1998
Laboratory of Molecular Systematics, Smithsonian Institution, September 1999
Institute of Genetics, Fudan University, December 1999
Center for Advanced Research in Biotechnology, University of Maryland, May 2000
Department of Genetics, University of Washington, October 2000
Department of Biology, Texas A&M University, November 2000
Department of Genetics, Rutgers University, November 2000
Department of Anthropology, Rutgers University, November 2000
Department of Ecology and Evolution, SUNY at Stony Brook, November 2000
Department of Biology, University of Michigan, December 2000
Department of Biology and Biochemistry, University of Houston, January 2001
Department of Biological Sciences, University of Iowa, January 2001
Department of Biological Sciences, University of Maryland Baltimore County, February 2001
Department of Biology and Center for Bioinformatics and Computational Biology, University of Maryland at College Park, February 2001
Kunming Institute of Zoology, Chinese Academy of Sciences, April 2001
School of Life Sciences, Zhejiang University, November 2001
Department of Ecology and Evolution, University of Chicago, October 2002

Institute of Molecular Evolutionary Genetics, Pennsylvania State University, November 2002
School of Life Sciences, Peking University, December 2002
Department of Biology, Arizona State University, February 2003
Department of Ecology and Evolution, Fudan University, October 2003
Department of Biology, Western Michigan University, March 2004
Department of Evolution, Ecology, and Organismal Biology, Ohio State University, February 2005
Department of Biology, Emory University, February 2005
School of Life Sciences, Sun Yat-Sen University, June 2005
School of Life Sciences, Xiamen University, June 2005
Bioinformatics Program, University of Michigan, September 2005
Institute of Bioinformatics, Zhejiang University, December 2005
Department of Human Genetics, University of Michigan, January 2006
Saturday Morning Physics Series, University of Michigan, February 2006
Perinatology Research Branch, National Institute of Child Health and Human Development, NIH, August 2006
Graduate University for Advanced Studies, Hayama, Japan, March 2007
National Institute of Genetics, Mishima, Japan, March 2007
Department of Ecology and Evolution, University of Chicago, April 2007
Department of Biochemistry, Biophysics & Molecular Biology, Iowa State University, November 2007
Department of Biology, University of Maryland at College Park, February 2008
Department of Biology, Pennsylvania State University, February 2008
Institute of Molecular Evolutionary Genetics, Pennsylvania State University, February 2008
Center for Complex Biological Systems, University of California at Irvine, March 2008
Department of Ecology and Evolutionary Biology, University of California at Irvine, March 2008
Department of Anthropology and Department of Organismic Biology and Evolution, Harvard University, April 2008
Department of Biology, University of Nebraska, April 2008
Fred Hutchinson Cancer Research Center, April 2008
California Academy of Sciences, August 2008
National Health Research Institutes, Zhunan Town, Taiwan, March 2009 (two seminars)
Biodiversity Research Center, Academia Sinica, Taipei, Taiwan, March 2009
Interdisciplinary Group Seminar, University of Michigan, July 2009
Primate Research Institute, Kyoto University, July 2009
Department of Bioinformatics and Computational Biology, University of Texas M. D. Anderson Cancer Center, December 2009
Institute for Cellular and Molecular Biology, University of Texas at Austin, March 2010
Center for Integrative Genomics and Department of Ecology and Evolution, University of Lausanne, Switzerland, June 2010
Institute of Biochemistry, University of Zurich, June 2010
School of Life Sciences, East China Normal University, August 2010
School of Life Sciences, Zhejiang University, September 2010
College of Life Sciences, Fudan University, December 2010
CAS-MPG Partner Institute for Computational Biology, December 2010

Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, December 2010
Department of Ecology and Evolutionary Biology, University of Michigan, January 2011
Department of Ecology and Evolutionary Biology and Institute of Systems Biology, Yale University, January 2011
Center for Bioinformatics and Computational Biology, University of Iowa, February 2011
Donnelly Centre for Cellular and Biomolecular Research, University of Toronto, March 2011
Center for Computational Medicine and Bioinformatics, University of Michigan, November 2011
Kunming Institute of Zoology, Chinese Academy of Sciences, December 2011
BGI-Shenzhen, December 2011
Department of Genetics, University of Wisconsin–Madison, February 2012
Department of Biology, Wayne State University, April 2012
Buchanan Lecturer, Department of Biological Sciences, Bowling Green State University, April 2012 (a public lecture and a departmental seminar)
Beijing Institute of Genomics, Chinese Academy of Sciences, December 2012
Institute of Botany, Chinese Academy of Sciences, December 2012
School of Life Sciences, Wuhan University, July 2013
Institute of Hydrobiology, Chinese Academy of Sciences, July 2013
School of Life Sciences, Nanjing University, July 2013
School of Life Sciences, Peking University, March 2014 (two seminars)
Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, March 2014
Institute of Molecular Biology, Academia Sinica, March 2014
Department of Life Science, National Taiwan University, March 2014
National Health Research Institutes, Taiwan, March 2014 (two seminars)
Department of Biological Sciences, University of Southern California, November 2014
Department of Biology and Institute for Genetic Medicine, Johns Hopkins University, March 2015
National Center for Biotechnology Information (NCBI), NLM, NIH, April 2015
Division of EcoScience, Ewha Womans University, Seoul, Korea, June 2015
Institute of Biotechnology, National Autonomous University of Mexico, Cuernavaca, Mexico, October 2015 (two seminars)
Bioinformatics Seminar, University of California, Los Angeles, February 2016
Institute for Genomics and Evolutionary Medicine, Temple University, May 2016
Life Sciences Institute, Zhejiang University, July 2016
Department of Molecular and Cellular Biology, University of Arizona, September 2016
Department of Biochemistry and Biophysics, University of Rochester, March 2017
School of Life Sciences, Zhejiang University, May 2017
Sun Yat-sen University School of Medicine, April 2018
Department of Integrated Biosciences, University of Tokyo, July 2018
Department of Biological Sciences, University of Southern Mississippi, October 2018
Quantitative Biology Program, University of California, San Diego, November 2018
Genetics Institute, University of Florida, November 2018
THEOCHEM (The Greater Boston Area Theoretical Chemistry Lecture Series), Massachusetts Institute of Technology, November 2018 (student invited speaker; two seminars)
School of Life Sciences, Nanjing Normal University, May 2019

School of Life Sciences, Nanjing University, May 2019
Marshall W. Nirenberg Collegiate Professorship Inaugural Lecture, College of Literature, Science, and the Arts, University of Michigan, October 2019
Biological Student Alliance, University of Michigan, October 2019
Department of Life Sciences, National Taiwan Normal University, October 2019
Institute of Ecology and Evolutionary Biology, National Taiwan University, November 2019
Biodiversity Research Center, Academia Sinica, November 2019
Department of Life Sciences, National Cheng Kung University, November 2019
Department of Biology, University of Iowa, October 2021
Department of Genetics, University of Wisconsin–Madison, October 2021
Vienna Graduate School of Population Genetics, December 2021 (Virtual)
The Genetic Society of China virtual seminar series "In the light of evolution", Inaugural Lecture, July 2022 (Virtual)
Department of Microbiology, Biochemistry and Molecular Genetics and Public Health Research Institute, Rutgers University Medical School, September 2022 (Virtual)
Division of Genetics, Brigham & Women's Hospital and Harvard Medical School, April 2023
Westlake Master Forum, Westlake University, June 2023
School of Basic Medical Sciences, Zhejiang University, June 2023
Biodiversity Research Center, Academia Sinica, November 2023
Bio-X Institutes, Shanghai Jiao Tong University, November 2023
Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences, November 2023
Institute of Zoology, Chinese Academy of Sciences, November 2023
Graduate University for Advanced Studies, Hayama, Japan, December 2023
Research Center for Group Dynamics and Evolution and Human Adaptation Program, University of Michigan, March 2024
Kunming Institute of Zoology, Chinese Academy of Sciences, June 2024
Frontiers in Genetics & Genomics, University of California, Los Angeles, March 2025

ORAL PRESENTATIONS AT CONFERENCES (totaling >60)

"Color vision of ancestral organisms of higher primates", The Fourth Annual Meeting of the Society for Molecular Biology and Evolution, Tucson, Arizona, June 1996

"Detection of convergent and parallel evolution at the amino acid sequence level", Annual Meeting of American Society of Naturalists, Society of Systematic Biology, and Society for the Study of Evolution, Boulder, Colorado, June 1997

"Positive Darwinian selection after gene duplication in primate ribonuclease genes", The Sixth Annual Meeting of the Society for Molecular Biology and Evolution, Vancouver, Canada, June 1998

"Independent adaptive expansions of the ribonuclease gene family in rodents", The Fifth International Meeting on Ribonucleases, Warrenton, Virginia, May 1999

"Protein-length distributions for the three domains of life", Symposium on Genome Diversity and Evolution, and the Annual Meeting of the American Genetic Association, State College, Pennsylvania, June 1999

"Evolution of the rodent eosinophil-associated ribonuclease gene family by rapid gene sorting and positive selection", Joint Annual Meeting of the Society for Molecular Biology and Evolution and American Genetic Association, New Haven, Connecticut, June 2000

"Diversifying selection on the tumor-growth promoter angiogenin in primate evolution", Annual Meeting of American Society of Naturalists, Society of Systematic Biology, and Society for the Study of Evolution, Knoxville, Tennessee, June 2001

"Adaptive evolution of a duplicated pancreatic ribonuclease gene in a leaf-eating monkey", Symposium on Evolutionary Genomics, Atami, Japan, November 2001 INVITED SPEAKER

"Complementary advantageous substitutions in the evolution of an antiviral RNase of higher primates", Annual Meeting of the Society for Molecular Biology and Evolution, Sorrento, Italy, June 2002

"Adaptive evolution of a duplicated pancreatic ribonuclease gene in a leaf-eating monkey", The Sixth International Meeting on Ribonucleases, Bath, UK, June 2002 INVITED SPEAKER

"Accelerated protein evolution and origins of human-specific features", Symposium on Human Origins and Disease, Cold Spring Harbor, New York, October 2002

"Accelerated protein evolution and origins of human-specific features: FOXP2 as an example", Symposium on the Molecular Basis of Evolution, Tokyo, Japan, December 2002 INVITED SPEAKER

"Gene duplication and adaptive evolution", Symposium on Advances in Modern Zoology, Beijing, China, December 2002 INVITED SPEAKER

"Evolutionary deterioration of the vomeronasal pheromone transduction pathway in catarrhine primates", Annual Meeting of the Society for Molecular Biology and Evolution, Newport Beach, California, June 2003

"Positive selection on protein-length in the evolution of a primate sperm ion channel", Xiangshan Symposium on Evolutionary Biology, Beijing, China, October 2003 INVITED SPEAKER

"Testing the chromosomal speciation hypothesis for humans and chimpanzees", Gordon Conference on "Structural, Functional and Evolutionary Genomics", Ventura, California, February 2004 INVITED SPEAKER

"Parallel gene duplication and adaptive evolution of a digestive enzyme in leaf-eating monkeys", Joint Annual Meetings of the Society for Molecular Biology and Evolution and American Genetic Association, University Park, Pennsylvania, June 2004 INVITED SPEAKER

"Evolution of duplicate genes", 10th SCBA International Symposium, Beijing, China, July 2004 INVITED SPEAKER

"Evolutionary genetics of human speech/language emergence", National Academy of Sciences Frontiers of Science Symposia, Beckman Center, California, November 2004 INVITED SPEAKER

"Evolution of the vertebrate RNase A superfamily: glimpses from genome sequences", The Seventh International Meeting on Ribonucleases, Stara Lesna, Slovak Republic, June 2005 INVITED SPEAKER (presentation read by Dr. Jaap Beintema)

"Why do hubs tend to be essential in protein networks?", Annual Meeting of the Society for Molecular Biology and Evolution, Tempe, Arizona, May 2006 INVITED SPEAKER

"Evolution of the complementary sex determination gene of honey bees", International Symposium on Genomics and Evolution, Guangzhou, China, January 2007 INVITED SPEAKER

"Evolution of vertebrate taste receptor genes", Annual Meeting of the Association for Chemoreception Sciences, Sarasota, Florida, April 2007 INVITED SPEAKER

"Accelerated protein evolution and positive selection in human and chimp lineages", Wellcome Trust Conference on Evolution of Brain, Behaviour and Intelligence, Hinxton, Cambridge, UK, September 2007 INVITED SPEAKER

"Molecular dissection of primate evolution and human origins", Wenner-Gren Foundations International Symposium on "Human Evolution", Stockholm, Sweden, November 2008 INVITED SPEAKER

"Contrasting genetic paths to morphological and physiological evolution", Annual Meeting of the Society for Molecular Biology and Evolution, Iowa City, Iowa, June 2009

"Evolution of vertebrate chemosensory genes", The 3rd International Symposium of the Biodiversity and Evolution Global COE Project, Kyoto, July 2009 INVITED SPEAKER

"Gene expression noise and evolution", Darwin-China 200 Conference, Beijing, October 2009 INVITED SPEAKER

"The genetics basis of evolution", Darwin 2009 Symposium, Stony Brook University, Stony Brook, November 2009 INVITED SPEAKER

"Gene expression noise and evolution", Symposium on "Biological complexity and hierarchy: From molecules to cellular networks", Rice University, Houston, December 2009 INVITED SPEAKER

"Measuring the evolutionary rate of protein-protein interaction", Penn State SMBE Symposium on Molecular and Genomic Evolution, Pennsylvania State University, University Park, March 2011 INVITED SPEAKER

"Gene expression noise and evolution", Summer Symposium on Transcriptional Dynamics, Evolution, and Systems Biology, Michigan State University, East Lansing, July 2011 INVITED SPEAKER

"Gene expression noise and evolution", Annual Meeting of the Society for Molecular Biology and Evolution, Kyoto, Japan, July 2011 INVITED SPEAKER

"Evolution of vertebrate *T1r* taste receptor genes", Annual Meeting of the Japanese Society for Evolutionary Studiers, Kyoto, Japan, July 2011 INVITED SPEAKER

"Measuring the evolutionary rate of protein-protein interaction", Young Researchers Conference on Evolutionary Genomics, Tokyo, Japan, August 2011 INVITED SPEAKER

"Evolution of orthologs and paralogs: function, expression, and fitness effect", Annual Meeting of the Society for Molecular Biology and Evolution, Dublin, Ireland, June 2012 INVITED SPEAKER

"Robust developmental cell lineages underlie canalization", International Symposium on "Genetics, Development, and Evolution", Kunming, China, August 2012 INVITED SPEAKER

"The genomic landscape of antagonistic pleiotropy in yeast", EMBO Conference on "Experimental Approaches to Evolution and Ecology", Heidelberg, Germany, October 2012 INVITED SPEAKER

"The genetic architecture of complex traits: A reverse genetic perspective", Symposium on "Multigenic Interactions in Microevolution", Tengchong, China, January 2013 KEYNOTE SPEAKER

"Development cell lineages are robust to cell deaths", Symposium on "Mathematical Tools for Evolutionary Systems Biology", Banff International Research Station, Canada, May 2013 INVITED SPEAKER

"Differential mRNA folding optimizes the tradeoff between translational speed and accuracy", Annual Meeting of the Society for Molecular Biology and Evolution, Chicago, July 2013

"Differential mRNA folding optimizes the tradeoff between translational speed and accuracy", International Symposium of Evolutionary Genetics for Young Investigators, Guangzhou, China, August 2013 INVITED SPEAKER

"Human coding RNA editing is generally nonadaptive", Symposium on "Molecular Evolution in All Fields of Biology", Mishima, Japan, November 2013 INVITED SPEAKER

“Yeast intra- and inter-specific variations of gene expression levels are largely neutral”, Annual Meeting of the Society for Molecular Biology and Evolution, Puerto Rico, June 2014 INVITED SPEAKER

“Yeast intra- and inter-specific variations of gene expression levels are largely neutral”, Cold Spring Harbor Asia Meeting on Evolutionary Genetics and Genomics, Suzhou, China, October 2014 INVITED SPEAKER

"Nascent RNA folding mitigates transcription-associated mutagenesis", SMBE Satellite Meeting on Mutation, Repair, and Evolution, Bloomington, May 2015 INVITED SPEAKER

“Evolution of vertebrate taste senses inferred from comparative genomics”, International Symposium on Marine Genomics, Seoul, Korea, June 2015 KEYNOTE SPEAKER

“Human coding RNA editing is generally nonadaptive”, Annual Meeting of the Society for Molecular Biology and Evolution, Vienna, Austria, July 2015

"Diversity in post-transcriptional modifications: adaptive or not?" SMBE Satellite Meeting on RNA Modification and Its Implication on Adaptation and Evolution, Valencia, Spain, May 2016 KEYNOTE SPEAKER

"Testing the neutral hypothesis of phenotypic evolution", Annual Meeting of the Society for Molecular Biology and Evolution, Gold Coast, Australia, July 2016 PLENARY SPEAKER (NEI LECTURER)

"Testing the neutral hypothesis of phenotypic evolution" Forum for Early-Career Evolutionary Geneticists, Kunming, China, July 2016 KEYNOTE SPEAKER

"Diversity in post-transcriptional modifications: adaptive or not?" Genomics Frontiers Symposium, Shenyang, China, July 2016 KEYNOTE SPEAKER

"Diversity in post-transcriptional modifications: adaptive or not?" Symposium on Microevolutionary Processes, Guangzhou, China, December 2016 KEYNOTE SPEAKER

"Evolutionary adaptations to new environments generally reverse plastic phenotypic changes" Forum for Early-Career Evolutionary Geneticists, Chengdu, China, May 2017 KEYNOTE SPEAKER

"The fitness landscapes of a tRNA gene in multiple environments: G×E is pervasive yet simple", Annual Meeting of the Society for Molecular Biology and Evolution, Austin, July 2017

"Evolutionary adaptations to new environments generally reverse plastic phenotypic changes", Molecular Evolution & Medicine Symposium, Philadelphia, September 2017 INVITED SPEAKER

"Multi-environment fitness landscapes of a yeast tRNA gene", The 1st AsiaEvo Conference, Shenzhen, China, April 2018 INVITED SPEAKER

"Diversity in posttranscriptional modification: Adaptations or cellular errors?", Annual Meeting of the Society for Molecular Biology and Evolution, Yokohama, Japan, July 2018 INVITED SPEAKER

"Diversity in post-transcriptional modifications: the error hypothesis", Gordon Research Conference on RNA editing, Ciocco, Italy, March 2019 INVITED SPEAKER

"Antagonistic pleiotropy conceals molecular adaptations in changing environments", Interdisciplinary Symposium in Life Sciences, Pan'an, China, May 2019 INVITED SPEAKER

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MENTORING

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Peng Shi (2004-2006, currently Professor at Kunming Institute of Zoology, Chinese Academy of Sciences, China)
Zhihua Zhang (2006-2009, currently Professor at Beijing Institute of Genomics, Chinese Academy of Sciences, China)
Nathaniel Pearson (2007-2009, currently Founder, Root Deep Insight, Inc.)
Ying Li (2010-2012, currently Professor at Foshan University, China)
Huabin Zhao (2009-2012, currently Professor at Wuhan University, China)
Chungoo Park (2010-2012, currently Professor at Chonnam National University, Korea)
Xiaoshu Chen (2011-2016, currently Professor at Sun Yan-sen University, China)
Jian-Rong Yang (2011-2016, currently Professor at Sun Yan-sen University, China)
Calum Maclean (2008-2016, currently Research Scientist at Ranomics Inc., Canada)
Nagarjun Vijay (2016-2017, currently Assistant Professor at Indian Institute of Science Education and Research [IISER Bhopal], India)
Chuan Xu (2017-2020, currently Principal Investigator at Shanghai Jiao Tong University, China)

Zhengting Zou (2017-2020, currently Professor at Institute of Zoology, Chinese Academy of Sciences, China)
Haoxuan Liu (2017-2022, currently Professor at Zhejiang University, China)
Piaopiao Chen (2017-2024; currently Professor at Zhejiang University, China)

Current postdoctoral fellows:
Anjali Mahilkar (2021-)
Yang Li (2023-)

Former visiting scholars/students:
Seong Hwan Park (2007-2008, currently Professor at Korea University, Korea)
Jacob Tennessen (2008-2009, currently Research Associate at Harvard University)
Ying Li (2009-2010, currently Professor at Foshan University, China)
Huailiang Xu (2009-2010, currently Professor at Sichuan Agricultural University, China)
Jian-Rong Yang (2009-2010, currently Professor at Sun Yat-sen University, China)
Diyan Li (2012-2013, currently Professor at Chengdu University, China)
Guixia Xu (2012-2013, currently Professor at Institute of Botany, Chinese Academy of Sciences, China)
Soochin Cho (2015-2016, currently Associate Professor of Biology at Creighton University)
Zhen Liu (2016-2017, currently Professor at Kunming Institute of Zoology, Chinese Academy of Sciences, China)
Guiliang Tang (2017-2018, currently Professor at Michigan Technological University)
Siliang Song (2018-2019, currently PhD student at University of Michigan)
Minhan Yi (2017-2019, currently Associate Professor at Central South University, China)
Joong-Ki Park (2019, currently Professor at Ewha Womans University, Korea)
Erping Long (2018-2020, currently Assistant Professor at Beijing Union Medical College and Chinese Academy of Medical Sciences)
Zichen Hu (2023-2024, currently graduate student at University of Pennsylvania)

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Ruoxi Wang (2024-)
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Current PhD students:
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PhD thesis committees:
Soochin Cho (PhD, 2003, Advisor: Ron Ellis)
Joshua Rest (PhD, 2004, Advisor: David Mindell)
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