

Hao Ge: Curriculum Vitae

Beijing International Center for Mathematical Research
and Biomedical Pioneering Innovation Center
Peking University, Beijing, China, 100871

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RESEARCH INTERESTS

Stochastic mathematical physics/biophysics, biomathematics and biostatistics

- Mathematical theory driven by applications from physics, chemistry or biology
 - Stochastic theory of nonequilibrium thermodynamics/statistical mechanics
 - Stochastic dynamics in single-molecule and single-cell biology;
- Applications of stochastic mathematics and statistics to solve scientific problems in chemistry or biology
 - Stochastic modeling in systems biology and biophysical chemistry;
 - Statistical machine learning of single-cell data.

EDUCATION

- Peking University**, Beijing, China. Sep 2004–Jul 2008
Ph.D. in Probability and Statistics.
Thesis: “Applications of Stochastic Processes to Nonequilibrium
Statistical Physics and Systems Biology”.
Advisor: Prof. Min Qian.
- Peking University**. Sep 2000–Jul 2004
B.S. in Applied Mathematics.

PROFESSIONAL APPOINTMENTS

- Beijing International Center for Mathematical Research (BICMR)**, Peking University.
Professor (tenured). Aug 2022–present
- Biomedical Pioneering Innovation Center (BIOPIC)**, Peking University.
Principle Investigator. Oct 2011–present
- Beijing International Center for Mathematical Research (BICMR)**, Peking University.
Associate Professor (tenured). Feb 2018–Jul 2022
- Beijing International Center for Mathematical Research (BICMR)**, Peking University.
Associate Professor (tenure-track). Oct 2011–Jan 2018
- School of Mathematical Sciences**, Fudan University, Shanghai.
Associate Professor. Jan 2010–Sep 2011
Lecturer. Jul 2008–Dec 2009
- Department of Chemistry and Chemical Biology**, Harvard University, Cambridge, MA.
Visiting Scholar (Mentor: Prof. Xiaoliang Sunney Xie). Sep 2010–Aug 2011

ACADEMIC AND TEACHING HONORS AND AWARDS

- The National Science Fund for Distinguished Young Scholars**, National Natural Science Foundation of China. 2022
- Second Prize of Teaching Achievements** (Zhang, F.X.; Ren, Y.X.; Chen, D.Y.; Jiang, D.Q. and Ge, H.), Peking University, China. 2021

Excellent Textbook, Peking University, China.	2020
Selected Papers in Beijing, Beijing Association for Science and Technology, China.	2019
Best Paper Award, Science China Mathematics, China.	2018
NG Teng Fong/ Sino Scholarship for Outstanding Youth, Peking University, China.	2017
Young Scholar of Chang Jiang Scholars Program, Ministry of Education, China.	2016
Outstanding Youth Foundation, National Natural Science Foundation of China.	2016
National Excellent Doctoral Dissertations Award, Ministry of Education, China.	2010
Ninth "Zhong Jiaqing" Mathematical Award, Chinese Mathematical Society.	2009

PUBLICATIONS (key publications in [blue](#))

Monograph

[Qian, H. and Ge, H.: Stochastic Chemical Reaction Systems in Biology. in Lecture Notes on Mathematical Modeling in the Life Sciences \(LMML\) series. Springer, 2021](#)

Textbook

[Ge, H. and Qian, H. Mathematical Kinetic Models: With Applications in Biophysics and Biochemistry \(in Chinese\). Beijing: Peking University Press, 2017.](#)

Translated works(Public science)

[Ge, Yunbao: From Geocentric to Heliocentric: how discoveries are made. Springer: Singapore \(2021\) \(Translated by Liu, Z.C., Xu, Q. and Ge, H.\)](#)

Book chapter

Ge, H. Stochastic-process approach to nonequilibrium thermodynamics and biological signal transduction. In *Frontiers in Computational and Systems Biology*, eds. J.-F. Feng, W.-J. Fu and F.-Z. Sun, pp. 61–82, Springer-Verlag, London 2009.

Research papers (total citations > 2300 as of Sept 2022, according to Google Scholar)

Preprint:

1. Das, B. And **Ge, H.***: A mechanistic model for the asymmetric torque-speed relationships of a bacterial flagellar motor. arXiv:2109.01813 (2022+)
1. Guo, X.L., Tang, T., Duan, M.X., Zhang, L.# and **Ge, H.#**: The nonequilibrium mechanism of noise-enhanced drug synergy in HIV latency reactivation. *iScience* 25, 104358 (2022) (#. co-corresponding authors)
2. Wang, R., Li, J.Y., Zhou, X., Mao, Y.N., ..., **Ge, H.**, Fu, W.* and Tang, F.C.*: Single-cell genomic and transcriptomic landscapes of primary and metastatic colorectal cancer tumors. *Genome Medicine* 14:93 (2022)
3. [Ge, H., Jia, C. and Jin, X.: Martingale structure for general thermodynamic functionals of diffusion processes under second-order averaging. *J. Stat. Phys.* 184:17 \(2021\)](#)
4. [Peng, Y.L., Qian, H., Beard, D. and Ge, H.*: Universal relation between thermodynamic driving force and one-way fluxes in a nonequilibrium chemical reaction with complex mechanism. *Phys. Rev. Res.* 2, 033089 \(2020\)](#)
5. Li, J.W., **Ge, H.***, and Zhang, Y.X.: Fluctuating-rate model with multiple gene states. *J. Math. Biol.* 81, 1099–1141 (2020)

6. Deng, M.X., Wang, Y., Zhang, L., Yang, Y., Huang, S.S., Wang, J.G., **Ge, H.**, Ishibashi, T. and Yan, Y.: Single cell transcriptomic landscapes of pattern formation, proliferation and growth in *Drosophila* wing imaginal discs. *Development* 146: dev179754 (2019)
7. Zhang, Y.L., Liang, K.X., Liu, M.L., Li, Y. **Ge, H.** # and Zhao, H.Y. #: SCRIBE: a new approach to dropout imputation and batch effects correction for single-cell RNA-seq data. *MLCB2019* (2019) (#: co-corresponding authors)
8. [You, Z.Y., Li, L.Y., Lu, J.F. # and Ge, H. #: Integrated tempering enhanced sampling method as the infinite switching limit of simulated tempering. *J. Chem. Phys.* 149, 084114 \(2018\) \(#: co-corresponding authors\)](#)
9. Bai, S.N., **Ge, H.** and Qian, H.: Structure for energy cycle: a unique status of the second law of thermodynamics for living systems. *Sci China Life Sci* 61(10), 1266-1273 (2018)
10. [Yang, S.X., and Ge, H.*: Decomposition of the entropy production rate and nonequilibrium thermodynamics of switching diffusion processes. *Phys. Rev. E* 98, 012418 \(2018\)](#)
11. Liu, Y.W., Fan, X.Y., Wang, R., Lu, X.Y., Dang, Y.L., Wang, H.Y., Lin, H.Y., Zhu, C., **Ge, H.**, Cross, J.C. and Wang, H.M.: Single-cell RNA-seq reveals the diversity of trophoblast subtypes and patterns of differentiation in the human placenta. *Cell Research* 28:819-832 (2018)
12. Gao, S., Yan, L.Y., Wang, R., ..., **Ge, H.**#, Qiao, J. # and Tang, F.C. #. Tracing the temporal-spatial transcriptome landscapes of the human fetal digestive tract using single-cell RNA-sequencing. *Nat. Cell Biol.* 20, 721-734 (2018) (#: co-corresponding authors)
13. [Ge, H., Wu, P.P., Qian, H. and Xie, X.S.: Relatively slow stochastic gene-state switching in the presence of positive feedback significantly broadens the region of bimodality through stabilizing the uninduced phenotypic state. *Plos Comput. Biol.* 14\(3\): e1006051 \(2018\)](#)
14. Jin, X. and **Ge, H.** *: Nonequilibrium steady state of biochemical cycle kinetics under non-isothermal conditions. *New J. Phys.* 20: 043030 (2018)
15. [Ge, H., Jiang, D.Q. and Jia, C. Cycle symmetry, limit theorems, and fluctuation theorems for diffusion processes on the circle. *Stoc. Proc. Appl.* 127: 1897-1925 \(2017\)](#)
16. [Ge, H. and Qian, H. Mathematical formalism of nonequilibrium thermodynamics for nonlinear chemical reaction systems with general rate law. *J. Stat. Phys.* 166, 190-209 \(2017\).](#)
17. Ai, G.K., Liu, P.F., and **Ge, H.** *: Torque-coupled thermodynamic model for FoF1-ATPase. *Phys. Rev. E* 95, 052413 (2017)
18. Yang, L., Ma, Z.C., Cao, C., Zhang, Y.H., Wu, X.L., Lee, R., Hu, B.Q., Wen, L., **Ge, H.**, Huang, Y.Y., Lao, K.Q., Tang, F.C: MR-seq: measuring a single cell's transcriptome repeatedly by RNA-seq. *Science Bulletin* 62: 391-398 (2017)
19. Xu, B.X., **Ge, H.** and Zhang, Z.H.: An efficient and assumption-free method to approximate protein level distribution in the two-states gene expression model. *J. Theor. Biol.* 433, 1-7 (2017)
20. Guo, Y.Y., You, Z.Y., **Ge, H.***: Robustness and relative stability of multiple attractors in a stochastic Boolean network (in Chinese). *Sci Sin Math* 47, 1831-1852 (2017)
21. Dai, H.Q., Wang, B.A., Yang, L., Chen, J.J., Zhu, G.C, Sun, M.L., **Ge, H.**, Wang, R., Chapman, D.L., Tang, F.C., Sun, X. and Xu, G.L. TET-mediated DNA demethylation controls gastrulation by regulating Lefty-Nodal signaling. *Nature* 538, 528-532 (2016).
22. [Ge, H. and Qian, H. Mesoscopic kinetic basis of macroscopic chemical thermodynamics: A mathematical theory. *Phys. Rev. E* 94, 052150 \(2016\).](#)
23. **Ge, H.** and Qian, H. Nonequilibrium thermodynamic formalism of nonlinear chemical reaction systems with Waage-Guldberg's law of mass action. *Chem. Phys.* 472, 241-248 (2016).

24. [Zhao, Z.Q., Xie, X.S. # and Ge, H. # Nonequilibrium relaxation of conformational dynamics facilitates catalytic reaction in an elastic network model of T7 DNA polymerase. *J. Phys. Chem. B* 120, 2869–2877 \(2016\). \(#: co-corresponding authors\)](#)
25. Pu, Y.Y., Zhao, Z.L., Li, Y.X., Zou, J., Ma, Q., Zhao, Y.N., Ke, Y.H., Zhu, Y., Chen, H.Y., Baker, M., Ge, H., Sun, Y.J., Xie, X.S. and Bai, F. Enhanced efflux activity facilitates drug tolerance in dormant bacterial cells. *Mol. Cell* 62, 284–294 (2016).
26. [Chen, Y., Ge, H., Xiong, J. and Xu, L.H. The large deviation principle and steady-state fluctuation theorem for the entropy production rate of a stochastic process in magnetic fields. *J. Math. Phys.* 57, 073302 \(2016\).](#)
27. [Ge, H. Mathematical laws of randomness \(in Voices: Expanding the Biology Toolkit\). *Cell* 163, 1306 \(2015\).](#)
28. [Chen, H.Y., Shiroguchi, K., Ge, H. # and Xie, X.S. # Genome-wide study of mRNA degradation and transcript elongation in E.coli. *Mol. Syst. Biol.* 11, 781 \(2015\). \(#: co-corresponding authors\)](#)
29. Ge, H. Macroscopic fluxes and local reciprocal relation in second-order stochastic processes far from equilibrium. *J. Stat. Mech.* 1, P01005 (2015).
30. [Ge, H., Qian, H. and Xie, X.S. Stochastic phenotype transition of a single cell in an intermediate region of gene state switching. *Phys. Rev. Lett.* 114, 078101 \(2015\).](#)
31. Wen, L., Li, J., Guo, H., Liu, X., Zheng, S., Zhang, D., Zhu, W., Qu, J., Guo, L., Du, D., Jin, X., Zhang, Y., Gao, Y., Shen, J., Ge, H., Tang, F., Huang, Y., Peng, J.: Genome-scale detection of hypermethylated CpG islands in circulating cell free DNA of hepatocellular carcinoma patients. *Cell Res.* 25, 1250-1264 (2015)
32. Gu, C., Zhang, J., Yang, Y.I., Chen, X., Ge, H., Sun, Y., Su, X., Yang, L., Xie, X.S. and Gao, Y.Q.: DNA Structural Correlation in Short and Long Ranges. *J. Phys. Chem. B* 119, 13980-13990 (2015)
33. Ge, H. 非平衡统计物理的随机理论. *数学进展* 43, 161–174 (2014).
34. Ouyang, X.H., Huang, X., Jin, X., Chen, Z., Yang, P.Y., Ge, H., Li, S.G. and Deng, X.W. Coordinated photomorphogenic UV-B signaling network captured by mathematical modeling. *Proc. Nat. Acad. Sci.* 111, 11539–11544 (2014).
35. [Chong, S.S., Chen, C.Y., Ge, H. and Xie, X.S. Mechanism of transcriptional bursting in bacteria. *Cell* 158, 314–326 \(2014\).](#)
36. [Ge, H. Time reversibility and nonequilibrium thermodynamics of second-order stochastic processes. *Phys. Rev. E* 89, 022127 \(2014\).](#)
37. [Kim, S., Broströmer, E., Xing, D., Jin, J.S., Chong, S.S., Ge, H., Wang, S.Y., Gu, C., Yang, L., Gao, Y.Q., Su, X.D., Sun, Y.J. and Xie, X.S. Probing allostery through DNA. *Science* 339, 816–819 \(2013\).](#)
38. Ge, H. and Qian, H. Dissipation, generalized free energy, and a self-consistent nonequilibrium thermodynamics of chemically driven open systems. *Phys. Rev. E* 87, 062125 (2013).
39. [Xu, X.L. †, Ge, H. †, Gu, C., Gao, Y. Q., Wang, S.Y., Thio, B., Hynes, J., Xie, X.S. and Cao, J.S. Modeling spatial correlation of DNA deformation: DNA allostery in protein binding. *J. Phys. Chem. B* 117, 13378–13387 \(2013\). \(†: co-first authors\)](#)
40. [Ge, H., Qian, M. and Qian, H. Stochastic theory of nonequilibrium steady states. Part II: Applications in chemical biophysics. *Phys. Rep.* 510, 87–118 \(2012\).](#)
41. [Ge, H., Pressé, S., Ghosh, K. and Dill, K. Markov processes follow from the principle of maximum caliber. *J. Chem. Phys.* 136, 064108 \(2012\).](#)

[\(Research highlighted\)](#)

42. [Ge, H. Multivariable fluctuation theorems in the steady-state cycle kinetics of single enzyme with competing substrates. *J. Phys. A: Math. Theor.* 45, 215002 \(2012\).](#)
[\(Research highlighted\)](#)
43. [Ge, H. and Qian, H. Landscapes of nongradient dynamics without detailed balance: stable limit cycles and multiple attractors. *Chaos* 22, 023140 \(2012\).](#)
44. Ge, H. and Qian, H. Analytical mechanics in stochastic dynamics: most probable path, large-deviation rate function and Hamilton–Jacobi equation. *Int. J. Mod. Phys. B* 26, 1230012 (2012).
45. Qian, H. and Ge, H. Mesoscopic biochemical basis of isogenetic inheritance and canalization: Stochasticity, nonlinearity, and emergent landscape. *Mol. Cell. Biomech.* 9, 1–16 (2012).
46. Zhang, Y.X., Ge, H. and Qian, H. One-dimensional birth-death process and Delbruck–Gillespie theory of mesoscopic nonlinear chemical reactions. *Stud. Appl. Math.* 129, 328–345 (2012).
47. Ge, H. and Qian, H. Nonequilibrium phase transition in a mesoscopic biochemical system: From stochastic to nonlinear dynamics and beyond. *J. Roy. Soc. Interface* 8, 107–116 (2011).
48. [Ge, H. and Qian, H. The physical origins of entropy production, free energy dissipation and their mathematical representations. *Phys. Rev. E* 81, 051133 \(2010\).](#)
49. Zhou, D., Wu, B. and Ge, H. Evolutionary stability and quasi-stationary strategy in stochastic evolutionary game dynamics. *J. Theor. Biol.* 264, 874–881 (2010).
50. Ge, H. and Qian, M. Boolean network approach to negative feedback loops of the p53 pathways: Synchronized dynamics and stochastic limit cycles. *J. Comput. Biol.* 16, 119–132 (2009).
51. Ge, H. and Qian, M. Theoretical analysis of the relationship between positive/negative cooperativity and enzyme activation/inhibition. *Interdiscip. Sci. Comput. Life Sci.* 1, 204–213 (2009).
52. [Ge, H. Extended forms of the second law for general time-dependent stochastic processes. *Phys. Rev. E* 80, 021137 \(2009\).](#)
53. [Ge, H. and Qian, H. Thermodynamic limit of a nonequilibrium steady state: Maxwell-type construction for a bistable biochemical system. *Phys. Rev. Lett.* 103, 148103 \(2009\).](#)
54. Ge, H., Qian, H. and Qian, M. Synchronized dynamics and nonequilibrium steady states in a yeast cell-cycle network. *Math. Biosci.* 211, 132–152 (2008).
55. [Ge, H. Waiting cycle times and generalized Haldane equality in the steady-state cycle kinetics of single enzymes. *J. Phys. Chem. B* 112, 61–70 \(2008\).](#)
56. [Ge, H. and Jiang, D.Q. Generalized Jarzynski’s equality of multidimensional inhomogeneous diffusion processes. *J. Stat. Phys.* 131, 675–689 \(2008\).](#)
57. Ge, H. and Qian, M. Steady-state cycle kinetics of single enzymes: competing substrates and multi-conformations. *J. Theor. Comput. Chem.* 7 1001–1027 (2008).
58. Ge, H. and Qian, M. Sensitivity amplification in the phosphorylation-dephosphorylation cycle: nonequilibrium steady states, chemical master equation and temporal cooperativity. *J. Chem. Phys.* 129, 015104 (2008).
59. Ge, H. and Qian, M. Reversibility and potentiality of exclusion processes on countable discrete groups. *Appl. Math. Lett.* 20, 1110–1114 (2007).
60. [Ge, H. and Qian, M. Generalized Jarzynski’s equality in inhomogeneous Markov chains. *J. Math. Phys.* 48, 053302 \(2007\).](#)
61. Ge, H. and Jiang, D.Q. Transient fluctuation theorem of sample entropy production for general stochastic processes. *J. Phys. A* 40, F713–F723 (2007).

62. Ge, H., Jiang, D.Q. and Qian, M. A simple discrete model of Brownian motors: time-periodic Markov chains. *J. Stat. Phys.* 123, 831–859 (2006).
63. Ge, H., Jiang, D.Q. and Qian, M. Reversibility and entropy production of inhomogeneous Markov chains. *J. Appl. Prob.* 43, 1028–1043 (2006).

TEACHING

<i>High-dimensional Probability</i> , Peking University.	Fall 2022
<i>Honors Course in Probability</i> , Peking University.	Spring 2016-2019, 2022
<i>Mathematical Biophysics</i> , Peking University.	Spring 2012-2014, Fall 2016, 2018, 2021
<i>Probability and Statistics</i> , Peking University.	Fall 2015, Spring 2020
<i>Mathematical Models and Methods</i> , Peking University	Fall 2019-2020
<i>Stochastic Processes and Statistical Mechanics</i> , Peking University.	Spring 2015
<i>Mathematical Biology</i> , Fudan University.	Spring 2010
<i>Tutorial in Mathematical Analysis</i> , Fudan University.	Fall 2008–2009, Spring 2009

CONFERENCE AND SEMINAR PRESENTATIONS

Annual Meeting of CSIAM, Hefei	Oct 2021
Xiangshan Research Conference on Quantitative Synthetic Biology, Beijing	Sep 2021
2 nd Conference on Mathematical Life Science, Wuhan University	Aug 2021
6 th National Conference on Statistical Physics and Complex Systems, Jilin University	Jul 2021
SMB2021, Online	Jun 2021
Annual Meeting of Computational Systems Biology, Hainan University	Sep 2020
Bernoulli-IMS One World Symposium, Online	Aug 2020
Mini-Symposium on Mathematical Modeling and Scientific Computing in Life Sciences, 9 th International Congress on Industrial and Applied Mathematics, Valencia, Spain	Aug 2019
Stochastic Processes and Their Applications, Northwestern University, Chicago, USA	Dec 2019
1 st Conference on Mathematical Life Science, Sun Yat-sen University	Dec 2018
SIAM Conference on Life Science, Minneapolis, Minnesota, USA	Aug 2018
AIMS2018, National Taipei University, Taipei	July 2018
A3 Joint Workshop on Mathematical and Life Sciences, Hiroshima University Hiroshima, Japan	May 2018
Probability Seminar, Department of Mathematics, NYU Shanghai	Mar 2018
Probability Seminar, Department of Statistics, Chinese University of Hong Kong	Jan 2018
Institute of Industrial Science, Tokyo University, Japan	Nov 2017
Department of Applied Physics, Tokyo University, Japan	Nov 2017
International Conference on Systems Biology, Virginia Tech, VA.	Aug 2017
Department of Biochemistry and Biophysics Seminar, University of California, San Francisco, CA.	Jan 2017
Applied Mathematics and Probability Seminar, Department of Mathematics,	Jan 2017

University of California, Berkeley, CA.	
10 th ICSA International Conference, Shanghai Jiaotong University, China.	Dec 2016
Department of Computational Biology Seminar, KTH Royal Institute of Technology, Stockholm, Sweden.	Aug 2016
Department of Microbiology, Tumor and Cell Biology Seminar, Karolinska Institute, Stockholm, Sweden.	Aug 2016
Institute of Mathematics Seminar, Academia Sinica, Taipei, Taiwan.	Aug 2015
Mini-Symposium on Recent Development of Mathematical Models in Computational Biology, 8 th International Congress on Industrial and Applied Mathematics Beijing, China.	Aug 2015
Applied Mathematics and Probability Seminar, Department of Mathematics, University of California, San Diego, CA.	Jan 2015
Biomathematics Seminar, Departments of Biomathematics and Mathematics, University of California, Los Angeles, CA.	Jan 2015
9 th International Conference on Computational Physics, Singapore.	Jan 2015
10 th National Conference on Probability and Statistics, Shandong University.	Oct 2014
Cold Spring Harbor Asia Meeting on Quantitative Biology, Suzhou, China.	Oct 2014
Workshop on Rare-Event Stochastic Computing and Applications, Hong Kong City University, Hong Kong.	Jan 2014
Workshop on Mathematical Modeling and Scientific Computing in Biology and Life Sciences, Shanghai Jiaotong University, China.	Dec 2013
Non-Equilibrium Phenomena, Spin Glasses and Algorithm, Beijing Satellite Meeting of StatPhys25 (XXV IUPAP International Conference on Statistical Physics), Kavli Institute of Theoretical Physics in China, China.	Jul 2013
6 th International Workshop on Nonequilibrium Thermodynamics/3 rd Lars Onsager Symposium, Roros, Norway.	Aug 2012
Cold Spring Harbor Meeting on Single Cell Analysis, Cold Spring Harbor, NY.	Jul 2011
Department of Chemistry and Biochemistry Seminar, University of Maryland, College Park, MD.	May 2011
Gordon Research Conference on Stochastic Physics in Biology, Los Angeles, CA.	Jan 2011

FUNDING

The National Science Fund for Distinguished Young Scholars, National Natural Science Foundation of China.	2023–2027
Project: Interfaces between stochastic processes and biophysical chemistry Principle Investigator (Grant no. T2225001, 4,000,000 RMB)	
General Program, National Natural Science Foundation of China.	2020–2023
Project: Stochastic mathematical theory of modern nonequilibrium thermodynamics and statistical physics Principle Investigator (Grant no. 11971037, 520,000 RMB)	
National Key R&D Program of China.	2020–2023
Project: Network Collaborative Manufacturing and Smart Factory Principle Investigator of Subproject 3 (Grant no. 2018YFB1701503, 387,000 RMB)	
Outstanding Youth Foundation, National Natural Science Foundation of China.	2017–2019
Project: Interfaces between stochastic processes and biophysical chemistry	

Principle Investigator (Grant no. 11622101, 1,300,000 RMB)	
National High-Tech Research and Development Program of China.	2015–2017
Project: Technology and device for real-time 3D imaging of single-cell dynamics	
Participate (Grant no. 2015AA020406, 600,000 RMB)	
General Program, National Natural Science Foundation of China.	2014–2017
Project: Theory and models for DNA allostery	
Principle Investigator (Grant no. 21373021, 600,000 RMB)	
Foundation for National Excellent Doctoral Dissertations, China.	2011–2015
Project: Stochastic models in biochemistry and statistical physics	
Principle Investigator (Grant no. 201119, 560,000 RMB)	
Youth Program, National Natural Science Foundation of China	2010–2012
Project: Applications of stochastic processes in modern nonequilibrium statistical physics and biochemical models	
Principle Investigator (Grant no. 10901040, 160,000 RMB)	

ACADEMIC ACTIVITIES AND SERVICES

Member of the Teaching Committee	2018-2021
Beijing International Center for Mathematical Research and School of Mathematical Sciences, Peking University	
Member of the Admission Committee	2013-present
Beijing International Center for Mathematical Research and School of Mathematical Sciences, Peking University	
Reviewer of AMS	2017-present
Member of the Degree Committee	2013-2017
Beijing International Center for Mathematical Research and School of Mathematical Sciences, Peking University	
Organizer of the lecture series named “One Hour of Mathematical Research at Peking University”	Apr 2015-present
Co-organizer of “Workshop on Nonequilibrium Thermodynamics and Statistical Mechanics”	Nov 2016
Beijing International Center for Mathematical Research	
Co-organizer of “International Workshop on Interdisciplinary Research between Mathematics and Biology processes”	Jul 2016
Beijing International Center for Mathematical Research	
Local coordinator of the Program “Nonequilibrium Processes at the Nanoscale”	Jul 2016
Kavli Institute of Theoretical Physics in China	
Co-organizer of “Workshop on Stochastic Processes and its Applications in Physics and Biology”	Dec 2015
Beijing International Center for Mathematical Research	
Local coordinator of the Program “Small System Nonequilibrium Fluctuations, Dynamics and Stochastics, and Anomalous Behavior”	Jul 2013
Kavli Institute of Theoretical Physics in China	
Co-organizer of “Young Mathematician Forum”	Jun 2013
Beijing International Center for Mathematical Research	

