Si Li (https://sili-math.github.io/) *Curriculum Vitae (2025)*

Birth: Jan 1984

Employment

- 2014 -present: Professor   Tsinghua University.
- 2012 -2014: Assistant Professor   Boston University.
- 2011 -2012: Boas Assistant Professor (Postdoctoral Fellowship)   Northwestern University.
  - **Visiting positions**
- 2019 -2020: Visiting fellow   Institute for Advanced Study.
- 2014 -2015: Visiting fellow   Perimeter Institute for Theoretical Physics.
- 2014 -2020: Affiliated Visiting Senior Scientist   Kavli IPMU at University of Tokyo.
  - **Service positions**
- 2020-2022, Associate Dean   Qiuzhen College, Tsinghua University.
- 2019-2020, Associate Dean   BIMSA, Yanqi Lake Beijing.
- 2017-2020, Associate Dean   Dept. of Math. Sci., Tsinghua University.

Education

- Ph.D. in Mathematics, 2006-2011   Harvard University.
- M.Phil. in Mathematics, 2003-2005   Univ. of Sci. & Tech. of China.
- B.Sc. in Mathematics, 1999–2003   Univ. of Sci. & Tech. of China.

Academic Interest

- Mathematical Physics; Quantum Field Theory. Some previous works include the construction of the **quantum B-twisted open-closed string field theory** and **twisted supergravity**、solution of the **Landau-Ginzburg Mirror Symmetry Conjecture** on the quantum singularity theories、solution of the **higher genus mirror symmetry conjecture on elliptic curves**, etc.

Awards

- National Key Research and Development Program of China 2020YFA0713000 (PI), 2021-2025.
- NSF Beijing Key Project, Z180003 (co-PI) 2018.12-2021.12, Geometry and Category on Calabi-Yau manifolds
- NSF DMS-1309118 (PI) 2013-2016, Geometric Aspects of Quantum Field Theory and Topological String.
- **Morningside Medal of Mathematics: Gold Medal Award**, 2016.
- New World Mathematics Awards: Golden Prize for Doctor Thesis Awards, 2012
- Plenary Speaker at **String-Math** in 2015 (China), in 2018 (Japan) and in 2021 (Brazil)
- ICCM Best Paper Award (2017 and 2020)
- Tsinghua University Award for Excellence in Doctoral Supervision (2021)
- Teaching Excellence Award, Qiuzhen College, Tsinghua University (2020 and 2022)
- Research Excellence Award, Yau Mathematical Sciences Center, Tsinghua University (2020 and 2022)
- Research Excellence Award, Department of Mathematical Sciences, Tsinghua University (2023)

Books

- 《*Classical Mechanics and Geometry*》 International Press of Boston. 2023. ISBN 9781571464545
- 《*Electromagnetism and Geometry*》 International Press of Boston. 2023. ISBN 9781571464620
- 《*Ordinary Differential Equations*》 International Press of Boston. 2024. ISBN 9781571464330
- 《*Quantum Mechanics and Geometry*》 available online at https://sili-math.github.io/
- 《*Introduction to Algebraic Topology*》 available online at https://sili-math.github.io/
- 《*Geometry and Symmetry*》 available online at https://sili-math.github.io/

Publications

1. *Contact Term Algebras and Dijkgraaf's Master Equation* (with X. Tang and Z. Gui), **arXiv:2506.13194 [math.QA]**

2. *Quantum Algebra of Chern-Simons Matrix Model and Large N Limit* (with S.Hu, D. Ye, Y. Zhou), **Annales Henri Poincaré**, (2025). https://doi.org/10.1007/s00023-025-01585-9

3. *Stochastic Calculus and Hochschild Homology* (with Z.C. Wang and P. Yang), **arXiv:2501.12360 [math.PR]**

4. *Topological Quantum Mechanics on Orbifolds and Orbifold Index* (with P. Yang), **PAMQ**, 21 No.4 (2025)

5. *Quadratic Duality for Chiral Algebras* (with Z. Gui, K. Zeng), **Adv. Math.** 451 (2024) 109791

6. *On the Hilbert Space of the Chern-Simons Matrix Model, Deformed Double Current Algebra Action, and the Conformal Limit* (with S.Hu, D. Ye, Y. Zhou), **arXiv:2409.12486 [math-ph]**

7. *Vertex algebras and quantum master equation.* **J.Diff.Geom.** 123 (2023), no 3, 461-521.

8. *Regularized Integrals on Elliptic Curves and Holomorphic Anomaly Equations (with J. Zhou).* **Commun. Math. Phys.** 401, pages 613–645 (2023)

9. *On the L^2-Hodge theory of Landau-Ginzburg models (with H. Wen).* **Adv. Math.** 396 (2022) 108165

10. *Landau-Ginzburg mirror symmetry conjecture* (with W. He, Y. Shen, R. Webb). **J. Eur. Math. Soc.** Volume 24, Issue 8, (2022), pp. 2915–2978

11. *Elliptic Trace Map on Chiral Algebras* (with Z. Gui), **arXiv:2112.14572 [math.QA]**

12. *Regularized Integrals on Riemann Surfaces and Modular Forms* (with J. Zhou). **Commun. Math. Phys.** 388, pages 1403–1474 (2021)

13. *Geometry of Localized Effective Theories, Exact Semi-classical Approximation and the Algebraic Index* (with Z.Gui, K.Xu). **Commun. Math. Phys.** 382, 441–483 (2021).

14. *Anomaly cancellation in the topological string* (with K. Costello). **Adv. Theo. Math. Phys.** Vol. 24, No. 7 (2020), pp. 1723-1771.

15. *Dispersionless Integrable Hierarchy via Kodaira-Spencer Gravity* (with W.He, X.Tang, P. Yoo). **Commun. Math. Phys.** 379, 327–352 (2020).

16. *Homotopy Algebras in Higher Spin Theory* (with K. Zeng). **Adv. Theo. Math. Phys.** Vol 24, Issue 3, 757-819 (2020)

17. *G-twisted braces and orbifold Landau-Ginzburg Models* (with W. He and Y. Li), **Commun. Math. Phys.** 373, no.1, 175–217 (2020).

18. *Calabi-Yau geometry, Primitive form and Mirror symmetry*, **Adv. Stud. Pure Math.** Primitive Forms and Related Subjects, page 237-268 (2019). Mathematical Society of Japan.

19. *Categorical primitive forms and Gromov-Witten invariants of An singularities* (with A. Caldararu and J. Tu). **Int Math Res Notices**, rnz315 (2019).

20. *Seiberg-Witten differential via primitive forms* (with D. Xie and S.-T. Yau), **Commun. Math. Phys** 367, no.1, 193-214 (2019).

21. *Effective Batalin-Vilkovisky quantization and geometric applications*, Proceedings of the 7th ICCM, Vol. I, 349–372, **Adv. Lect. Math.** 43. (2019).

22. *Unfolding of Orbifold LG B-Models: A Case Study* (with W. He and Y. Li), **PAMQ** 14.3 (2018): 443-465.

23. *Some Classical/Quantum Aspects of Calabi-Yau Moduli*. **Trends in Mathematics** , Birkhäuser, Cham. B-Model Gromov-Witten Theory, page 463-497 (2018).

24. *Mirror symmetry for unimodular exceptional singularities* (with C. Li, K. Saito and Y. Shen), **J. Eur. Math. Soc.** 19 (2017), no.4, 1189-1229.

25. *Batalin-Vilkovisky quantization and the algebraic index*(with Q.Li, R. Grady), **Adv. Math.** 317 (2017), 575-639.

26. *Twisted supergravity and its quantization* (with K. Costello), **arXiv: 1606.00365 [hep-th]**

27. *On the B-twisted topological sigma model and Calabi-Yau geometry* (with Q. Li), **J.Diff.Geom**. 102 (2016) no.3, 409-484.

28. *Quantization of open-closed BCOV theory, I* (with K. Costello), **arXiv:1505.06703 [hep-th]**

29. *A mirror theorem between Landau-Ginzburg models*. **Nuclear Phys. B.**, **898** (2015).

30. *Primitive forms via polyvector fields* (with C. Li and K. Saito), **arXiv:1311.1659 [math.AG]**

31. *Variation of Hodge structures, Frobenius manifolds, and gauge theory*, **arXiv:1303.2782 [math.QA]**

32. *Quantum BCOV theory on Calabi-Yau manifolds and the higher genus B-model* (with K. Costello), **arXiv:1201.4501 [math.QA]**

33. *Renormalization and mirror symmetry*, **SIGMA 8** (2012), 101

34. *Feynman graph integrals and almost modular forms*, **Commun. Number theory Phys**, **6**, (2012)

35. *Picard-Fuchs Equations of Relative Periods and Abel-Jacobi Map for Calabi-Yau Hypersurfaces* (with B.H. Lian and S.T. Yau), **Amer. J. Math**, **134** (2012), no.5, 1345-1384

36. *On the spectrum of unitary finite-Euclidean graphs* (with L.A. Vinh), **Ars Combin**. **110** (2013), 275-287.

37. *BCOV theory on the elliptic curve and higher genus mirror symmetry*, **arXiv:1112.4063 [math.QA]**

38. *Morphisms from Azumaya prestable curves with a fundamental module to a projective variety: Topological D-strings as a master object for curves* (with C.H. Liu, R. Song and S.T. Yau), **arXiv:0809.2121 [math.AG]**

39. *Hamiltonian Formalism of the de-Sitter Invariant Special Relativity* (with M.L. Yan, N.C. Xiao and W. Huang), **Commun. Theor. Phys**. **48** :27-36, (2007)

40. *Baryonium with a phenomenological skyrmion-type potential* (with M.L. Yan, B. Wu and B.Q. Ma), **Phys. Rev. D**, **72** (2005) 0 34027

41. ***Calabi-Yau geometry and higher genus mirror symmetry*, PhD Thesis (2011), Harvard University.**

Invited Talks

1. July 22, 2025: International Congress of Basic Science (Plenary talk), BIMSA, Beijing
2. June 30-July 19, 2025: 短期课程"量子场论"，第十五届全国数学拔尖学生联合暑期学校，四川大学
3. Mar 24, 2025: Fundamental Physics Seminar, IAS of HKUST, Hong Kong
4. Mar 20-Apr 3, 2025: MIST lecture series "B-model", IMS of CUHK, Hong Kong
5. Feb 19, 2025: Seminar "Quantum Mechanics with zero Hamiltonian", University of Mons, Belguim
6. Feb 3-6, 2025: Mini-Course "Homological Method in Topological/Holomorphic QFT", Institut Mittag-Leffler
7. Jan 23, 2025: Conference "Cohomological Aspects of Quantum Field Theories", Institut Mittag-Leffler
8. Nov 26, 2024: 省身班学术讲座，南开大学
9. Nov 5, 2024: The 4th International Conference on Operad Theory and Related Topics, Chern Institute of Mathematics, Nankai University
10. Oct 18, 2024: Workshop on Calabi-Yau Geometry, 上海科技大学
11. Oct 18, 2024: 科学进展与学术交流报告会，中科院数学与系统科学研究院
12. Sep 9-12, 2024: Gauge invariance: quantization and geometry – in memory of **Igor Batalin**, Belgium
13. Aug 11-24, 2024: 短期课程"量子化的同调方法"，数学与物理国际暑期学校，东北师范大学/吉林大学
14. July 21-31, 2024: Moscow International Undergraduate Mathematics Summer School, Moscow, Russia
15. July 11, 2024: ICBS Satellite Conference in Mathematical Physics, Shanghai, China
16. June 10-14, 2024: 2024 Thematic Program in Field Theory and Topology, Notre Dame, USA
17. May 17, 2024: Colloquium, 浙江大学数学科学学院.
18. May 16, 2024: 陈建功大讲堂, 杭州师范大学数学学院.
19. May 14, 2024: 数智论坛, 南昌大学数学与计算机学院.
20. May 13, 2024: 数魏讲坛, 南昌航空大学数学与信息科学学院.
21. May 10, 2024: 珠峰讲坛, 山东大学数学学院.
22. Apr 25, 2024: 学术讲座, 华中科技大学数学与统计学院.
23. Apr 24, 2024: 学术讲座, 华中科技大学物理学院.
24. Apr 23, 2024: 学术讲座, 湖北大学物理学院.
25. Apr 22, 2024: 学术论坛, 河南大学数学与统计学院.
26. Apr 3, 2024: Current Developments in Mathematics and Physics, Beijing, China.
27. Mar 12, 2024: Conference on "Algebraic, analytic, geometric structures emerging from quantum field theory", Chengdu, China.
28. Feb 28, 2024: 几何讨论班，四川大学数学系.
29. Feb 1, 2024: Geometry and Physics Seminar, UC Berkeley, USA.
30. Jan 24, 2024: Geometry and Physics Seminar, Boston University, USA.
31. Jan 18, 2024: Algebraic Geometry Seminar, Boston College, USA.
32. Dec 23, 2023: 学术讲座, 东北师范大学.
33. Dec 23, 2023: 物理名家讲座, 吉林大学物理系.
34. Dec 11, 2023: 励新卓越论坛, 首都师范大学数学科学学院.
35. Dec 4, 2023: 代数几何讨论班, 南京大学.

36. Dec 3, 2023: 学术论坛, 南京大学.

37. Dec 3, 2023: 学术讲座, 东南大学丘成桐中心.

38. Sep 13, 2023: Eastern Hemisphere Colloquium on Geometry and Physics.

39. Aug 17, 2023: QM Research Seminar, Center for Quantum Mathematics, Danmark.

40. July 31, 2023: MIST: Satellite Conference to the "International Congress of Basic Science", CUHK, Hong Kong.

41. May 11, 2023: 2023 GADEPs focused conference II: Periods of Calabi-Yau varieties and Gromov-Witten invariants, BIMSA, China.

42. Apr 27, 2023: Wu Wen-tsun Lab Lecture, USTC, China.

43. Jan 13, 2023: TSIMF 2023 Homological Algebra of the Infrared, Sanya, China.

44. Nov 2, 2022: The Greater Bay Area Geometry and Mathematical Physics Seminar

45. Aug 1, 2022: The 9th International Congress of Chinese Mathematicians, Beijing, China.

46. June 20-24, 2022: Online Workshop on Topology and QFT. University of Notre dame.

47. Mar 30, 2022: Joint Harvard-CUHK-YMSC Differential Geometry Seminar.

48. Mar 22-25, 2022: "Geometry, Representation Theory and Quantum Fields", Osaka City University.

49. Nov 22–Dec 03 2021: String and M-Theory: The New Geometry of the 21st Century –II, NUS, Singapore.

50. Nov 22-26, 2021: Higher structures in geometry and physics, Chern Institute of Mathematics, Nankai University

51. **August 2-7, 2021: International Congress on Mathematical Physics (ICMP) 2021 (session Quantum Field Theory)**, Geneva, Switzerland.

52. **June 14-18, 2021: String-Math 2021 (Plenary talk)**, IMPA, Rio de Janeiro, Brazil.

53. May 14, 2021: TQFT Seminar, Instituto Superior Técnico, Lisbon, Portugal.

54. May 12, 2021: Hodge Seminar, Edinburgh Hodge Institute, Scotland.

55. May 3, 2021: Online Geometry and Physics Seminar, IASM at Zhejiang University, China.

56. Dec 27, 2020: ICCM Annual Meeting, USTC, China.

57. Oct 30, 2020: Wu Wen-tsün Lab Lecture, USTC, China.

58. Sep 20, 2020: "The 3rd Conference on Operad Theory and Related Topics", Jilin University, China.

59. Apr 17, 2020: Zoom Mathematical Physics Seminar, Tsinghua University, China.

60. Dec 11 , 2019: Colloquium, Columbia University, USA.

61. Dec 9, 2019: Symplectic Geometry, NCG and Math Physics, Washington Univ. in St. Louis, USA.

62. Dec 2, 2019: Geometry, Symmetry and Physics Seminar, Yale, USA.

63. Nov 25, 2019: Geometry and Topology Seminar, UC Irvine, USA.

64. Nov 21, 2019: Geometry, Physics and Representation Theory Seminar, Northeastern, USA.

65. Nov 15, 2019: High Energy Theory Seminar Seminar, IAS, USA.

66. Nov 8, 2019: Lie Group/Quantum Mathematics Seminar, Rutgers, USA.

67. Oct 8, 2019: Colloquium, Rutgers- Newark, USA.

68. June 17-28, 2019: Lectures at summer workshop "QFT for Mathematicians", Perimeter Institute, Canada.

69. June 14, 2019: "The mathematical foundations of conformal field theory and related topics"in honor of Yi-Zhi Huang's 60th birthday., Nankai University, Tianjin, China.

70. **June 13, 2019: The 8th International Congress of Chinese Mathematicians (Plenary talk), Beijing, China.**

71. May 6-11, 2019: Deformation theory and homotopy algebras, Emei, China.

72. Apr 24 and Apr 26, 2019: Mathematical Physics Seminar and GAP Seminar, USTC, China.

73. Feb 17-24, 2019: BIRS Workshop on Quantum Field Theory and Factorization Algebras, Banff, Canada.

74. January 25-27, 2019: Workshop on Modular structures in Gromov-Witten theory and related topics , University of Michigan, USA.

75. Feb 14, 2019: Geometry Seminar, University of Oregon, USA.

76. **Jan 14-18, 2019: Between Topology and Quantum Field Theory in celebration of Dan Freed's 60th birthday, University of Texas at Austin, USA.**

77. Dec 10-14, 2018: Workshop on String and M-theory: the new geometry of the 21 century, IMS at NUS, Singapore.

78. Nov 24-26, 2018: Mini-Workshop on Hochschild Cohomology and Related Topics III, East China Normal University, China.

79. Nov 16, 2018: Colloquium at IMS, Shanghaitech University, China.

80. **July 18-22, 2018: String-Math 2018 (Plenary talk), Tohoku University, Japan.**

81. May 10, 2018: 2018 Higher Structures and Symplectic Geometry, Tsinghua University, China.

82. Feb 8, 2018: Workshop on Factorisation Homology, Factorisation Algebras and the Cobordism Hypothesis, Saint-Etienne de Tinee, France.

83. Jan 29, 2018: Higher differential geometry seminar, MPIM, Bonn, Germany.

84. Jan 10-13, 2018: Simons Collaboration Workshop on Homological Mirror Symmetry, Harvard, USA.

85. Dec 7, 2017: Geometry Seminar, CNU, Beijing.

86. Nov 16-19, 2017: Gromov-Witten invariants and integrable hierarchies, USTC, China.

87. Nov 26, 2017: Wu Wen-tsün Lab Lecture, USTC, China.

88. Oct 30-Nov 4, 2017: East Asia Symplectic Conference 2017, Chengdu, China.

89. July 31-Aug 11, 2017: Geoquant 2017, Aarhus, Danmark.

90. **July 24-29, 2017: String-Math 2017 (Parallel talk), Hamburg, Germany.**

91. July 20-22, 2017: Flat connections in physics and geometry, Heidelberg, Germany.

92. July 3-7, 2017: Symposium in Geometry and Differential Equations, Beijing, China.

93. June 8, 2017: ICTS seminar, USTC, Hefei, China.

94. May 22-26, 2017: Homological mirror symmetry and higher genus invariants, Simons Center for Geometry and Physics, USA.

95. May 8-12, 2017: Quantum fields on manifolds with boundary and the BV formalism, Perimeter Institute, Canada.

96. **Apr 28-May 1, 2017: JDG conference on geometry and topology, Harvard, USA.**

97. **Apr 25-28, 2017: Developments of mathematics at IPMU: in honor of Kyoji Saito, Kavli IPMU, Japan.**

98. Apr 17-24, 2017: Gauge Equations, Geometry and Strings, ICMAT, Madrid, Spain.

99. Mar 13-17, 2017: Workshop on homological mirror symmetry, IAS, Princeton, USA.

100. Feb 6, 2017: Geometry and Physics seminar, IBS-CGP, Korea.

101. Jan 19, 2017: Ganita seminar, University of Toronto, Canada.

102. Jan 18, 2017: Mathematical Physics seminar, Perimeter Institute for theoretical physics, Canada.

103. Oct 31-Nov 4, 2016: BICMR/IBS-CGP joint Symplectic Geometry Workshop, Jeju, Korea.

104. **Aug 6-11, 2016: The 7th International Congress of Chinese Mathematicians, Beijing, China.**

105. **Aug 1-5, 2016: Strings 2016 (Parallel talk), Beijing, China.**

106. June 20-26, 2016: Retrospective Workshop for the Thematic Program on Calabi-Yau Varieties: Arithmetic, Geometry and Physics, Herstmonceux Castle, UK

107. May 8-14, 2016: Lecture series for "Factorization Algebras and Functorial Field Theories", MFO, Germany.

108. May 6-8, 2016: Simons Workshop on SYZ Mirror Symmetry and related topics, Harvard, USA.

109. Apr 24-30, 2016: Mini course on "BV quantization and geometric applications", IBS-CGP, Korea.

110. Apr 5-12, 2016: MIST IV: Mathematics Inspired by String Theory, CUHK, Hong Kong.

111. Jan 1-4, 2016: Poisson Geometry and Mathematical Physics, Chern Institute of Mathematics, Tianjin.

112. **Dec 31, 2015: Strings-Math 2015 (Plenary talk), Sanya, China.**

113. Dec 27, 2015: Workshop on Mathematics Physics, Dec 27, Sanya, China.

114. Nov 24, 2015: 2015 Annual Conference of Chinese Mathematical Society, CNU, Beijing.

115. Nov 14, 2015: Geometry and Physics seminar, Shanghai Jiaotong University, Shanghai

116. July 13-July 18,, 2015: "Uniformization, Riemann-Hilbert Correspondence, Calabi-Yau manifold, and Picard-Fuchs Equation", Mittag-Leffler Institute, Sweden

117. July 6-10, 2015: GAP XII-Derived Algebraic Geometry, IBS-CGP, Pohang, Korea

118. March 28, 2015: Tianyuan workshop in algebraic geometry, AMSS, Beijing.

119. Mar 23, 2015: Symplectic geometry and mathematical physics, BICMR, China.

120. March 7, 2015: Beijing Geometry and Physics Colloquium, Peking University

121. Feb 7-8, 2015: Lecture series-Introduction to perturbative field theory, Morningside Center, CAS, Beijing.

122. Jan 20, 2015: String/Math Seminar, Perimeter Institute, Canada

123. Aug 26, 2014: China annual complex analysis conference, USTC, Hefei.

124. Oct 20, 2014: Geometry seminar, Lehigh University, USA.

125. Oct 6, 2014: Informal mathematical physics seminar, Columbia University, USA.

126. Sep 29-Aug 3, 2014: Homological methods in quantum field theory, Simons center for geometry and physics, USA.

127. Sep 18, 2014: Seminar on mathematical physics, Morningside Center for Mathematics, CAS, Beijing.

128. **Aug 5, 2014: 60 years of Calabi conjecture-Workshop in Honor of Professor Shing-Tung Yau on the occasion of his 65th birthday, Tsinghua University**

129. June 8-15, 2014: Lecturer for Research Training Group 1670, University of Hamburg, Germany

130. May 19-23, 2014: Representation Theory, Integrable Systems, and Quantum Fields, Northwestern University, USA

131. April 1, 2014: Algebraic geometry seminar, Princeton, USA

132. Mar 3-7, 2014: Workshop on B-model aspect of Gromov-Witten theory, University of Michigan

133. Feb 10-14, 2014: Lecturer: Primitive forms and related subjects, Kavli IPMU, Japan

134. Nov 25, 2013: Geometry and Physics seminar, University of Michigan, USA

135. July 22, 2013: Invited seminar, Kavli IPMU, Japan

136. **July 16, 2013: The Sixth International Congress of Chinese Mathematicians, Taipei**

137. Apr 12-14, 2013: Mini-course for FRG Workshop on Gromov-Witten theory, Columbia University, USA

138. Mar 11, 2013: Geometry and Physics seminar, University of Michigan, USA

139. Jan 29, 2013: Differential geometry seminar, Harvard University, USA

140. Nov 30, 2012: Everytopic Seminar, Brandeis University, USA

141. Nov 27, 2012: GAP Seminar, Penn State University, USA

142. Sep 14-17, 2012: Boston-Keio Summer Workshop on Geometry, Boston University, USA

143. Aug 27, 2012: FRG Workshop: Generalized Geometry, String Theory, and Deformations, Harvard, USA

144. August 20-24, 2012: The Conference of Mirror Symmetry and Related Topics, KMUST, China

145. July 27-Aug 20, 2012: Summer course, MSC at Tsinghua University, China

146. August 10, 2012: Math Literature Seminar, MSC at Tsinghua University, China

147. July 18, 2012: Workshop on the mathematical aspects of quantum field theory, USTC, China

148. June 26, 2012: Geometry and Physics of the Landau-Ginzburg Model, IPMU, Japan

149. June 18, 2012: Quantization and Mathematics: An Undergraduate Conference, Northwestern University, USA

150. Mar 19, 2012: Geometry and Physics Seminar, University of Michigan, USA

151. Feb 18, 2012: Hong Kong Geometry Colloquium, Hong Kong

152. Feb 17,20, 2012: Geometry and Physics Seminar, HK Chinese Univ, Hong Kong

153. Feb 8,11, 2012: Geometry Seminar, HKUST, Hong Kong

154. Dec 9, 2011: Geometry Seminar, Boston University, USA

155. Nov 3, 2011: Felix Klein Seminar, University of Notre Dame, USA

156. Aug 3, 2011: Workshop on Chiral Differential Operators, Northwestern University, USA

157. July 19, 2011: Seminar on QFT, MIT, US

158. May 5, 2011: Mirror Symmetry Seminar, Simons Center for Geometry And Physics, Stonybrook

159. Mar 4, 2011: Algebraic Geometry Seminar, University of Wisconsin, USA

160. Feb 22, 2011: Differential Geometry Seminar, Harvard University, USA

161. Oct 14, 2010: Geometry/Physics Seminar, Northwestern University, USA

162. Sep 28, 2010: Differential Geometry Seminar, Harvard University, USA

163. Dec 4 2009: Differential Geometry Seminar, Harvard University, USA

Teaching and Mentorship

- **Post-doc mentorship**

  - Jingyue Chen (2015-2018),   Faculty at Capital Normal University
  - Weiqinag He (2015-2018),   Faculty at Sun Yat-sen University
  - Hao Wen (2016-2019),   Faculty at Nankai University
  - Xinxing Tang (2017-2021)   Faculty at Beijing Inst. of Math. Sci. App. (BIMSA)
  - Jiawei Zhou (2019-2022)   Faculty at Nanchang University

- Hongfei Shu (2021-2023)   Faculty at Zhengzhou University
- Yong Li (2022-2024)   Faculty at Beijing Inst. of Math. Sci. App. (BIMSA)

- **Graduate (Ph.D.) mentorship**

    - Yifan Li (2014-2019)
      Thesis: "**Algebraic Approaches to Landau-Ginzburg Orbifolds**".
    - Zhengping Gui (2016-2021)
      Thesis: "**Chiral deformation theory of 2d conformal field theory**"
    - Minghao Wang (2018-2023)
      Thesis: "**Perturbative BV-BFV formalism with homotopic renormalization**"
    - Gongwang Yan (2018-2023)
      Thesis: "**Homological framework for quantum field theory on manifold with boundary: a case study**"
    - Xiaoxiao Yang (2019-2025)
      Thesis: "**Application and Generalization of Regularized Integral**"
    - Tianqin Zhu (2020-2025)
      Thesis: "**Quantum toroidal algebras, quantum difference equations and stable envelopes**"
    - Peng Yang (2020-current)
    - Linfang Hou (2024-current)
    - Stanislav Ershov (2024-current)

- **Undergraduate thesis mentorship**

    - Yifan Wu (2024, Columbia)
    - Chenjing Bu (2021, Oxford)
    - Keyou Zeng (2018, Perimeter Institute)
    - Kai Xu (2018, Harvard)
    - Shaoyun Bai (2017, Princeton)
    - Yuxuan Yang (2017, Harvard)
    - Zhengping Gui (2016, Tsinghua)
    - Weifeng Sun (2016, Harvard)

- **Teaching (Tsinghua)**

    - Fall 2024: *Mathematical Methods in Quantum Mechanics*   (undergraduate, 4 credits)
    - Fall 2024: *Linear Algebra (for physics major)*   (undergraduate, 4 credits)
    - Fall 2023: *Ordinary Differential Equations*   (undergraduate, 4 credits)
    - Fall 2023: *Quantum Mechanics*   (**new undergraduate course for Qiuzhen College**, 4 credits)
    - Spring 2023: *Electrodynamics*   (**new undergraduate course for Qiuzhen College**, 4 credits)
    - Fall 2022: *Classical Mechanics*   (**new undergraduate course for Qiuzhen College**, 4 credits)
    - Spring 2021: *Algebraic Topology*   (graduate course. 4 credits)
    - Fall 2020: *Mathematical Analysis-I*   (undergraduate. 5 credits)
    - Spring 2020: *Algebraic Topology*   (graduate course. 4 credits)

- Spring 2019: *Noncommutative geometry* (**new graduate course**, 4 credits)
- Spring 2019: *Mathematical Examples* (**new undergraduate course for Yau Elite class**, 2 credits)
- Fall 2018: *Geometry and Symmetry* (**new undergraduate course for Yau Elite class**, 3 credits)
- Spring 2018: *Algebraic Topology* (**graduate course, evaluation top 5 % at Tsinghua**, 4 credits)
- Fall 2017: *Topics in mathematical physics-supersymmetry* (**new graduate course**, 4 credits)
- Fall 2017: *Topology* (undergraduate, 3 credits)
- Fall 2015: *Linear algebra* (undergraduate, 4 credits)
- Spring 2015:*Topics in quantum field theory and geometric applications* (YMSC graduate, 4 credits)
- Summer 2014: *Introduction to deformation quantization* (YMSC graduate, 2 credits)
- Summer 2013: *Topics in quantum field theory* (YMSC graduate, 2 credits)