

Boston University  
Department of Mathematics and Statistics  
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## Employment

- Assistant Professor, Boston University, 2012-present
- Boas Assistant Professor, Northwestern University, 2011-2012.

## Education

- Harvard University, Cambridge, U.S.  
Ph.D. in Mathematics, 2006-2011 (Thesis supervisor: Shing-Tung Yau)
- University of Science and Technology of China, Hefei, P. R. China  
M.Phil. in Mathematics, 2003-2005. (Thesis supervisor: Sen Hu)
- University of Science and Technology of China, Hefei, P. R. China  
B.Sc. in Mathematics, School of the Special Class for Gifted Young, 1999–2003.

## Academic Interest

- Algebraic geometry and complex geometry: Calabi-Yau geometry, singularity/Landau-Ginzburg theory, moduli problem, mirror symmetry.
- Quantum field theory and string theory: Renormalization theory, non-linear sigma model, topological string, supersymmetric gauge theory.

## Awards

- New World Mathematics Awards: Golden Prize for Doctor Thesis Awards, 2012
- Harvard Merit Fellowship 2010-2011
- Harvard Salam Fellowship, 2008-2009
- USTC Outstanding Graduate Scholarship, 2003

## Publications and Preprints

- S. Li, *Variation of Hodge structures, Frobenius manifolds, and gauge theory*, arXiv:math.QA/1303.2782
- S. Li, *Renormalization and mirror symmetry*, SIGMA **8** (2012), 101
- S. Li, *BCOV theory on the elliptic curve and higher genus mirror symmetry*, arXiv:math.QA/1112.4063.
- S. Li, *Feynman graph integrals and almost modular forms*, Commun. Number theory Phys, **6**, (2012)
- K. Costello and S. Li, *Quantum BCOV theory on Calabi-Yau manifolds and the higher genus B-model*, arXiv:math.QA/1201.4501v1

- S. Li, *Calabi-Yau geometry and higher genus mirror symmetry*, PhD Thesis (2011), Harvard University.
- S. Li, B.H. Lian and S.T. Yau, *Picard-Fuchs Equations of Relative Periods and Abel-Jacobi Map for Calabi-Yau Hypersurfaces*, Amer. J. Math, **134** (2012), no.5, 1345-1384
- S. Li, C.H. Liu, R. Song and S.T. Yau, *Morphisms from Azumaya prestacks with a fundamental module to a projective variety: Topological D-strings as a master object for curves*, arXiv:math/0809.2121
- S. Li and L.A. Vinh, *On the spectrum of unitary finite-Euclidean graphs*, to appear in Ars Comb
- M.L. Yan, N.C. Xiao, W. Huang and S. Li, *Hamiltonian Formalism of the de-Sitter Invariant Special Relativity*, Commun. Theor. Phys. **48** :27-36, (2007)
- M.L. Yan, S. Li, B. Wu and B.Q. Ma, *Baryonium with a phenomenological skyrmion-type potential*, Phys. Rev. D, **72** (2005) 034027

## Services and Memberships

- Member of American Mathematical Society
- Reviewer for: Math Reviews of American Mathematical Society
- Referee for: Journal of Differential Geometry, Communications in Analysis and Geometry, Pure and Applied Mathematics Quarterly, Asian Journal of Mathematics
- Co-organizer for: Boston University Geometry and Physics Seminar
- Organizer for: Boston University Baby Quantum Field Theory Seminar

## Invited Talks

- July 22, 2013: Invited seminar, Kavli IPMU, Japan
  - *B-twisted sigma-model and Calabi-Yau geometry*
- July 16, 2013: The Sixth International Congress of Chinese Mathematicians
  - *B-twisted sigma-model and Calabi-Yau geometry*
- Apr 12-14, 2013: Mini-course: Workshop on Gromov-Witten theory, Columbia University.
- Mar 11, 2013: Geometry and Physics seminar, Michigan University
  - *Landau-Ginzburg B-model at higher genus*
- Jan 29, 2013: Differential geometry seminar, Harvard University
  - *The quantum theory of Landau-Ginzburg B-model*
- Nov 30, 2012: Everytopic Seminar, Brandeis University, USA
  - *Fock space and renormalization*
- Nov 27, 2012: GAP Seminar, Penn State University, USA
  - *Fock space and renormalization*

- Sep 14-17, 2012: Boston-Keio Summer Workshop on Geometry, Boston University, USA
  - *Quantum Landau-Ginzburg model and Singularity theory*
- Aug 27, 2012: FRG Workshop: Generalized Geometry, String Theory, and Deformations, Harvard University, USA
  - *Quantum  $A_1$  singularity and pure gravity*
- August 20-24, 2012: The Conference of Mirror Symmetry and Related Topics, KMUST, China
  - *Fock space and renormalization*
- July 27-Aug 20, 2012: Summer course, MSC at Tsinghua University, China
  - *Topics in Quantum Field Theory*
- August 10, 2012: Math Literature Seminar, MSC at Tsinghua University, China
  - *Introduction to Perturbative Quantum Field Theory*
- July 18, 2012: Workshop on the mathematical aspects of quantum field theory, USTC, China
  - *Quantum  $A_1$  singularity and pure gravity*
- June 26, 2012: Geometry and Physics of the Landau-Ginzburg Model, IPMU, Japan
  - *Quantum  $A_1$  singularity and pure gravity*
- June 18, 2012: Quantization and Mathematics: An Undergraduate Conference, Northwestern University, USA
  - *The Berezin integral and supersymmetry*
- Mar 19, 2012: Geometry and Physics Seminar, Michigan University, USA
  - *Quantum Kodaira-Spencer theory on Calabi-Yau manifolds*
- Feb 18, 2012: Hong Kong Geometry Colloquium, Hong Kong
  - *Geometric invariants on Calabi-Yau manifolds from string theory*
- Feb 17,20, 2012: Geometry and Physics Seminar, HK Chinese Univ, Hong Kong
  - *Quantum theory of polyvector fields*
- Feb 8,11, 2012: Geometry Seminar, HKUST, Hong Kong
  - *Geometry of polyvector fields on Calabi-Yau manifolds*
- Dec 9, 2011: Geometry Seminar, Boston University, USA
  - *Topological string invariants on Calabi-Yau manifolds*
- Nov 3, 2011: Felix Klein Seminar, University of Notre Dame, USA
  - *Quantum Geometry on Calabi-Yau manifolds and Higer genus Mirror Symmetry*
- Aug 3, 2011: Workshop on Chiral Differential Operators, Northwestern University, USA
  - *Supersymmetric field theories in two dimensions*
- July 19, 2011: Seminar on QFT, MIT, USA

- *BV formalism and perturbative gauge theory*
- May 5, 2011: Mirror Symmetry Seminar, Simons Center for Geometry And Physics, Stonybrook
  - *BCOV theory on the elliptic curve and higher genus mirror symmetry*
- Mar 4, 2011: Algebraic Geometry Seminar, University of Wisconsin, USA
  - *Higher genus mirror symmetry*
- Feb 22, 2011: Differential Geometry Seminar, Harvard University, USA
  - *Higher genus B-model on the elliptic curve and almost holomorphic modular forms*
- Oct 14, 2010: Geometry/Physics Seminar, Northwestern University, USA
  - *Feynman Diagrams, Perturbative field theory and Calabi-Yau geometry*
  - *BCOV theory on elliptic curve and higher genus mirror symmetry*
- Sep 28, 2010: Differential Geometry Seminar, Harvard University, USA
  - *BCOV theory on elliptic curve and higher genus mirror symmetry*
- Dec 4 2009: Differential Geometry Seminar, Harvard University, USA
  - *Picard-Fuchs Equation of Relative Periods And Abel-Jacobi Maps for Calabi-Yau Hyper-surface*
- Mar 12, 2009: Graduate Trivial Notion Seminar, Harvard University, USA
  - *Feynman Integrals and Three-fold Invariants*
- Apr 24, 2008: Graduate Trivial Notion Seminar, Harvard University, USA
  - *Rational curves on  $\mathbb{P}^2$*

## Teaching

- **Boston University**
  - Spring 2013: Instructor of Math 822, *Topics in geometry: Singularity theory*
  - Fall 2012: Instructor of Math 530, *Introduction to differential geometry*
- **Northwestern University**
  - Spring 2012: Instructor of Math 230, *Differential Calculus of Multivariable Functions*
  - Fall 2011: Instructor of Math 230, *Differential Calculus of Multivariable Functions*
- **Harvard University**
  - Spring 2011: Instructor of Math 1b, *Calculus II*
  - Fall 2010: Course assistant of Math 230a, *Differential Geometry*
  - Fall 2009: Instructor of Math 1b, *Calculus II*
  - Fall 2009: Course assistant of Math 114, *Analysis II: Measure, Integration and Banach Spaces*
  - Summer 2009: Course assistant of Math S-101, *An Introduction to Proof*
  - Fall 2008: Instructor of Math 1b, *Calculus II*

- Fall 2007: Instructor of Math 1a, *Calculus I*
- Summer 2007: Course assistant of Math S-310, *Graph theory*
- **University of Science and Technology of China**
  - Fall 2005: Course assistant of *Differential Geometry*,
  - Spring 2004: Course assistant of *Computational Methods*,
  - Fall 2004: Course assistant of *Mathematical Analysis*,

## References

### **Professor Shing-Tung Yau (Thesis Advisor)**

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Harvard University  
1 Oxford street  
Cambridge, MA 02138  
yau@math.harvard.edu

### **Professor Kevin Costello**

Department of Mathematics  
Northwestern University  
2033 Sheridan Road  
Evanston, IL 60208  
costello@math.northwestern.edu

### **Professor Jun Li**

Department of Mathematics  
Stanford University  
building 380  
Stanford, California 94305  
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### **Professor Robin Gottlieb (Teaching)**

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Harvard University  
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