

## CURRICULUM VITAE

TYLER J. JARVIS

### Education.

- Ph.D:** 1994. Princeton University, mathematics.
- M.A:** 1992. Princeton University, mathematics.
- M.S:** 1990. Brigham Young University, mathematics.
- B.S:** 1989. Brigham Young University, mathematics, summa cum laude. Spencer W. Kimball Scholar. Orson Pratt Prize in Mathematics.

### Academic Experience.

- 2006–present:** Professor, Brigham Young University.
- 2001–2006:** Associate Professor, Brigham Young University.
- 2001–2002:** Visiting Faculty, Boston University.
- 1996–2001:** Assistant Professor, Brigham Young University.
- 1994–1996:** Assistant Professor, Mississippi State University.

### Administrative Experience.

- 2006–present:** Chair, Brigham Young University, Department of Mathematics.
- 2005–2006:** Chair, Rock Canyon Elementary School Community Council.
- 2004–2006:** Member, Rock Canyon Elementary School Community Council.
- 1999–2001, 2002–2006:** Director of Graduate Studies, Brigham Young University, Department of Mathematics.
- 1996–2007:** Member, Board of Directors, Meyer and Liechty Corp.

### Grants and Awards Received.

- 2006–2009:** Principal Investigator, National Science Foundation Grant DMS-0605155: “Stringy invariants, orbicurves, and topological field theory.”
- 2006–2010:** Co-Principal Investigator, National Science Foundation Grant DMS-0636648: “Center for Mentoring Undergraduate Research in Mathematics.”
- 2006:** Award for Distinguished College or University Teaching of Mathematics. Mathematical Association of America Intermountain Section.
- 2006:** College Recognition Award for Outstanding Teaching. College of Physical and Mathematical Sciences, Brigham Young University.
- 2001–2005:** Principal Investigator, National Science Foundation Grant DMS-0105788: “Higher Spin Curves and Cohomological Field Theories.”
- 1998–2000:** Principal Investigator, National Security Agency grant MDA904-99-1-0039: “Moduli of Higher Spin Curves.”
- 1995–1998:** Principal Investigator, National Science Foundation, Faculty Early Career Development (**CAREER**) Award DMS-9501617: “Moduli of Generalized Spin Curves; Class Size and Calculus Learning.”
- 1990–1993:** National Defense Science and Engineering Graduate Fellow.

## Articles and Publications.

### *Peer Reviewed Mathematical publications.*

- (1) Fan, H. J., Jarvis, T. J., & Ruan, Y. (2008). Geometry and Analysis of Spin Equations. To appear in *Communications on Pure and Applied Mathematics*.
- (2) Jarvis, T. J., Kaufmann, R., & Kimura, T. (2007). Stringy K-theory and the Chern Character. *Inventiones Mathematicae*, **168**(1), 23–81.
- (3) Jarvis, T. J., Lang, W. E., Petrosyan, N., Rimmasch, G., Rogers, J., & Summers, E. D. (2005). Classification of Singular Fibres on Rational Elliptic Surfaces in Characteristic Three. *Communications in Algebra*, **33**, 4533–4566.
- (4) Jarvis, T. J., Kimura, T. & Vaintrob, A. (2005). The Moduli Space of Stable  $r$ -Spin Maps and Quantum Cohomology. *Communications in Mathematical Physics*. **259**(3), 511–543.
- (5) Jarvis, T. J., Kaufmann, R., & Kimura, T. (2005). Pointed admissible  $G$ -covers and  $G$ -equivariant cohomological field theories. *Compositio Mathematica*, **141**, 926–978.
- (6) Jarvis, T. J. & Tanton, J. (2004). The hairy ball theorem via Sperner’s lemma. *American Mathematical Monthly*, **111**(7), 599–603.
- (7) Abramovich, D. & Jarvis, T. J. (2003). Moduli of Twisted Spin Curves. *Proceedings of the American Mathematical Society*, **131**(3), 685–699.
- (8) Jarvis, T. J. & Kimura, T. (2002). Orbifold quantum cohomology of the classifying space of a finite group. In A. Adem, J. Morava, & Y. Ruan (Eds.). *Orbifolds in mathematics and physics (Madison, WI, 2001)*, Contemporary Mathematics, **310**, 123–134. Providence, R.I.: American Mathematical Society.
- (9) Jarvis, T. J., Kimura, T. & Vaintrob, A. (2001). Gravitational Descendants and the Moduli Space of Higher Spin Curves. In E. Previato (Ed.), *Advances in Algebraic Geometry Motivated by Physics*. Contemporary Mathematics **276**, 167–177. Providence, R.I.: American Mathematical Society.
- (10) Jarvis, T. J. (2001). Picard Group of the Moduli of Higher Spin Curves. *New York Journal of Mathematics*, **7**, 23–47.
- (11) Jarvis, T. J., Kimura, T. & Vaintrob, A. (2001). Moduli spaces of higher spin curves and integrable hierarchies. *Compositio Mathematica*, **126**(2), 157–212.
- (12) Jarvis, T. J., Kimura, T. & Vaintrob, A. (2000). Tensor products of Frobenius manifolds and moduli spaces of higher spin curves. In G. Dito & D. Sternheimer (Eds.), *Conférence de Moshé Flato 1999*, vol. 2, (145–166). Dordrecht, Netherlands: Kluwer Academic Publishers.
- (13) Jarvis, T. J. (2000). Geometry of the moduli of higher spin curves. *International Journal of Mathematics*, **11**(5), 637–663.
- (14) Jarvis, T. J. (2000). Compactification of the universal Picard over the moduli of stable curves. *Mathematische Zeitschrift*, **235**, 123–149.
- (15) Jarvis, T. J. (1998). Torsion-free sheaves and moduli of generalized spin curves. *Compositio Mathematica*, **110**(3), 291–333.
- (16) Barrett, W. W. & Jarvis, T. J. (1992). Spectral properties of a matrix of Redheffer. *Linear Algebra and Its Applications*, **162–164**, 673–683.
- (17) Cox, P. A., Cromar, S. & Jarvis, T. J. (1992). Underwater pollination, three-dimensional search, and pollen morphology: predictions from a super-computer analysis. In S. Blackmore & S. H. Barnes (Eds.), *Pollen and Spores: Patterns of Diversification*, 363–375. Oxford University Press.

- (18) Cox, P. A., Cromar, S. & Jarvis, T. J. (1991). Underwater pollination and three-dimensional search: A super computer approach. In K.R. Billingsly, H.U. Brown III, & E.S. Derohanes (Eds.), *Computer Assisted Analysis and Modeling on the IBM 3090*, Vol. 2. 569–582. MIT Press.
- (19) Jarvis, T. J. (1990). A dominant negative eigenvalue of a matrix of Redheffer. *Linear Algebra and Its Applications*, **142**, 141–152.

#### **Other Mathematical Publications.**

- (20) Jarvis, T. J., Kimura, T. & Vaintrob, A. (Eds.). (2006). *Proceedings of the Conference on Gromov-Witten Theory of Spin Curves and Orbifolds*, Contemporary Mathematics, **403**. American Mathematical Society, Providence, RI.
- (21) Jarvis, T. J. (1994). *Compactification of the moduli space of generalized spin curves*. Doctoral Dissertation. Princeton University.

#### **Popular publications.**

- (22) Jarvis, T. J. & Jarvis, H. B. (2001). Gambling: What are the odds? *BYU Magazine*, Spring 2001, 48–52.
- (23) Jarvis, T. J. & Jarvis, H. B. (1999). Gambling: A Lie and a Snare. In D. Paul & G. Hatch (Eds.), *Enter to Learn* (pp. 288–299). Provo, UT: Brigham Young University.

#### **Selected Scholarly Presentations.**

- 2008, February:** *The Witten equation, mirror symmetry and quantum singularity theory* Invited address, Department of Mathematics, University of Utah.
- 2007, February:** *r-Spin Curves and Quasi-homogeneous Singularities*. Invited address, Mittag-Leffler Institute, Djursholm, Sweden.
- 2007, January:** *Geometry and compactification of the moduli space of r-spin curves* Invited address, Mittag-Leffler Institute, Djursholm, Sweden.
- 2006, October:** *Integrable Hierarchies and Mirror Symmetry for Quasi-homogeneous Singularities*. Invited address, American Mathematical Society special session on “Algebraic Geometry and Moduli Spaces,” Storrs, CT.
- 2006, May:** *Mirror Symmetry and Quantum Cohomology of Quasi-Homogeneous Singularities*. Invited address, Mathematical Sciences Research Institute Workshop “New developments in the geometry and physics of Gromov-Witten theory,” Berkeley, CA.
- 2006, January:** *Quantum Cohomology of Quasi-Homogeneous Singularities*. Invited Address, Boston University Mathematics Department.
- 2005, November:** *G-stable maps and stringy cohomology*. Invited address, American Mathematical Society special session on “Algebraic Geometry Motivated by Physics.” Eugene, OR.
- 2005, July:** *The virtual class in orbifold cohomology and K-theory*. Invited address, American Mathematical Society Decennial Summer Institute in Algebraic Geometry. Seattle, WA.
- 2005, March:** *Landau-Ginzburg A-models*. Invited address, Department of Mathematics, University of Wisconsin.
- 2005, February:** *Stringy K-theory and the Chern character*. Invited address, Department of Mathematics, University of Utah.
- 2002, November:** *Quantum cohomology of the classifying space of a finite group*. Invited address, Department of Mathematics, University of Oregon.

- 2002, July:** *New cohomological field theories arising from quasi-homogeneous polynomials.* Invited address, “Workshop on Frobenius Manifolds, singularities, and quantum cohomology,” Max Planck Institut für Mathematik, Bonn, Germany.
- 2001, November:** *Orbifold quantum cohomology with gravitational descendants for the classifying space of a finite group.* Invited address, Department of Mathematics, Columbia University.
- 2001, May:** *Stable spin maps, Gromov-Witten invariants, and gravitational descendants.* Invited address, “Workshop on Mathematical Aspects of Orbifold String Theory,” Madison, Wisconsin.
- 2001, February:** *Introduction to higher spin curves.* Invited address, Department of Mathematics, University of Southern California.
- 2000, November:** *Stable spin maps, Gromov-Witten invariants, and gravitational descendants.* Invited address, Department of Mathematics, University of Utah.
- 2000, October:** *The moduli space of higher spin maps and quantum cohomology.* Invited address, Workshop in “Algebraic Geometry and Physics,” International Centre for Theoretical Physics, Trieste, Italy.
- 1999, November:** *The generalized Witten conjecture and moduli spaces of higher spin curves.* Invited address, Department of Mathematics, Boston University.
- 1999, September:** *Moduli spaces of higher spin curves and integrable hierarchies.* Invited address, Conference on “Mirror symmetry in string theory,” Centre International de Rencontres Mathématiques, Luminy-Marseilles, France.
- 1998, December:** *Compactification of the universal Picard.* Invited address, Department of Mathematics, University of Utah.
- 1998, September:** *Geometry of the moduli of higher spin curves.* Invited address, International Conference dedicated to L. S. Pontryagin, Moscow State University.
- 1998, August:** *Geometry of the moduli of spin curves.* International Congress of Mathematicians, Berlin.