

CURRICULUM VITAE

Shabnam Beheshti

2007

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EDUCATION: 2007 Ph.D. (spring completion), University of Massachusetts, Amherst, MA, USA.
2002 M.Sc. in Mathematics, Texas Tech University, Lubbock, TX, USA.
M.Sc. Thesis: *Weierstrass Data and Symmetries of Minimal Surfaces*.
2000 B.Sc. in Mathematics, McGill University, Montreal, QC, Canada

Ph.D. THESIS TITLE: Solutions of dilaton field equations with applications to the soliton-black hole correspondence in generalised JT gravity.

THESIS ADVISOR: Prof. Floyd L. Williams.

RESEARCH AREAS: Mathematical Physics, Geometry, and Partial Differential Equations.

AWARDS & HONORS:

- Summer Dissertation Award, Dept. of Mathematics, University of Massachusetts, Amherst, MA 2005.
- Research and Travel Grant, to attend the Congress on Harmonic Maps, Minimal Surfaces & Geometric Flows, Universite de Bretagne Occidentale, Brest, France, July 2002.
- Clay Mathematics Institute Research and Travel Grant, to attend the MSRI/CMI Summer School on the Global Theory of Minimal Surfaces Mathematical Sciences Research Institute, Berkeley, CA, 2001.
- Departmental Scholarship, Dept. of Mathematics, Texas Tech University, Lubbock, TX 2001, 2002.
- Summer Research Assistantship: Surface Theory, Riemannian Geometry Supervisor Professor R. Gornet, Dept. of Mathematics and Statistics, Texas Tech University, Lubbock, TX, 2001, 2002.
- First recipient of the Ali Amir-Moez Prize in Mathematics, Texas Academy of Science, San Marcos, TX 2001
- Undergraduate Research Assistantship: Lie Algebras Supervisor Professor J. Taylor, Dept. of Mathematics and Statistics McGill University, Montreal, Quebec, Canada 1999.
- Hugh Brock Honour's Undergraduate Scholarship, McGill University, Montreal, Quebec, Canada 1996–1997.

LIST OF PUBLICATIONS

1. *Explicit soliton-black hole correspondence for static configurations*,
(with F. Williams), accepted, Journal of Physics A: Mathematical and Theoretical (2007).
2. *Double Bubbles in the Three-Torus*,
(with M. Cárrión Alvarez, J. Cornelli, G. Walsh), J. Exp. Math., Vol. 12, Issue 1 (2003).
3. *Lamé's "Proof" to Fermat's Last Theorem: Introduction to Number Fields*,
abstract printed in Crux Mathematicorum (1997).

TALKS PRESENTED

1. *Classical Strings and Solitons*,
Geometric Relativity and Cosmology Seminar, Department of Mathematics,
University of Massachusetts, Amherst, MA, November 2006.
2. *Some Recent Developments in Two-Dimensional Dilaton Gravity*
AMS Fall Eastern Section Meeting #1021,
University of Connecticut, Storrs, CT, October 2006.
3. *A Simple Black Hole Solves a Complicated Eigenvalue Problem*,
Geometric Relativity and Cosmology Seminar, Department of Mathematics,
University of Massachusetts, Amherst, MA, October 2006.
4. *From Solitons to Dilatons: Relating Sine-Gordon Equations to Two-Dimensional Gravity*
Geometry Seminar, Department of Mathematics and Statistics,
University of Connecticut, Storrs, CT, April 2006.
5. *What do the Munich Olympic Stadium and a Soap Bubble Have in Common?*
Texas Academy of Science Annual Meeting,
Texas A & M University, Laredo, TX, March 2002.
6. *A Survey of Open Problems in Minimal Surfaces*
Texas Academy of Science Annual Meeting,
Texas State University, San Marcos, TX, March 2001.
7. *The Gauss-Bonnet Theorem in Hyperbolic Space*
Canadian Undergraduate Mathematics Conference,
Memorial University, St. John's, Newfoundland, Canada, May 1999.
8. *Number Fields and Lamé's "Proof" of Fermat's Last Theorem*
Canadian Undergraduate Mathematics Conference,
University of British Columbia, Vancouver, British Columbia, Canada, July 1998.
9. *The Sieve of Eratosthenes: Generalizations in Analytic Number Theory*
Group Actions on the Hyperbolic Disc
Various Non-proofs of Fermat's Last Theorem
SUMS Lecture Series, Department of Mathematics and Statistics
McGill University, Montreal, Quebec, Canada, 1997-1999.

MEETINGS ATTENDED

- Invited participant, SMS-NATO Summer School Advanced Study Institute 2007: Hamiltonian Dynamical Systems and Applications, Centre de Recherches Mathematiques, Montreal, Quebec, Canada, Jun 07.
- AMS National Meeting, New Orleans, LA, Jan 07.
- AMS Fall Eastern Section Meeting #1021, University of Connecticut, Storrs, CT, Oct 06.
- International Congress on Harmonic Maps, Minimal Surfaces, & Geometric Flows, Univ. de Bretagne Occidentale, Brest, France, Jul 02.
- Texas Academy of Science, 105th Annual Meeting, Texas A & M Univ., Laredo, TX, Jun 02.
- Texas Geometry and Topology Conference, Texas Tech Univ., Lubbock, TX, Apr 02.
- Clay Mathematics Institute Workshop on the Global Theory of Minimal Surfaces, Mathematical Sciences Research Institute, Berkeley, CA, Jun-Jul 01.
- Texas Academy of Science, 104th Annual Meeting, Texas State Univ., San Marcos, TX, Jun 01.
- CMS Summer Meeting/Canadian Undergraduate Mathematics Conference (CUMC), Memorial Univ. of Newfoundland, St. John's, NL, Canada, May 99.
- CUMC, Univ. of British Columbia, BC, Canada, Jul 98.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- American Mathematical Society (01-present)
- Association for Women in Mathematics (00-present)
- Society for Industrial and Applied Mathematics (00-02)
- Canadian Mathematical Society (97-00).

TEACHING EXPERIENCE - COURSES TAUGHT

2002–2006 University of Massachusetts, Amherst

- Math 131 Lecture *Calculus I for Sciences and Engineering*.
- Math 132 Lecture *Calculus II for Sciences and Engineering*.
- Math 100 Lecture *Fundamentals of Mathematics*.
- Math 131 Recitation *Calculus I for Sciences and Engineering*.
- Math 132 Recitation *Calculus II for Sciences and Engineering*.
- Math 331 Recitation *Differential Equations*.

2000–2002 Texas Tech University

- Mathematics 0301A Lecture *Essential Mathematics/Algebra I*.
- Mathematics 0302A, B Multimedia *Essential Mathematics/Algebra II*.
- Mathematics 2300 Lecture *Introduction to Statistical Methods*.
- Mathematics 2345 Recitation *Statistics for Business*.

EDUCATIONAL ACTIVITIES

2002–2006 University of Massachusetts, Amherst

- Geometric Relativity and Cosmology Seminar, organizer.
- Functional Analysis Graduate Reading Seminar .
- Graduate Student Seminar (organizer, jointly with C. Oh).
- Grader for General Topology 671, Linear Algebra 235.

2000–2002 Texas Tech University

- Fulbright Competition Finalist, (1st rank in University).
- Geometry and Complex Analysis Seminar.
- Instructor, Texas Academy of Science Summer Honours Camp.

1996–1999 McGill University

- Centre de Recherches Mathematiques (CRM) Graduate Lecture Series
Survey of Sieve Methods in Analytic Number Theory, Professor R. Murty
Universite de Montreal, Montreal, Quebec, Canada (1999)
- Society of Undergraduate Mathematics Students (SUMS),
President (1998-1999), VP External (1997-1998).
- SUMS Lecture Series, organizer and lecturer (1997-1999).
- Department of Mathematics and Statistics,
Undergraduate Affairs Committee, Leo Yaffe Teaching Excellence Committee (1997-1999).
- Grader in Department of Mathematics and Statistics,
189-112A, B *Fundamentals of Mathematics*
189-139A, B *Calculus I, II*
189-338A *History and Philosophy of Mathematics*
189-316A *Complex Variables*

ADDITIONAL INFORMATION

- Languages: Can write, read, and speak French – intermediate.
- Computer skills: \LaTeX , Maple, Mathematica, Matlab, C++, Turbo Pascal.
- GRE Marks: Verbal 640 (91%) Quantitative 800 (99%) Analytical 800 (99%).

REFERENCES

- Professor Floyd L. Williams, University of Massachusetts, Amherst, MA.
- Professor Andrea Nahmod, University of Massachusetts, Amherst, MA.
- Professor Robert Kusner, University of Massachusetts, Amherst, MA.
- Professor Roger Barnard, Texas Tech University, Lubbock TX.
- Professor Harold Bennett, Texas Tech University, Lubbock TX.
- Professor Ruth Gornet, University of Texas, Arlington, TX.
- Professor Jeffrey Lee, Texas Tech University, Lubbock TX.