

Ji Li

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Birth place and citizenship

1975 Birth place: Zhenjiang, China
Citizenship: China. (Permanent resident application in process.)

Employment

2007 - *Postdoc*, [Arizona Teacher Initiative](#), [Institute of Mathematics and Education](#), The University of Arizona, Tucson, Arizona, USA.

Education

2002 - 2007 *PhD* in Mathematics, Brandeis University, Waltham, Massachusetts, USA.
Dissertation: "Counting point-determining graphs and prime graphs".
Thesis advisor: Professor Ira Gessel

1990 - 1994 *B.S.* in Mathematics, Nankai University, Tianjin, China.

Teaching

POSTDOC FOR ARIZONA TEACHER INITIATIVE AT THE UNIVERSITY OF ARIZONA

2007 [Calculus I \(Math 124\)](#)
2008 [Calculus II \(Math 129\)](#)
2009 [Introduction to linear algebra \(Math 215\)](#)
2009 [Vector calculus \(Math 223\)](#)
2009 [Combinatorial mathematics for undergraduate and graduate students \(Math 447/547\)](#)
2009 & 2008 [Algebra for middle school teachers \(Math 505c\)](#)
2009 [Number senses for middle school teachers \(Math 505e\)](#)

TEACHING FELLOW AT BRANDEIS UNIVERSITY

- 2003 Precalculus mathematics (Math 5a)
- 2005 Introduction to probability and statistics (Math 8a)
- 2004 & 2005 Techniques of calculus (a) (Math 10a)
- 2004 Techniques of calculus (b) (Math 10b)

Research interests

General area: Enumerative combinatorics and Algebraic combinatorics. More specifically, I study the combinatorial theory of species which involves Pólya's enumeration theory and symmetric functions for enumeration of graphs.

Papers

- (with I. M. Gessel) "Enumeration of point-determining graphs", in preparation.
- 2008 "Prime graphs and exponential composition of species", *J. Combin. Theory Ser. A* **115** (2008) 1374–1401.

Service to the profession

ACTIVITIES WITH MIDDLE SCHOOL AND HIGH SCHOOL TEACHERS

- 2008 - *Facilitator* of [Tucson Teachers' Circle](#), Institute of Mathematics and Education, The University of Arizona.
- 2007 - *Mentor* for ATI Math Specialist, Arizona Teacher Initiative, Institute of Mathematics and Education, The University of Arizona.

ACTIVITIES WITH TEACHING FELLOWS

- 2004 - 2006 *Teaching Coach* in the Extended Apprenticeship Program, Department of Mathematics, Brandeis University.
- 2004 - 2007 *Tutoring Mentor* for the Department of Mathematics, Brandeis University.
- 2003 - 2004 *Graduate Representative*, Department of Mathematics, Brandeis University.

ORGANIZATIONAL ACTIVITIES

- 2008 - *Facilitator* of Tucson Teachers' Circle, Institute of Mathematics and Education, The University of Arizona.
- 2008 - *Organizer* of Mathematics Instruction Colloquium, Department of Mathematics, The Univer-

sity of Arizona.

2003 - 2004 *Organizer* of Graduate Seminar, Department of Mathematics, Brandeis University.

OTHER ACTIVITIES

2008 - 2009 *Guest speaker* at the University Teaching Assistant Seminars, Department of Mathematics, The University of Arizona.

2006 *Contributor* to the Solutions Manual of Calculus: Early Transcendental Functions by Smith and Minton, 3rd edition.

2005 - 2007 *Mathematics Tutor* in the [Transitional Year Program](#), Brandeis University.

Talks & conferences

SELECTED MATHEMATICS TALKS

2009 “Fibonacci compositions”, *CombinaTexas*, The University of Houston.

2008 “Enumerating with species theory”. *CombinaTexas*, University of Texas at El Paso.

2007 “Cartesian product of graphs and automorphism groups of prime powers”, *Group Theory Seminar*, The University of Arizona.

2007 “A bijection for counting bi-point-determining graphs”, *Combinatorics Seminar*, Brandeis University.

2007 “Arithmetic product of species and Cartesian product of graphs”, *MIT Combinatorics Seminar*, Massachusetts Institute of Technology.

2007 “Counting point-determining graphs using Joyal’s theory of species”, *Joint Mathematics Meetings*, New Orleans.

SELECTED MATHEMATICS EDUCATION TALKS

2010 “An algebra course for middle school teachers”, *Joint Mathematics Meetings*, San Francisco.

2009 “Ropin’ in the mathematics”, *Middle School Teachers’ Circle*, *Tucson Teachers’ Circle*, Institute of Mathematics and Education, The University of Arizona.

2008 “Smith college diploma problem”, *University Teaching Assistant Seminar*, The University of Arizona.

2007 “Not only about mathematics tutoring”, *Mathematics Instruction Colloquium*, The University of Arizona.

CONFERENCES ATTENDED

2010 Joint Mathematics Meetings, San Francisco.

2009 CombinaTexas, The University of Houston

2009 Joint Mathematics Meetings, Washington DC.

2008 CombinaTexas, University of Texas at El Paso.

2007

Joint Mathematics Meetings, New Orleans.

2004

Retrospective in Combinatorics: Honoring Stanley's 60th Birthday, MIT.

Skills

Computer: Mac. Windows. L^AT_EX. Maple. Matlab. Xfig. Microsoft Office. iWork.

Language: Native speaker in Chinese. Fluent in English. Basic knowledge of French.

References

Ira M Gessel

(Ph.D. dissertation advisor)

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Theodore W Laetsch

((Former) supervisor of teaching postdoc)

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