

# Martha Yip

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## Education

UNIVERSITY OF WISCONSIN - MADISON 2006 - present  
Ph.D. expected May 2010  
Advisor: Arun Ram  
Research interests: combinatorics, representation theory, symmetric functions  
Thesis: Combinatorics of Macdonald polynomials

UNIVERSITY OF WATERLOO 2004 - 2006  
Masters of Mathematics  
Advisor: David M. Jackson  
Thesis: Genus one partitions

Bachelor of Mathematics (with Distinction) 1999 - 2004  
Double honours in Applied Mathematics and Pure Mathematics

## Work Experience

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF WISCONSIN - MADISON Sep 2009 - present  
*Research Assistant* Sep - Dec 2008  
Advisor: Amos Ron  
Project: Modulation splines

DEPARTMENT OF MATHEMATICS AND STATISTICS, UNIVERSITY OF MELBOURNE Mar - Aug 2009  
*Fellow*

DEPARTMENT OF MATHEMATICS, UNIVERSITY OF WISCONSIN - MADISON Sep 2006 - Aug 2008  
*Teaching Assistant*  
Summer 2008 - Calculus 2  
Fall 2007- Calculus 1 with Algebra and Trigonometry  
Spring 2007 - Calculus 3  
Fall 2006 - Calculus 2

MATHEMATICAL SCIENCES RESEARCH INSTITUTE, BERKELEY Jan - May 2008  
*Program Associate*

DEPARTMENT OF MATHEMATICS, UNIVERSITY OF WATERLOO Sep 2004 - Apr 2006  
*Teaching Assistant*  
Winter 2006 - Calculus 2 for Sciences  
Fall 2005 - Calculus 1 for Sciences  
Summer 2005 - Applied Linear Algebra 2  
Winter 2005 - Calculus 2 for Honours Math  
Fall 2004 - Calculus 1 for Honours Math

DEPARTMENT OF COMBINATORICS & OPTIMIZATION, UNIVERSITY OF WATERLOO <i>Research Assistant</i> Advisor: David M. Jackson Project: Algebraic enumeration	Jul - Aug 2004 May - Aug 2003
DEPARTMENT OF COMBINATORICS & OPTIMIZATION, UNIVERSITY OF WATERLOO <i>Research Assistant</i> Advisor: L. Bruce Richmond Project: Asymptotic enumeration and number theory	May - Aug 2002
SYMBOLIC COMPUTATION GROUP, UNIVERSITY OF WATERLOO <i>Programmer</i> Supervisor: Keith O. Geddes Project: Conversion of special functions to hypergeometric functions	Jan - Apr 2002 May - Aug 2001
ISOPIA INTERACTIVE INC. / SUN MICROSYSTEMS, TORONTO, ONTARIO <i>Program Developer</i>	Sep - Dec 2000

## Awards and Scholarships

National Sciences and Engineering Research Council of Canada Postgraduate Scholarship D	2008-2010
Supplementary Research Grant, University of Wisconsin - Madison	2008
National Sciences and Engineering Research Council of Canada Postgraduate Scholarship M	2004-2006
President's Graduate Scholarship, University of Waterloo	2004-2006
Provost Scholarship, University of Waterloo	2005
Doreen Brisbin Award, University of Waterloo	2003
National Sciences and Engineering Research Council Undergraduate Student Research Award	2002, 2003
R.A. Wentzell Memorial Award, University of Waterloo	2001
René Descartes Scholarship, University of Waterloo	1999
Governor General's Academic Bronze Medal	1999

## Publications and Preprints

1. M. Yip. *A Littlewood-Richardson rule for Macdonald polynomials*, [in preparation].
2. A. Ram, M. Yip. *A combinatorial formula for Macdonald polynomials*, [submitted].
3. D.M. Jackson, M. Yip. *A symmetric function resolution of the number of permutation with respect to block-stable elements*, Ann. Comb. **10**, (2006), 463–480.
4. D. Panario, L.B. Richmond, M. Yip. *A simple primality test and the  $r$ th smallest prime factor*, SIAM Proceedings Series **115**, (2004) 185–193.

## Talks

1. *A Littlewood-Richardson rule for Macdonald polynomials*. Student combinatorics seminar, University of Michigan, October 2009.
2. *A Littlewood-Richardson rule for Macdonald polynomials*. Combinatorics seminar, University of Wisconsin - Madison, September 2009.

3. *Alcove walks and Macdonald polynomials*. CMS algebraic combinatorics session, Memorial University, June 2009.
4. *A Littlewood-Richardson rule for Macdonald polynomials*. Pure maths seminar, University of Melbourne, May 2009.
5. *Combinatorics of Shi arrangements*. Graduate student combinatorics conference, University of California - Davis, April 2008.
6. *Shi regions and bases of polynomial representations*. Combinatorics seminar, University of Wisconsin - Madison, December 2007.
7. *Noncrossing and nonnesting partitions*. Lie theory seminar, University of Wisconsin - Madison, March 2007.
8. *Permutations with respect to block-stable elements*. Undergraduate research seminar, University of Waterloo, August 2003.
9. *Counting polyominoes*. Canadian undergraduate mathematics conference, York University, May 2003.
10. *The size of the  $r$ th smallest prime factor*. Undergraduate research seminar, University of Waterloo, August 2002.