

WAI LING YEE

Office:

Department of Mathematical and Statistical Sciences
632 Central Academic Building
University of Alberta
Edmonton, AB T6G 2G1
CANADA
(780) 492-8757

Home:

8510 111 St. Apt. 314
Edmonton, AB T6G 2G1
CANADA
(780) 435-2582

Citizenship: Canadian

E-mail: wlyee@math.ualberta.ca

Webpage: <http://www.math.ualberta.ca/~wlyee/>

Education

September 2004-present:

University of Alberta, Edmonton, Alberta, Canada.

NSERC and Honourary Killam Postdoctoral Fellow.

Supervisor: Arturo Pianzola

September 2000-May 2004:

Massachusetts Institute of Technology, Cambridge, MA.

Ph.D. in Pure Mathematics in the field of Representation Theory

Awarded: June 2004.

Thesis title: On the Signature of the Shapovalov Form.

Advisor: David A. Vogan, Jr.

September 1996-August 2000:

University of Waterloo, Waterloo, Ontario, Canada.

Hon. B. Math. in Pure Mathematics and Computer Science, Double Major.

Awarded: October 2000.

Advisor: Kathryn E. Hare

Current Interests

Representation theory: unitarizability of representations of Lie groups, Category \mathcal{O} , combinatorial aspects

Awards and Honours

Honorary Killam Postdoctoral Fellowship, 2004-present

NSERC Postdoctoral Fellowship, 2004-present

NSERC Postgraduate Scholarship with tenure abroad, 2000-2004

MIT Presidential Fellowship, 2000-2001

Frank and Brennie Morgan Prize: Honourable Mention, 2000

AMS-MAA-SIAM award for outstanding research in mathematics by an undergraduate student

Elizabeth Lowell Putnam Prize, 1999

Awarded to top female competitor in the Putnam Mathematics Competition

Putnam Mathematics Competition: 23.5th place, 1999

J. Wesley Graham National Scholarship, 1996-2000

Largest scholarship offered by the University of Waterloo at time of entrance

Descartes Mathematics Contest, University of Waterloo: Second in Canada, 1996

USA Mathematical Olympiad: Third in Canada, 1995

Fermat Mathematics Contest, University of Waterloo: Second in Canada, 1994

Selected Publications

- [1] Hare, Kathryn E., Wilson, David C., and Yee, Wai Ling, *Pointwise Estimates of the Size of Characters of Compact Lie Groups*, Journal of the Australian Mathematics Society Series A **69** (2000), no. 1, 61–84.
- [2] Hare, Kathryn E. and Yee, Wai Ling, *The Singularity of Orbital Measures on Compact Lie Groups*, Revista Math. Iberoamericana **20** (2004), no. 2, 517–530.
- [3] Yee, Wai Ling, *The Signature of the Shapovalov Form on Irreducible Verma Modules*, Representation Theory **9** (2005), 638–677.
- [4] Yee, Wai Ling. *Signatures of Invariant Hermitian Forms on Irreducible Highest Weight Modules*, 19 pages. Submitted (Duke Mathematical Journal).

Selected Talks

Massachusetts Institute of Technology–Unitary Representations Seminar, October 2005.
Signatures of Invariant Hermitian Forms on Irreducible Highest Weight Modules.

Cornell Univeristy–Lie Groups Seminar, October 2005.
Signatures of Invariant Hermitian Forms on Irreducible Highest Weight Modules.

Atlas of Lie Groups and Representations, American Institute of Mathematics, Palo Alto, California, July 2005.
Signatures of Invariant Hermitian Forms.

Canadian Mathematical Society Summer 2005 Meeting, University of Waterloo, Waterloo, Canada, June 2005.
Signatures of Invariant Hermitian Forms.

Fifth Annual North-South Dialogue in Mathematics, Grant McEwan College, Edmonton, Canada, April 2005.
Signatures of Invariant Hermitian Forms.

University of Alberta – Algebra Seminar, October 2004.
The Signature of the Shapovalov Form.

The Coxeter Legacy: Reflections and Projections, Fields Institute, Toronto, Canada, May 2004.
The Affine Weyl Group and the Signature of the Shapovalov Form.

MIT – Graduate Student Representation Theory Seminar, September 2003.
The Dynkin-Kostant Classification of Nilpotent Orbits.

MIT – Graduate Student Representation Theory Seminar, April 2003.
Introduction to Cohomological Induction.

MIT – Graduate Student Representation Theory Seminar, September 2002.
Introduction to Lie Algebra Cohomology.

University of Waterloo – Pure Mathematics Analysis Seminar, March 2000.
The Singularity of Orbital Measures on Lie Groups.

Teaching Experience

- Winter 2005 **Lecturer**, *Linear Algebra II*, University of Alberta:
Second year linear algebra for non-mathematics majors. Responsible for designing and giving lectures, assignments, and examinations.
- Fall 2004 **Instructor**, *Putnam mathematics competition*, University of Alberta:
Assisted with student training.
- Summer 2004 **Speaker**, *CMS/ESSO Regional Summer Mathematics Camp*, University of Alberta:
Regional mathematics camp for high school students.
- Summer 2003 **Lecturer**, *Linear Algebra*, MIT:
Fully responsible for second half of introductory course for non-mathematics majors.
- 1998-2000, 2003 **Instructor and house parent**, *Canadian Junior International Mathematical Olympiad Training Camp (also known as the Canadian National ESSO Mathematics Camp)*, University of Waterloo and University of Western Ontario:
Taught and lived with young high school students who were potential members of Canada's math olympiad team.
- Spring 2003 **Recitation instructor**, *Linear Algebra*, MIT:
Lead problem solving sessions, gave short lectures, graded assignments, and held office hours.
- Fall 2001 **Grader**, *Introduction to Lie Algebras*, MIT:
Graduate course in representation theory.
- Summer 1999 **Co-organizer**, *Learning Seminar in Continuous Optimization*, University of Waterloo:
Lectured and designed problem sets.
- Summer 1998 **Co-organizer**, *Learning Seminar in Convex Analysis*, University of Waterloo

Leadership Experience

- Organizer MIT Graduate Student Representation Theory Seminar, 2002-2003
- Treasurer MIT Lindy Hop Society, 2003-2004
- Captain Mathematics Department hockey team, 2003-2004
- Vice-President University of Waterloo Computer Science Club, 1998

Other Professional Experience

Member of NSF-funded Atlas of Lie Groups research group: <http://atlas.math.umd.edu>

Centro Internazionale Matematico Estivo (CIME) summer school: *Representation Theory and Complex Analysis*, Venice, June 2004.

References

- Prof. David A. Vogan, Jr. dav@math.mit.edu
Prof. Pavel I. Etingof etingof@math.mit.edu
Prof. Arthur P. Mattuck apm@math.mit.edu