O-YEAT CHAN

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Positions Held

School of Mathematical and Physical Sciences, University of Newcastle, Australia
 2009–2010   CARMA Postdoctoral Researcher
      Supervisor: Jonathan M. Borwein

Department of Mathematics and Statistics, Dalhousie University, Canada
 2007–2009   NSERC Postdoctoral Fellow
 2006–2007   Postdoctoral Fellow
      Supervisors: Jonathan M. Borwein and Karl Dilcher

Education and Qualifications

November 2011   Society of Actuaries
                Passed Examinations P/1, FM/2, MFE/3F, and C/4.

May 2006   Ph. D. in Mathematics, University of Illinois at Urbana-Champaign,
           Urbana, Illinois, USA.
                Thesis: Investigations into cranks of partitions, trigonometric sums,
                        and q-integrals.
                Supervisor: Bruce C. Berndt.

June 2003   Certified General Accountants of Canada
            Completed all academic requirements for the CGA designation.

December 2001   M. S. in Mathematics, University of Illinois at Urbana-Champaign,
                Urbana, Illinois, USA.

May 2000   B. Sc. (Honours) in Mathematics, Physics, and Astronomy,
           University of British Columbia, Vancouver, British Columbia, Canada.
                Thesis: Quantum amplitudes in $2+1$ dimensional simplicial gravity.
                Supervisor: Kristin Schleich.

Research Interests

- Combinatorial and analytic number theory.

    - Special functions and q-analogues; zeta functions, zeta values and polylogarithms.
    - Partitions, q-series, and theta functions.

- Computational and experimental number theory.

- Elementary number theory, recreational mathematics.

Publications

1. O-Y. Chan and D. V. Manna, *A new q-analogue for Bernoulli numbers*, (2011), 20 pp. Submitted.
   Preprint available at `http://www.oyeat.com/pubs.html`

2. O-Y. Chan and P. Prałat, *Chipping away at the edges: how long does it take?*, (2010), 16 pp. Submitted.
   Preprint available at `http://www.oyeat.com/pubs.html`

3. J. M. Borwein, O-Y. Chan, and R. Crandall, *Higher-dimensional box integrals*, Exp. Math. **19** (2010), no. 4, 431–446.

4. O-Y. Chan and D. V. Manna, *Congruences for Stirling numbers of the second kind*, in *Gems in Experimental Mathematics*, Contemporary Math. **517**, Amer. Math. Soc., (2010), 97–111.

5. J. M. Borwein and O-Y. Chan, *Duality in tails of multiple zeta values*, Int. J. Number Theory **6** (2010), no. 3, 501–514.

6. J. M. Borwein and O-Y. Chan, *Uniform bounds for the complementary incomplete gamma function*, Math. Ineq. Appl. **12** (2009) 115–121.

7. D. Borwein, J. M. Borwein, and O-Y. Chan, *The evaluation of Bessel functions via exp-arc integrals*, J. Math. Anal. Appl. **341** (2008) 478–500.

8. B. C. Berndt, O-Y. Chan, S.-G. Lim, A. Zaharescu, *Questionable claims found in Ramanujan's Lost Notebook*, in *Tapas in Experimental Mathematics*, T. Amdeberhan and V. Moll, eds., Contemporary Math. **457**, Amer. Math. Soc., (2008) 69–98.

9. O-Y. Chan, *Weighted trigonometric sums over a half-period*, Adv. in Appl. Math. **38** (2007), no. 4, 482–504.

10. O-Y. Chan and J. Smoak, *More designer decimals: the integers and their geometric extensions*, College Math. J. **37** (2006), no. 5, 355–363.

11. M. Beck, B. C. Berndt, O-Y. Chan, and A. Zaharescu, *Determinations of analogues of Gauss sums and other trigonometric sums*, Int. J. Number Theory **1** (2005), no. 3, 333–356.

12. O-Y. Chan, *Some asymptotics for cranks*, Acta Arith. **120** (2005), no. 2, 107–143.

13. O-Y. Chan, G. Choi, and A. Zaharescu, *A Multidimensional Version of a Result of Davenport-Erdös*, J. Integer Seq. **6** (2003), no. 2, Article 03.2.6, 9 pp.

Professional and Service Activities

2005–present   Referee for:

- Canadian Mathematical Bulletin
- The Ramanujan Journal
- The International Journal of Number Theory
- Journal of Computational and Applied Mathematics
- Journal of the London Mathematical Society
- Journal of Mathematical Analysis and Applications
- American Mathematical Monthly
- Mathematics Magazine
- Integers: Electronic Journal of Combinatorial Number Theory
- The Missouri Journal of Mathematical Sciences

2009–2010   Organizer of the Analysis and Number Theory Seminar at the University of Newcastle.

2007–2009   Coach of the Dalhousie teams for the Putnam and APICS (Atlantic ProvInces Council on the Sciences) mathematics competitions.

2006–2009   Co-organizer of the Analysis and Number Theory Seminar at Dalhousie University (with Rob Noble (2008–2009) and Dante Manna (2006–2008)).

2008   Book Reviewer for CMS Notes.

2007   Lecturer for CMS Math Camp, Dalhousie University.

2007   Lecturer for Dalhousie Math Circles, a seminar for high-school students.

1999–2000   Examinations Coordinator for the University of British Columbia Math Club.

1998–1999   Treasurer for the University of British Columbia Math Club.

Invited Talks

June 2011   University College Dublin, Dublin, Ireland.

May 2011   Workshop on Computational and Analytical Mathematics in Honour of Jon Borwein's 60th Birthday, Simon Fraser University, Burnaby, British Columbia.

August 2009   CARMA Workshop on Multidimensional Numerical Integration and Special Function Evaluation, University of Newcastle, Callaghan, Australia.

January 2009   Special Session on Experimental Mathematics, AMS National Meeting, Washington D.C.

June 2008   Mathematics Seminar, University of Newcastle, Callaghan, Australia.

November 2007   UBC/SFU Number Theory Seminar, Simon Fraser University, Burnaby, British Columbia.

April 2006   Special Session on Special Functions, AMS Sectional Meeting, University of Notre Dame, Notre Dame, Indiana.

March 2006   York University, Toronto, Ontario.

November 2004   Conference on Additive Number Theory, University of Florida, Gainesville, Florida.

(Also gave talks at the CARMA Seminar, University of Newcastle, September 2009, Canadian Number Theory Association X Meeting, July 2008, Bluenose Numerical Analysis Day, July 2007, Illinois Number Theory Fest, May 2007, Canadian Number Theory Association IX Meeting, July 2006, Dalhousie University Analysis and Number Theory Seminar, 2006–2008, and at the University of Illinois Math Department Analytic Number Theory Seminar, 2003–2006)

Teaching Experience

University of Newcastle

Sem. 2, 2009	Lecturer and Tutor for Math 1110, Mathematics I (First-year calculus and algebra)

Dalhousie University

Fall 2008	Instructor for Math 3070, Theory of Numbers
Summer 2007	Instructor for Math 2002, Intermediate Calculus II
Spring 2007	Instructor for Math 2113, Discrete Structures II
Fall 2006	Instructor for Math 2112, Discrete Structures I

University of Illinois

2002–2006 (5 semesters)	TA for Math 117 Discussion Sections, Elementary Mathematics for Pre-service Teachers
Summer 2004	Instructor for Math 234, Calculus for Business I
Fall 2001, 2003	TA for Math 234, Calculus for Business I, Discussion Sections
Spring 2002	Instructor for Math 230, Calculus II
Spring 2001	TA for Math 220, Calculus I, Discussion Sections
Fall 2000	Grader for Math 213, Discrete Mathematics and Math 417, Introduction to Abstract Algebra

University of British Columbia

Spring 2000 Fall 1999	Grader for Math 300, Introduction to Complex Variables
Spring 1999	Grader for Math 317, Calculus IV
Fall 1998	Grader for Math 100, Calculus I

Awards and Honours

2007–2009	Postdoctoral Fellowship
	Natural Sciences and Engineering Research Council of Canada
2006–2008	Pre-approved for the Industrial Research and Development Fellowship
	Natural Sciences and Engineering Research Council of Canada
2006	Bateman Prize in Number Theory
	University of Illinois
2004–2005	Arnold O. Beckman Research Assistantship
	University of Illinois Research Board
2004	Nominated for the University of Illinois Department of Mathematics TA Instructional Award
1996–98; 99–00	Dean's Honour List
	University of British Columbia
1999	Undergraduate Student Research Award
	Natural Sciences and Engineering Research Council of Canada
1999	Lawrence Roberts Putnam Prize
	University of British Columbia
1998	Golden Key International Honor Society

Other Skills

- Proficient with computer algebra systems, including Maple, Mathematica, PARI/GP, and Magma.

- Fluent in English and Cantonese, excellent command of Mandarin, reading knowledge of Japanese, French, and German.

- Experience in software development using Visual Basic.NET and C++ under wxWidgets.