

CURRICULUM VITAE

Jeremy Lovejoy

- Citizenship: American
- Date of Birth March 7,1972
- Place of Birth: Escanaba, Michigan, USA
- Current Position: CR1, CNRS, LIAFA, Université Paris VII

Education

- Ph.D. Mathematics, Pennsylvania State University, August 2000
- Thesis Title: Arithmetic Properties of Combinatorial Functions
- Advisors : George Andrews and Ken Ono
- B.S., Mathematics, Virginia Tech, May 1994

Research Interests

- Partitions and q -series
- Modular Forms and Number Theory
- Combinatorics

Publications

- Ramanujan Type Congruences for Three-Colored Frobenius Partitions, *J. Number Theory* **86** (2000), 283-290.
- The Divisibility and Distribution of Partitions into Distinct Parts, *Adv. Math.* **158** (2001), 253-263.
- 3-regular Partitions and a Modular K3 Surface (with David Penniston), *Contemp. Math.* **291** (2001), 177-182.
- The Arithmetic of the Number of Partitions into Distinct Parts (with Scott Ahlgren), *Mathematika* **48** (2001) 203-211.
- Frobenius Partitions and the Combinatorics of Ramanujan's ${}_1\psi_1$ summation (with Sylvie Corteel), *J. Combin. Theory Ser. A* **97** (2002), 177-183.
- Extension of Ramanujan's Congruences for the Partition Function Modulo Powers of 5 (with Ken Ono), *J. reine angew. math.* **542** (2002), 123-132.
- Lacunary Partition Functions, *Math. Res. Lett.* **9** (2002), 191-198.
- Partitions with Designated Summands (with George Andrews and Richard Lewis), *Acta Arithmetica* **105** (2002), 51-66.
- The Number of Partitions into Distinct Parts Modulo Powers of 5, *Bull. London Math. Soc.* **35** (2003), 41-46.

- Hypergeometric Generating Functions for Dirichlet and Other L-Functions (with Ken Ono), *Proc. Nat. Acad. Sci. USA* **vol. 100 no. 12** (2003), 6904-6909.
- Gordon's Theorem for Overpartitions, *J. Combin. Theory Ser. A* **103** (2003), 393-401.
- More Lacunary Partition Functions, *Illinois J. Math.* **47** (2003), 769-773.
- Overpartitions (with Sylvie Corteel), *Trans. Amer. Math. Soc.* **356** (2004), 1623-1635.
- A Bailey Lattice *Proc. Amer. Math. Soc.* **132** (2004), 1507-1516.
- Overpartitions and Real Quadratic Fields, *J. Number Theory* **106** (2004), 178-186.
- Overpartition Theorems of the Rogers-Ramanujan Type *J. London Math. Soc.* **69** (2004), 562-574.
- Overpartitions and Generating Functions for Generalized Frobenius Partitions (with Sylvie Corteel and Ae Ja Yee), *Trends in Mathematics, Mathematics and Computer Science III: Algorithms, Trees, Combinatorics, and Probabilities (Birkhauser)* (2004) 15-24.
- Rank and Conjugation for the Frobenius Representation of an Overpartition, *Ann. Comb.* **9** (2005), 321-334.
- A Theorem on Seven-Colored Overpartitions and its Applications, *Int. J. Number Theory.* **1** (2005), 215-224.
- An Iterative-Bijective Approach to Generalizations of Schur's Theorem (with Sylvie Corteel), *Europ. J. Comb.* **27** (2006), 496-512.
- Overpartition Pairs, *Ann. Inst. Fourier* **56** (2006), 781-794.
- Constant Terms, Jagged Partitions, and Partitions with Difference Two at Distance Two, *Aequationes Math.* **72** (2006), 299-312.
- Partitions and overpartitions with attached parts, *Arch. Math.* **88** (2007), 316-322.
- Dyson's rank, overpartitions, and Maass forms (with Kathrin Bringmann), *Int. Math. Res. Not.* (2007), rnm063.
- Overpartition pairs and two classes of basic hypergeometric series (with Olivier Mallet), *Adv. Math.* **217** (2008), 386-418.
- Rank and conjugation for a second Frobenius representation of an overpartition, *Ann. Comb.* **12** (2008), 101-113.
- Rank and congruences for overpartition pairs (with Kathrin Bringmann), *Int. J. Number Theory* **4** (2008), 303-322.
- An extension to overpartitions of the Rogers-Ramanujan identities for even moduli (with Sylvie Corteel and Olivier Mallet), *J. Number Theory* **128** (2008), 1602-1621.
- Rank differences for overpartitions (with Robert Osburn), *Quart. J. Math. (Oxford)* **59** (2008) 257-273.
- n -color overpartitions, twisted divisor functions, and Rogers-Ramanujan identities (with Olivier Mallet) (G.E. Andrews' 70th birthday issue) **6** (2008), 23-36.
- Overpartitions and class numbers of binary quadratic forms (with Kathrin Bringmann), *Proc. Nat. Acad. Sci. USA* **106** no. 14 (2009), 5513-5516.
- Rank and crank moments for overpartitions (with Kathrin Bringmann and Robert Osburn), *J. Number Theory* **129** no. 7 (2009), 1758-1772.
- Overpartitions and the q -Bailey identity (with Sylvie Corteel), *Proc. Edinburgh Math. Soc.* **52** (2009), 297-306 .
- Partitions weighted by the parity of the crank (with Dohoon Choi and Soon-Yi Kang), *J. Combin. Theory Ser. A* **116** (2009), 1034-1046 .
- M_2 -rank differences for partitions without repeated odd parts (with Robert Osburn), *J. Théor.*

Nombres Bordeaux **21** no. 2 (2009), 313-334.

- Automorphic properties of generating functions for generalized rank moments and Durfee symbols (with Kathrin Bringmann and Robert Osburn), *Int. Math. Res. Not.* (2010), rnp131.
- On identities involving sixth order mock theta functions, *Proc. Amer. Math. Soc.* **138** (2010), 2547-2552.
- M2-rank differences for overpartitions (with Robert Osburn), *Acta Arithmetica* **144** (2010), 193-212.
- Partitions with rounded occurrences and attached parts, *Ramanujan J.* **23** (2010), 307-313.
- Quadratic forms and four partition functions modulo 3 (with Robert Osburn), *Integers* **11** (2011), 47-53.
- On the modularity of the unified WRT invariants of certain Seifert manifolds (with Kathrin Bringmann and Kazuhiro Hikami), *Adv. Appl. Math.* **46** (2011), 86-93.
- Automorphic properties of generating functions for generalized odd rank moments and odd Durfee symbols (with Claudia Alfes and Kathrin Bringmann), *Math. Proc. Cambridge Phil. Soc* **151** (2011), 385-406.
- ℓ -adic properties of smallest parts functions (with S. Ahlgren and K. Bringmann), *Adv. Math.* **228** (2011), 629-645.
- Ramanujan-type partial theta functions and conjugate Bailey pairs, *Ramanujan J.*, to appear.

Conferences With Invited Presentations

- October 2000, The Combinatorics of Ramanujan's ${}_1\psi_1$ and the q -Gauss ${}_2\phi_1$ summation, q -series with Applications to Combinatorics, Number Theory, and Physics, University of Illinois, Urbana, IL.
- March 2001, The Arithmetic of the Number of Partitions into Distinct Parts, AMS Spring Southeastern Section Meeting, University of South Carolina, Columbia, SC.
- August 2001, q -series Identities, The Life and Legacy of Ramanujan, MAA MathFest Short Course, University of Wisconsin, Madison, WI.
- May 2003, Gordon's Theorem for Overpartitions, AMS Spring Sectional Meeting, San Francisco State University, San Francisco, CA.
- February 2004, Overpartition Analogues of Classical Families of Partition Theorems, Conference on Paths, Permutations, and Trees, Nankai University, Tianjin, China.
- November 2004, Extending Partition Theorems of Schur and Göllnitz to Overpartitions, Additive Number Theory, Gainesville, FL.
- January 2006, Constant terms, jagged partitions, and partitions with distance two at distance two, Workshop of Combinatorics on q -series and Partitions, Lyon, France.
- June 2006 Overpartition pairs, lattice paths, and Andrews' well-poised basic hypergeometric series, International conference on number theory, KIAS, Seoul, Korea.
- December 2008, Andrews' generalization of Selberg's q -difference equations, Combinatory Analysis 2008: Partitions, q -series, and Applications.
- May 2009, q -series and class numbers, Mock theta functions and applications in combinatorics, algebraic geometry, and mathematical physics, Max Planck Institute, Bonn, Germany.
- March 2011, Congruences for smallest parts functions, Modular Forms and Mock Modular Forms and their Applications in Arithmetic, Geometry and Physics, Trieste, Italy.

- March 2012, TBA, Symposium on Modular Forms, Mock Theta Functions, and Applications, Cologne, Germany.

Conferences With Competitive Submissions

- November 2001, Frobenius Partitions and Basic Hypergeometric Series, GasCOM 2001, University of Siena, Siena, Italy.
- June 2003, Overpartitions (with Sylvie Corteel), FPSAC, Sweden.
- September 2004, Overpartitions and Generating Functions for Generalized Frobenius Partitions, Third Colloquium on Mathematics and Computer Science, Vienna, Austria.
- September 2006, An extension to overpartitions of the Rogers-Ramanujan identities for even moduli (with Sylvie Corteel and Olivier Mallet), Fourth Colloquium on Mathematics and Computer Science, Nancy, France.

Conferences With Contributed Presentations

- November 1999, Divisibility and Distribution of Partitions into Distinct Parts, Conference on q -series, symbolic computation, number theory, special functions, physics and combinatorics, University of Florida, Gainesville, FL.
- April 2000, Extension of Ramanujan's Congruences for the Partition Function Modulo Powers of 5, SERMON (Southeast Regional Meeting on Numbers) 2000, Virginia Tech, Blacksburg, VA.
- May 2000, Extension of Ramanujan's Congruences for the Partition Function Modulo Powers of 5, Millennial Conference on Number Theory, University of Illinois, Urbana, IL.
- June 2000, Extension of Ramanujan's Congruences for the Partition Function Modulo Powers of 5, NATO Advanced Study Institute: Special Functions 2000, Arizona State University, Tempe, AZ.
- December 2000, The Divisibility of the Number of Partitions into Distinct Parts, Western Number Theory Conference, University of San Diego, San Diego, CA.
- May 2001, Summing the Tails of Modular Forms, q -series, and the Arithmetic of Quadratic Number Fields, Fifth International Joint Meeting of the AMS and the Sociedad Matematica Mexicana (SMM), UNAM, Morelia, Mexico.
- May 2002, Lacunary Partition Functions, CNTA, Université de Montreal, Montreal, Quebec.
- July 2005, A Theorem on Seven-colored Overpartitions and its Applications, XXIVièmes Journées Arithmétiques, Marseille, France.
- July 2007, Rank differences for overpartitions, XXVièmes Journées Arithmétiques, Edinburgh, Scotland.

Other Conferences

- October 1998, Conference in honor of the sixtieth birthday of G.E. Andrews, Pennsylvania State University, University Park, PA.
- October 1998, AMS Fall Sectional Meeting, Pennsylvania State University, University Park, PA.
- December 1998, Conference in honor of André Weil, Institute for Advanced Study, Princeton, NJ.
- July 2000, FoataFest, Temple University, Philadelphia, PA.
- August 2002, Special Functions in the Digital Age, Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, MN.
- March 2003, Number Theory and Combinatorics in Physics, University of Florida, Gainesville, FL.
- October 2003, AMS Fall Sectional Meeting, University of Wisconsin, Madison, WI.
- June 2005, FPSAC 2005, Taormina, Italy.
- July 2009, XXVIIèmes Journées Arithmétiques, Saint-Etienne, France.
- April 2010, Journées Hypergéométriques, Grenoble, France.
- June 2010, Quasimodular forms and applications, Besse et Saint-Anastaise, France.

Seminars

- October 1999, Pennsylvania State University (USA).
- October 2000, University of Wisconsin (USA) (3 seminars)
- November 2000, Institut Girard Desargues, Université Lyon I (France).
- March 2001, University of Wisconsin (USA).
- April 2001, University of Illinois (USA).
- March 2002, Institut Henri Poincaré (France).
- April 2002, Institut Girard Desargues, Université Lyon I (France).
- April 2002, Sussex University (UK).
- June 2002, LaBRI, Université Bordeaux I (France).
- November 2002, University of Illinois (USA).
- March 2003, University of Wisconsin (USA) (2 seminars)
- December 2003, Max Planck Institute (Germany).
- April 2004, University of Melbourne (Australia).
- November 2004, University of Wisconsin (USA).
- March 2005, Institut Camille Jordan, Université Lyon I (France).
- April 2005, LIAFA, Université Paris 7 (France).
- March 2006, University College, Dublin (Ireland).
- February 2007, Institut Camille Jordan, Université Lyon I (France).
- April 2007, Pohang University of Science and Technology (Korea) (3 seminars).
- April 2007, Korea Institute for Advanced Study (Korea) (2 seminars).
- April 2007, Korea Advanced Institut of Science and Technology (Korea).
- June 2007, Institut Henri Poincaré (France).
- March 2008, IECN, Université Nancy (France).
- November 2009, University of Cologne (Germany).

Séjours

- Winter 2004, Center for Combinatorics, Nankai University, Tianjin, China (4 weeks).
- Spring 2004, Department of Mathematics and Statistics, University of Melbourne, Australia (4 weeks).
- Fall 2005, Instituto de Matemática y Física, Universidad de Talca, Chile (2 weeks).
- Spring 2007, Postech and KIAS, Korea (2 weeks).
- Summer 2009, University College, Dublin (6 weeks).
- Summer 2010, University College, Dublin (7 weeks).

Teaching

- Graduate courses: The Theory of Partitions.
- Undergraduate courses: Calculus I, Calculus II, Differential Equations, Linear Algebra, Vector Calculus, Advanced Linear Algebra, Quantitative Reasoning, Combinatorics.

Advising

- Team leader, Research Experience for Undergraduates, University of Wisconsin, Summer 2003.
- PhD Thesis advisor, Olivier Mallet, 2006-2008. Current position: Maître de conférences, Université de Rouen.
- Thesis Examiner, University of Mysore (India).
- Habilitation Committee, Frédéric Jouhet, Université Lyon I, 2010
- M1 research advisor, Jehanne Dousse, ENS Lyon, 2011.

Refereeing and Reviewing

- Referee for: Acta Arithmetica, Acta Mathematica Sinica, Advances in Mathematics, American Journal of Mathematics, American Mathematical Monthly, Annals of Combinatorics, Arkiv för Matematik, Canadian Journal of Mathematics, Canadian Mathematical Bulletin, Central European Journal of Mathematics, CONICYT (Chile), Discrete Mathematics, Duke Mathematical Journal, Electronic Journal of Combinatorics, European Journal of Combinatorics, FPSAC, Houston Journal of Mathematics, Integers, International Journal of Mathematics and Mathematical Sciences, International Journal of Number Theory, Journal de Théorie de Nombres de Bordeaux, Journal of Combinatorics and Number Theory, Journal of Combinatorial Theory Series A, Journal of the London Mathematical Society, Kragujevac Journal of Mathematics, Mathematical Communications, Mathematics of Computation, National Science Foundation (USA), National Security Agency (USA), New Zealand Journal of Mathematics, Proceedings of the AMS, Proceedings of the Edinburgh Mathematical Society, Proceedings of the Estonian Academy of Sciences, Proceedings of the Indian Academy of Sciences - Mathematical Sciences,

Quarterly Journal of Mathematics (Oxford), Ramanujan Journal, Rocky Mountain Journal of Mathematics

- Reviewer for AMS Mathematical Reviews (100 reviews), Zentralblatt MATH (100 reviews).
- Book reviewer for Prentice-Hall.

Organizing and Program Committees

- Program Committee, FPSAC 2008.
- Co-organizer, Conference on “Prospects in q -series and modular forms,” July 14-16, 2010, University College Dublin, Ireland.
- Co-organizer, Conference on “Hypergeometric series and their generalizations in algebra, geometry, number theory and physics,” May 29 - June 1, 2012, Paris, France.
- Co-organizer, Automorphic forms workshop, March 2013, University College Dublin, Ireland.

Professional Awards and Grants

- Chateaubriand Fellowship, 10/2001- 10/2002.
- Coordinator, “Partitions d’entiers à l’interface de la combinatoire, des q -séries, et de la théorie des nombres,” ACI Jeunes Chercheuses et Jeunes Chercheurs, 40.000 Euros, 10/2004 - 10/2007.
- Member, “Problèmes algorithmiques, algébriques et combinatoires issues dans la théorie de graphes et la théorie d’ensembles finis” Programme ECOS-Colombie, 15.000 Euros, 1/2005 - 12/2006.
- Member, “GAMMA”, ANR Projet Blanc, 2007-2010.
- Co-coordinator, “Ramanujan-type congruences for overpartitions and overpartition pairs”, Ulysses - PHC Franco-Irlandais, 5.000 Euros, 1/2008 - 1/2009.
- Member, “Arithmetic Properties of Coefficients of Modular Forms”, Science Foundation Ireland Research Frontiers Programme, 117.000 euros, 05/2008-04/2011.
- Member, IComb, ANR Jeunes Chercheuses et Jeunes Chercheurs, 340.000 euros, 2008-2013.

Professional Positions

- October 2006 - present, CNRS Researcher (CR1), LIAFA.
- October 2002 - October 2006, CNRS Researcher (CR2), LaBRI and LIAFA.
- August 2000 - August 2003, VIGRE/Van Vleck Assistant Professor, University of Wisconsin.
- August 1996 - August 2000, Graduate Teaching Assistant, Pennsylvania State University.

References

- George Andrews, Department of Mathematics, 218 McAllister Building, University Park, PA 16802, USA, andrews at math.psu.edu
- Ken Ono, Department of Mathematics and Computer Science, Mathematics and Science Center, Suite W410, Emory University, Atlanta, GA, 30322, USA, ono at mathcs.emory.edu
- Bruce Berndt, Department of Mathematics, University of Illinois at Urbana-Champaign, 1409 West Green Street, Urbana, IL 61801-2975, USA, berndt at math.uiuc.edu