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 Arithemtica* **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 Scott Ahlgren and Kathrin Bringmann), *Adv. Math.* **228** (2011), 629-645.
• Ramanujan-type partial theta functions and conjugate Bailey pairs, *Ramanujan J.* **29** (2012), 51-67.
• The Bailey chain and mock theta functions, *Adv. Math.* **238** (2013), 442–458.
• q-hypergeometric double sums as mock theta functions (with Robert Osburn), *Pacific J. Math.* **264** (2013), 151–162 .
• On q-difference equations for partitions without k-sequences (with Kathrin Bringmann and Karl Mahlburg), *Legacy Of Ramanujan, Ramanujan Mathematical Society Lecture Notes* **20** (2013), 129–137.
• Mixed mock modular q-series (with Robert Osburn), *J. Indian Math. Soc.*, Special Volume to commemorate the 125th Birth Anniversary of Srinivasa Ramanujan and the National Mathematics Year - 2012 (2013), 45–61.
• Bailey pairs and indefinite quadratic forms, *J. Math. Anal. Appl.* **410** (2014), 1002–1013.
• The rank of a unimodal sequence and a partial theta identity of Ramanujan (with Byungchan Kim), *Int J. Number Theory* **10** (2014), 1081–1098.
• Torus knots and quantum modular forms (with Kazuhiro Hikami), *Res. Math. Sci.* **2**:2, 2014.
• On two tenth order mock theta identities, *Ramanujan J.* **36** (2015), 117–121.
• Anti-lecture hall compositions and Andrews' generalization of the Watson-Whipple transformation (with Sylvie Corteel and Carla Savage), *J. Combin. Theory Ser. A* **134** (2015), 188–195.
• Overpartitions with restricted odd differences (with Kathrin Bringmann, Jehanne Dousse, and Karl Mahlburg), *Electron. J. Combin* **22** (2015), no.3, paper 3.17.
• Real quadratic double sums (with Robert Osburn), *Indag. Math.* **26** (2015), 697–712.
• Ramanujan-type partial theta identities and rank differences for special unimodal sequences (with Byungchan Kim), *Ann. Comb.* **19** (2015), 705–733.
• A partition identity and the universal mock theta function $g_2(x;q)$ (with Kathrin Bringmann and Karl Mahlburg), *Math. Res. Lett.*, to appear.
• Odd-balanced unimodal sequences and related functions: parity and quantum modularity (with Byungchan Kim and Subong Lim), *Proc. Amer. Math. Soc.*, to appear.
• Mock theta double sums (with Robert Osburn), submitted.

• Overpartitions into distinct parts without short sequences (with Youn-Seo Choi and Byungchan Kim), submitted.
• Partial indefinite theta identities (with Byungchan Kim), in preparation.
• TBD (with Kathrin Bringmann and Larry Rolen), in preparation.

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, Ramanujan's identities for the sixth order mock theta functions, Symposium on Modular Forms, Mock Theta Functions, and Applications, Cologne, Germany.
• August 2013, The Bailey chain and mock theta functions, The Combinatorics of q-Series and Partitions in honor of Professor George Andrews' 75th birthday, Tianjin, China.
• February 2015, Torus knots and quantum modular forms, Functional equations and special functions: from combinatorics to model theory, Grenoble, France.

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, Gainsville, 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, Millenial 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 Journèes Arithmétiques, Marseille, France.
• July 2007, Rank differences for overpartitions, XXVièmes Journèes Arithmétiques, Edinburgh, Scotland.
• August 2012, The Bailey chain and mock theta functions, Building Bridges: 1st EU-US conference on Automorphic Forms and related topics, Aachen, Germany.
• July 2014, Rank differences for unimodal sequences, Building Bridges: 2nd EU-US workshop on Automorphic Forms and related topics, Bristol, United Kingdom.

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, Institut Joseph Fourier, Grenoble, France.
• June 2010, Quasimodular forms and applications, Besse et Saint-Anastaise, France.
• July 2010, Prospects in q-series and modular forms University College Dublin, Ireland.
• May-June 2012, Hypergeometric series and their generalizations in algebra, geometry, number theory and physics, Paris, France.
• March 2013, 27th Automorphic forms workshop, University College Dublin, Ireland.
• July 2013, Special functions and special numbers, Frits Beukers 60th birthday, Utrecht, The Netherlands.
• February 2014, Journées Holonomes, Institut Joseph Fourier, Grenoble, France.
• May 2015, Automorphic forms: advances and applications, CIRM, Marseille, 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).

• October 2011, University College Dublin (Ireland).
• December 2012, Institut Joseph Fourier, Grenoble (France).
• December 2012, Institut Camille Jordan, Lyon (France).
• October 2013, CALIN, Université Paris XIII (France).
• February 2014, University College Dublin (Ireland).
• October 2015, Korea Institute for Advanced Study (Korea).

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).
• Winter 2016, MFO (Oberwolfach) (2 weeks).

Teaching

• Master Parisien de Recherche en Informatique (MPRI), 2013, 2014, 2015.
• Graduate courses: The Theory of Partitions, 2002-2003.
• Undergraduate courses: Calculus I, Calculus II, Differential Equations, Linear Algebra, Vector Calculus, Advanced Linear Algebra, Quantitative Reasoning, Combinatorics, 1996-2001.

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).
• Thesis Examiner, Nanyang Technological University (Singapore).
• Habilitation Committee, Frédéric Jouhet, Université Lyon I, 2010
• M1 research advisor, Jehanne Dousse, ENS Lyon, 2011.
• PhD Thesis advisor, Jehanne Dousse, 2012-2015.

Refereeing and Advisory Work (Papers)

- Acta Arithmetica
- Acta Mathematica Sinica
- Acta Mathematica Scientia
- Advances in Applied Mathematics
- Advances in Difference Equations
- Advances in Mathematics
- American Journal of Mathematics
- American Mathematical Monthly
- Annali dell'Università di Ferrara
- Annals of Combinatorics
- Applicable Analysis and Discrete Mathematics
- Arkiv för Matematik
- Ars Combinatoria
- Bulletin of the Australian Mathematical Society
- Bulletin of the Brazilian Mathematical Society
- Bulletin of the London Mathematical Society
- Canadian Journal of Mathematics
- Canadian Mathematical Bulletin
- Central European Journal of Mathematics
- Colloquium Mathematicum
- Compositio Mathematica
- Comptes Rendus Mathématiques
- Constructive Approximation
- Discrete Mathematics
- Duke Mathematical Journal
- Electronic Journal of Combinatorics
- European Journal of Combinatorics
- Formal Power Series and Algebraic Combinatorics
- Functional Analysis, Approximation, and Computation
- Functiones et Approximatio, Commentarii Mathematici
- Graphs and Combinatorics
- Houston Journal of Mathematics
- Integers
- International Journal of Mathematics and Mathematical Sciences
- International Journal of Number Theory
- International Mathematical Research Notices
- JP Journal of Algebra, Number Theory and Applications
- Journal de Théorie de Nombres de Bordeaux
- Journal of Analysis and Number Theory
- Journal of Combinatorics and Number Theory
- Journal of Combinatorial Theory Series A
- Journal of the London Mathematical Society
- Journal of Mathematical Analysis and Applications
- Journal of the Ramanujan Mathematical Society
- Kragujevac Journal of Mathematics

- Mathematica Bohemica
- Mathematica Slovaca
- Mathematical Communications
- Mathematics of Computation
- Mathematika
- Monatshefte für Mathematik
- New Zealand Journal of Mathematics
- Pacific Journal of Mathematics
- Proceedings of the American Mathematical Society
- Proceedings of the Edinburgh Mathematical Society
- Proceedings of the Estonian Academy of Sciences
- Proceedings of the Indian Academy of Sciences - Mathematical Sciences
- Proceedings of the London Mathematical Society
- Proceedings of the National Academy of Sciences (USA)
- Quarterly Journal of Mathematics (Oxford)
- Ramanujan Journal
- Rocky Mountain Journal of Mathematics
- SIAM Journal on Discrete Mathematics
- Tamsui Oxford Journal of Information and Mathematical Sciences

Refereeing and Advisory Work (Grants)

- CONICYT (Chile)
- National Science Foundation (USA)
- National Security Agency (USA)

Reviewing

- AMS Mathematical Reviews (165 reviews)
- Zentralblatt MATH (155 reviews).
- Book reviewer for Prentice-Hall.
- Book reviewer for Cambridge University Press.

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.
• Organizing Committee, FPSAC 2013.
• Co-organizer, Automorphic forms: advances and applications, May 25-29, 2015, CIRM.

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.
• Co-coordinator, "Partial theta functions in Ramanujan's lost notebook and beyond", STAR - PHC Franco-Coréen, 10.880 euros, 2014-2015.

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