Victor H. Moll

http://www.math.tulane.edu/∼vhm

EDUCATION:

Universidad Santa Maria, Valparaiso, Chile.
Received Magister in Mathematics under Luis Salinas, March 1978.

Courant Institute, New York University, New York.
Received M.Sc. in Mathematics in 1982.

Courant Institute, New York University, New York.
Received Ph. D. in Mathematics under Henry P. McKean, October 1984.

POSITIONS:

Tulane University, New Orleans, Louisiana.
Professor of Mathematics. July 2001 – Present.

Tulane University, New Orleans, Louisiana.
Associate Professor of Mathematics. July 1992 – June 2001.

Tulane University, New Orleans, Louisiana.
Asssitant Professor of Mathematics. July 1986 – June 1992.

Temple University, Philadelphia, Pennsylvania.
Lawton Instructor. October, 1984 – August 1986.

VISITING POSITIONS:

Courant Institute, New York University, New York.
Visiting Scholar. August 2011 – August 2012.

Courant Institute, New York University, New York.
Visiting Scholar. August 2005 – December 2005.

Universidad Santa Maria, Valparaiso, Chile.
Visiting Professor. June 1999 – August 1999.

Courant Institute, New York University, New York.
Visiting Scholar. July 1995 – December 1995.

University of Utah, Salt Lake City, Utah.
Visiting Assistant Professor. January 1990 – June 1991.

GRANTS:

National Science Foundation, 2011-2015. $320,000.
NSF-DMS 1112656, "Definite Integration: Algorithms and Applications".

National Science Foundation, 2007-2010. $220,000.
NSF-DMS 0713836, "Rational Landen transformations and Hurwitz zeta functions: from theory to algorithms".

National Science Foundation. CCLI-Phase I, 2007-2008. $78,000.
NSF-DMS 0633208, "Phase I: Experimental Mathematics", (with M. Chamberland, Grinnell College).

National Science Foundation, 2004-2007. $260,743.
NSF-DMS 0409968, "Landen transformations, Hurwitz zeta functions, and Dynamical systems".

Louisiana Board of Regents, 2002-2004, $24,000.
LEQSF(2001-2004)ENH-TR-68, "Support for Colloquia: Mathematics Department".

National Science Foundation, 2000-2003. $105,394.
NSF-DMS 00070567, "Rational Landen transformations".

AWARDS:

Duren Professor. Tulane University, 2001.

GSSA Outstanding Faculty Award, $2007-2008$. This is an award given by the Graduate Students in Science Association.

Finalist for the Weiss Award. This is an award given by all undergraduates at Tulane, 2007 and 2016.

Weiss Presidential Award for Graduate Teaching, 2017.

UNDERGRAD. RESEARCH:

- SIMU-2000

  Students: Jenny Alvarez, Miguel Amadis, Encarnacion Gutierrez, Emilia Huerta-Sanchez, Aida Navarro-Lopez, Lianette Passapera-Sanchez, Christian Roldan-Santos, Leobardo Rosales, Miguel Rosario-Garcia, Maria Torres, David Uminsky, Yvette Uresti.

  Graduate Assistants: Jean Carlos Cortissoz, Dagan Karp.

- SIMU-2002

  Students: Benjamin Aleman, Margaret Briscoe, Danielle Brooker, Aaron Cardona, Angela Gallegos, Danielle Heckman, Laura Jimenez, Luis Medina, Jose Miranda, Sandra Moncada, Maria Osorio, Juan Carlos Trujillo.

  Graduate Assistants: Christopher Duncan, Dante Manna.

- MSRI-UP 2008: *Experimental Mathematics*

  Students: Ana Berrizbeitia, Natasha Cayco Gajjic, Cindy Enrique, Ricela Feliciano-Semidei, Richard Garcia Lebron, Nathan Kallus, Gerard Koffi, Alexander Moll, Aileen Nguyen, Laine Noble, Ivan Ojeda, Marcos Ortiz, Jason Rosenberg, Jessica Stigile, Lorraine Torres Castro, Bobby Wilson, Kevin Wingfield.

  Graduate Assistants: Erin Beyerstedt, Candice Price.

  Postdoctoral fellow: Luis Medina.

- MSRI-UP 2014: *Arithmetic aspects of elementary functions*

  Students: Alyssa Byrnes, David Cervantes-Nava, Joseph Chavoya, Alphonso Lucero, Alexandra Michel, Andrew Miller, Erica Musgrave, Isabella Nogues, Gianluca Pane, Hadrain Quan, Joseph Rennie, Sean Reynolds, Fernando Roman, Abraham Schulte, Sam VanSchalkwyk, Michole Washington, Adela Yang, Amber Yuan.

Graduate Assistants: Leyda Almodovar, Asia Wyatt.

Postdoctoral fellow: Eric Rowland.

- PCMI-2017: *Special Functions: Number Theory and Combinatorics*
  Undergraduate Faculty Program
  PCMI Summer Sessions, Park City Utah
  June-July 2017
- Summer activities at Tulane

Summer-2013: Alyssa Byrnes, Julie Fink, Gary Levine and Senthil Rajasekaran worked under the supervision of Aashita Kesaharwani on p-adic valuations of quadratic polynomials.

EDITORIAL DUTIES:

Scientific Editor of the *Table of Integrals* by I. Gradshteyn and I. Ryzhik, published by Elsevier.

Associate Editor, Springer Undergraduate Texts in Mathematics and Technology.

Editor in Chief, OnLine Journal of Analytic Combinatorics.

Associate Editor, The Ramanujan Journal.

Member of Scientific Committee, 13th International Symposium on Orthogonal Polynomials, Special Functions and Applications, June 1-5, 2015. National Institute of Standards and Technology, NIST, Gaithersburg, Maryland.

Editor, Henry McKean Selecta, Birkhauser, 2016.

EARLIER PAPERS:

1. A threshold for a caricature of the nerve conduction.
   With Henry P. McKean.
   Bull. Amer. Math. Soc. **12**, 1985, 255 − 259.
2. Stabilization to the standing wave in a simple caricature of the nerve conduction.
   With Henry P. McKean.
   Comm. Pure Appl. Math. **39**, 1986, 485 − 529.
3. Existence of special solutions in a simple model for nerve conduction.
   Math. Appl. Comp., **8**, 1989, 63 − 82.
4. A note on McKean's caricature for nerve conduction.
   Nonlinear Analysis, **13**, 1989, 560 − 577.
5. Computations for a critical surface.
   Conference on Theory and Applications of Differential Equations
   Ohio State University, **2**, 1989, 236 − 243.
   Editor A. R. Aftabizedeh.
6. Calculations of the threshold surface for nerve conduction.
   With S. Rosencrans.
   SIAM J. Applied Math., **50**, 1990, 1419 − 1441.

7. Polygonal approximation to the flow on a critical surface for the bistable equation. *Computer in Mathematics with Applications*, **25**, 1993, 45 − 51.
8. Activation waves in a model of platelet aggregation: existence of solutions and stability of travelling fronts.
With A. Fogelson.
Jour. Math. Biology, **31**, 1993, 675 − 701.
9. Activation waves and threshold phenomena in platelet aggregation.
With A. Fogelson.
Conference on Theory and Applications of Differential Equations.
Pan American University, Texas, 1991. Editor J. Wiener.
10. Threshold phenomenon in a model for platelet aggregation: existence of global solutions and critical multipliers.
Nonlinear Analysis, **20**, 1993, 1095 − 1121.
11. Post-fertilization traveling waves on eggs.
With G. Flores, A. Minzoni and K. Mischiakow.
Nonlinear Analysis, **36**, 1999, 45 − 62.

PAPERS IN THE GR SERIES:

1. The integrals in Gradshteyn and Ryzhik.
Part 1. A family of logarithmic integrals.
Scientia, Series A: Mathematical Sciences, **14**, 2007, 1 − 6.
2. The integrals in Gradshteyn and Ryzhik.
Part 2. Elementary logarithmic integrals.
Scientia, Series A: Mathematical Sciences, **14**, 2007, 7 − 15.
3. The integrals in Gradshteyn and Ryzhik.
Part 3. Combinations of logarithms and exponentials.
Scientia, Series A: Mathematical Sciences, **15**, 2007, 31 − 36.
4. The integrals in Gradshteyn and Ryzhik.
Part 4. The gamma function.
Scientia, Series A: Mathematical Sciences, **15**, 2007, 37 − 46.
5. # The integrals in Gradshteyn and Ryzhik.
Part 5: some trigonometric integrals.
With T. Amdeberhan and L. Medina.
Scientia, Series A: Mathematical Sciences, **15**, 2007, 47 − 60.
6. The integrals in Gradshteyn and Ryzhik.
Part 6. The beta function.
Scientia, Series A: Mathematical Sciences, **16**, 2008, 9 − 24.
7. The integrals in Gradshteyn and Ryzhik.
Part 7. Elementary examples.
With T. Amdeberhan.
Scientia, Series A: Mathematical Sciences, **16**, 2008, 25 − 39.
8. ∗# The integrals in Gradshteyn and Ryzhik.
Part 8: Combinations of powers, exponentials and logarithms.
With J. Rosenberg, A. Straub and P. Whitworth.
Scientia, Series A: Mathematical Sciences, **16**, 2008, 41 − 50.

9. ∗# The integrals in Gradshteyn and Ryzhik.
   Part 9: Combinations of logarithms, rational and trigonometric functions.
   With T. Amdeberhan, J. Rosenberg, A. Straub and P. Whitworth.
   Scientia, Series A: Mathematical Sciences, **17**, 2009, 27 − 44.
10. # The integrals in Gradshteyn and Ryzhik.
    Part 10: The digamma function.
    With L. Medina.
    Scientia, Series A: Mathematical Sciences, **17**, 2009, 45 − 66.
11. # The integrals in Gradshteyn and Ryzhik.
    Part 11: The incomplete beta function.
    With K. Boyadzhiev and L. Medina.
    Scientia, Series A: Mathematical Sciences, **18**, 2009, 61 − 75.
12. The integrals in Gradshteyn and Ryzhik.
    Part 12: Some logarithmic integrals.
    With R. Posey.
    Scientia, Series A: Mathematical Sciences, **18**, 2009, 77 − 84.
13. The integrals in Gradshteyn and Ryzhik.
    Part 13: Trigonometric forms of the beta function.
    Scientia, Series A: Mathematical Sciences, **19**, 2010, 91 − 96.
14. The integrals in Gradshteyn and Ryzhik.
    Part 14: An elementary evaluation of entry 3.411.5.
    With T. Amdeberhan.
    Scientia, Series A: Mathematical Sciences, **19**, 2010, 97 − 103.
15. ∗# The integrals in Gradshteyn and Ryzhik.
    Part 15: Frullani integrals.
    With M. Albano, T. Amdeberhan and E. Beyerstedt.
    Scientia, Series A: Mathematical Sciences, **19**, 2010, 113 − 119.
16. # The integrals in Gradshteyn and Ryzhik.
    With S. Boettner.
    Part 16: Complete elliptic integrals.
    Scientia, Series A: Mathematical Sciences, **20**, 2011, 45 − 59.
17. The integrals in Gradshteyn and Ryzhik.
    With T. Amdeberhan and K. Boyadzhiev.
    Part 17: The Riemann zeta function.
    Scientia, Series A: Mathematical Sciences, **20**, 2011, 61 − 71.
18. The integrals in Gradshteyn and Ryzhik.
    With C. Koutschan.
    Part 18: Some automatic proofs.
    Scientia, Series A: Mathematical Sciences, **20**, 2011, 93 − 111.
19. ∗# The integrals in Gradshteyn and Ryzhik.
    With M. Albano, T. Amdeberhan and E. Beyerstedt.
    Part 19: The error function.
    Scientia, Series A: Mathematical Sciences, **21**, 2011, 25 − 42.
20. # The integrals in Gradshteyn and Ryzhik.
    With K. Kohl.
    Part 20: hypergeometric functions.
    Scientia, Series A: Mathematical Sciences, **21**, 2011, 43 − 54.

21. The integrals in Gradshteyn and Ryzhik.
With K. Boyadzhiev.
Part 21: hyperbolic functions.
Scientia, Series A: Mathematical Sciences, **22**, 2012, 109 – 127.

22. # The integrals in Gradshteyn and Ryzhik.
With L. Glasser, K. Kohl, C. Koutschan and A. Straub.
Part 22: the Bessel-K function.
Scientia, Series A: Mathematical Sciences, **22**, 2012, 129 – 151.

23. The integrals in Gradshteyn and Ryzhik.
With L. Medina.
Part 23: combinations of logarithms and rational functions.
Scientia, Series A: Mathematical Sciences, **23**, 2012, 1 – 18.

24. The integrals in Gradshteyn and Ryzhik.
With K. McInturff.
Part 24: polylogarithm functions.
Scientia, Series A: Mathematical Sciences, **23**, 2012, 45 – 51.

25. The integrals in Gradshteyn and Ryzhik.
Part 25: evaluation by series.
Scientia, Series A: Mathematical Sciences, **23**, 2012, 53 – 65.

26. The integrals in Gradshteyn and Ryzhik.
With K. Boyadzhiev.
Part 26: the exponential integral.
Scientia, Series A: Mathematical Sciences, **26**, 2015, 17 – 28.

27. The integrals in Gradshteyn and Ryzhik.
With L. Medina.
Part 27: more logarithmic examples.
Scientia, Series A: Mathematical Sciences, **26**, 2015, 29 – 45.

28. The integrals in Gradshteyn and Ryzhik.
With A. Dixit.
Part 28: the confluent hypergeometric function and Whittaker functions.
Scientia, Series A: Mathematical Sciences, **26**, 2015, 47 – 59.

29. The integrals in Gradshteyn and Ryzhik.
With C. Vignat.
Part 29: Chebyshev polynomials.
Scientia, Series A: Mathematical Sciences, **27**, 2016, 31 – 40.

30. # The integrals in Gradshteyn and Ryzhik.
With T. Amdeberhan, A. Dixit, X. Guan, L. Jiu, A. Kuznetsov and C. Vignat.
Part 30: Trigonometric functions.
Scientia, Series A: Mathematical Sciences, **27**, 2016, 47 – 74.

31. # The integrals in Gradshteyn and Ryzhik.
With L. Jiu.
Part 31: Expressions that can be reduced to square roots of third and fourth degree polynomials and rational functions.
Submitted to *Scientia*,

32. # The integrals in Gradshteyn and Ryzhik.
With A. Dixit, X. Guan, L. Jiu and C. Vignat.
Part 32: The generating function of Chebyshev polynomials of the second kind.
Submitted to *Scientia*,

33. The integrals in Gradshteyn and Ryzhik.
With K. Boyadzhiev.
Part 33: Combinations of rational functions, powers and logarithms.
Submitted to *Scientia*,

LANDEN TRANSFORMATIONS:

1. # A rational Landen transformation. The case of degree six.
With G. Boros.
Contemporary Math., **251**, 2000, 83 − 91.
Analysis, Geometry, Number Theory: The Mathematics of Leon Ehrenpreis
E.L. Grinberg, S. Berhanu, M.Knopp, G. Mendoza and E. T. Quinto editors.
2. # Landen transformations and the integration of rational functions.
With G. Boros.
Math. Comp., **71**, 2002, 649 − 668.
3. ∗# A transformation of rational functions.
With G. Boros and M. Joyce.
Elemente der Mathematik, **58**, 2003, 73 − 83.
4. A geometric view of the rational Landen transformation.
With J. Hubbard.
Bull. London Math. Soc., **35**, 2003, 293 − 301.
5. # A map on the space of rational functions.
With G. Boros, J. Little, E. Mosteig and R. Stanley.
Rocky Mountain Journal, **35**, 2005, 1861 − 1880.
6. Dynamics of the degree six Landen transformation.
With M. Chamberland.
Discrete and Continuous Dynamical Systems, **15**, 2006, 905 − 919.
7. # A simple example of a new class of Landen transformations.
With D. Manna.
Amer. Math. Monthly, **114**, 2007, 232 − 241.
8. # Rational Landen transformations on $\mathbb{R}$.
With D. Manna.
Math. Comp., **76**, 2007, 2023 − 2043.
9. # Landen survey.
With D. Manna.
In *Probability, Geometry and Integrable Systems*,
MSRI Publications, **55**, 2008, 201 − 233.
Special volume in honor of Henry McKean.
Editors: Mark Pinsky and Bjorn Birnir.
Cambridge University Press.
10. # An iterative method for numerical integration of rational functions.
With D. Manna.
Contemporary Math., **471**, 2008, 161 − 174.
Special Functions and Orthogonal Polynomials. D. Dominici and R. Maier editors.
11. # A fast numerical algorithm for the integration of rational functions.
With D. Manna, L. Medina, and A. Straub.
Numerische Mathematik, **115**, 2010, 289 − 307.

A QUARTIC INTEGRAL:

1. # An integral hidden in Gradshteyn and Ryzhik.
   With G. Boros.
   Jour. Comp. Appl. Math., **106**, 1999, 361 − 368.
2. # The double square root, Jacobi polynomials and Ramanujan's Master Theorem.
   With G. Boros.
   Jour. Comp. Appl. Math., **130**, 2001, 337 − 344.
3. # The 2-adic valuation of the coefficients of a polynomial.
   With G. Boros and J. Shallit.
   Scientia, Series A: Mathematical Sciences, **7**, 2001, 47 − 60.
   Special issue in memory of M. Blazquez.
4. ∗# An elementary evaluation of a quartic integral.
   With G. Boros and S. Riley.
   Scientia, Series A: Mathematical Sciences, **11**, 2005, 1 − 12.
5. Combinatorial sequences arising from a rational integral.
   Online Journal of Analytic Combinatorics, **2**, number 4, 2007.
6. A formula for a quartic integral: a survey of old proofs and some new ones.
   With T. Amdeberhan.
   The Ramanujan Journal, **18**, 2009, 91 − 102.
7. # A remarkable sequence of integers.
   With D. Manna.
   Expositiones Mathematicae, **27**, 2009, 289 − 312.
8. The evaluation of a quartic integral via Schwinger, Schur and Bessel.
   With T. Amdeberhan and C. Vignat.
   The Ramanujan Journal, **28**, 2012, 1 − 14.
9. A by-product of an integral evaluation.
   With T. Amdeberhan.
   The Ramanujan Journal, **37**, 2015, 219 − 222.

VALUATIONS:

1. # The 2-adic valuation of a sequence arising from a rational integral.
   With T. Amdeberhan and D. Manna.
   Journal of Comb., Series A, **115**, 2008, 1474 − 1486.
2. # The 2-adic valuation of Stirling numbers.
   With T. Amdeberhan and D. Manna.
   Experimental Mathematics, **17**, 2008, 69 − 82.
3. # Asymptotics of valuation of sequences satisfying first order recurrences.
   With T. Amdeberhan and L. Medina.
   Proc. Amer. Math. Soc., **137**, 2009, 885 − 890.
4. The p-adic valuation of sequences counting Alternating Sign Matrices.
   With X. Sun.
   Journal of Integer Sequences, **12**, 2009, article 09.3.8.

5. # The p-adic valuation of k-central binomial coefficients.
   With T. Amdeberhan and A. Straub.
   Acta Arith., **140**, 2009, 31 − 42.
6. A binary tree representation for the 2-adic valuation of a sequence arising from a rational integral.
   With X. Sun.
   INTEGERS, **10**, 2010, 212 − 222.
7. ∗ The p-adic valuation of Stirling numbers.
   With A. Berribiztia, L. Medina, A. Moll and L. Noble.
   Algebra and Number Theory Academia, **1**, 2010, 1 − 30.
8. # The p-adic valuation of ASM numbers.
   With E. Beyerstedt and X. Sun.
   Journal of Integer Sequences, **14**, 2011, article 11.8.7.
9. Arithmetic properties of plane partitions.
   With T. Amdeberhan.
   Elec. Jour. Combinatorics, **18**, 2011, # $R1$.
10. Complementary Bell numbers: arithmetical properties and Wilf's conjecture.
    With T. Amdeberhan and V. de Angelis.
    Advances in Combinatorics. In memory of Herbert S. Wilf.
    Editors I. S. Kotsireas and E. V. Zima, Springer-Verlag, 2013. Pages 23-56.
11. p-adic analysis and combinatorics of truncated exponential sums.
    With T. Amdeberhan and D. Callan.
    INTEGERS, **13**, 2013, #$A21$.
12. Involutions and their progenies.
    With T. Amdeberhan.
    Journal of Combinatorics, **6**, 2015, 483 − 508.
13. ∗# A closed-form solution might be given by a tree. Valuations of quadratic polynomials.
    With A. Byrnes, J. Fink, G. Lavigne, I. Nogues, A. Kesarwani, S. Rajasekaran, A Yuan, L. Almodovar, X. Guan. A. Kesarwani, L. Medina and E. Rowland.
    Submitted to *Mathematics Magazine ??*, ?, number ?, 20??.
14. The valuation of polynomial sequences.
    With L. Medina and E. Rowland.
    Submitted to *Journal of Number Theory*
15. p-adic analysis and combinatorics of truncated trigonometric sums.
    With T. Amdeberhan, D. Callan and L. Medina.
    Submitted to *INTEGERS*,
16. Arithmetic properties of sequences related to operator orderings.
    With T. Amdeberhan, V. De Angelis, A. Dixit and C. Vignat.
    In preparation

ZAGIER POLYNOMIALS:

1. The Zagier modification of Bernoulli numbers and a polynomial extension. Part I.
   With A. Dixit and C. Vignat.
   The Ramanujan Journal, **33**, 2014, 379 − 422.

2. The Zagier modification of Bernoulli polynomials. Part II: arithmetic properties of denominators.
With M. Coffey, V. De Angelis, A. Dixit, A. Straub and C. Vignat.
The Ramanujan Journal, **35**, 2014, 361 − 390.
3. Asymptotics and exact formulas for Zagier polynomials.
With A. Dixit, L. Glasser and C. Vignat.
Res. Number Theory **2** : **12**, 2016, 1 − 26.
4. ∗ Modified Nörlund polynomials
With A. Dixit, A. Kabza and C. Vignat.
The Ramanujan Journal, **42**, 2017, 69 − 96.
Special volume in memory of Marvin Knopp.

UNIMODALITY LOGCONCAVITY:

1. # A sequence of unimodal polynomials.
With G. Boros.
Jour. Math. Anal. Appl., **237**, 1999, 272 − 287.
2. # A criterion for unimodality.
With G. Boros.
Elec. Jour. Combinatorics, **6**, 1999, # *R*10.
3. ∗# An extension of a criterion for unimodality.
With J. Alvarez, M. Amadis, G. Boros, D. Karp, and L. Rosales.
Elec. Jour. Combinatorics, **8**, 2001, # *R*30.
4. # The unimodality of a polynomial coming from a rational integral. Back to the original proof.
With T. Amdeberhan, A. Dixit, Xiao Guan and Lin Jiu.
Jour. Math. Anal. Appl., **420**, 2014, 1154 − 1166.

ARCTANGENT SUMS:

1. # Sums of arctangents and some formula of Ramanujan.
With G. Boros.
Scientia, Series A: Mathematical Sciences, **11**, 2005, 13 − 24.
2. An elementary trigonometric equation.
College Math. Journal, **39**, 2008, 394 − 398.
3. # Arithmetical properties of a sequence arising from an arctangent sum.
With T. Amdeberhan and L. Medina.
Journal of Number Theory, **128**, 2008, 1808 − 1847.
4. An arithmetic conjecture on an arctangent sum.
Scientia, Series A: Mathematical Sciences, **24**, 2013, 90 − 119.

PROBABILISTIC METHODS:

1. A probabilistic interpretation of a sequence of numbers related to Narayana polynomials.
   With T. Amdeberhan and C. Vignat.
   Online Journal of Analytic Combinatorics, **8**, Paper 3, 2013, 25 pages.
2. On polynomials connected to powers of Bessel functions.
   With C. Vignat. *International Journal of Number Theory*, **10**, 2014, 1245 − 1257.
3. # Identities for generalized Euler polynomials.
   With L. Jiu and C. Vignat.
   Integral Transforms and Special Functions, **25**, 2014, 777 − 789.
4. A probabilistic approach to some binomial identities.
   With C. Vignat.
   Elemente der Mathematik, **70**, 2015, 55 − 66.

METHOD OF BRACKETS:

1. Definite integrals by the method of brackets. Part 1.
   With I. Gonzalez.
   Adv. Appl. Math., **45**, 2010, 50 − 73.
2. # The method of brackets. Part 2: examples and applications.
   With I. Gonzalez and A. Straub.
   Contemporary Math., **517**, 2010, 157 − 171.
   Gems in Experimental Mathematics.
   Editors T. Amdeberhan and V. Moll.
3. Evaluation of entries in Gradshteyn and Ryzhik employing the method of brackets.
   With I. Gonzalez and K. Kohl.
   Scientia, **25**, 2014, 65 − 84.
4. A generalized Ramanujan Master theorem applied to the evaluation of Feynman diagrams.
   With I. Gonzalez and I. Schmidt.
   Adv. Appl. Math., **63**, 2015, 214 − 230.
5. ∗ The moments of the hydrogen atom by the method of brackets. With I. Gonzalez, K. Kohl, I. Kondrashuk and D. Salinas.
   SIGMA,**13**, 2017, 001, 13 pages.
6. # Pochhammer symbols with negative indices. A new rule for the method of brackets.
   With I. Gonzalez and L. Jiu.
   Open Mathematics, **14**, 2016, 681 − 686.
7. Integrals of Frullani type and the method of brackets.
   With S. Bravo, I. Gonzalez and K. Kohl.
   Open Mathematics, **15**, 2017, 1 − 12.
8. The method of brackets in Experimental Mathematics.
   With I. Gonzalez, L Jiu and K. Kohl.
   Accepted for special volume in honor of Mourad Ismail.

9. # An extension of the method of brackets.
   With I. Gonzalez, K. Kohl and L. Jiu.
   Submitted for publication.
10. ∗ Analytic expressions for Debye integrals and the heat capacity of a solid.
    With I. Gonzalez, I. Kondrashuk and A. Vega.
    In preparation.
11. The evaluation of Mellin transforms by the method of brackets.
    With I. Gonzalez, L Jiu and K. Kohl.
    In preparation.

EXPOSITORY:

1. # The integration of rational functions: examples and problems. Part I.
   With G. Boros.
   Scientia, Series A: Mathematical Sciences, **6**, 2000, 9 − 28.
2. The evaluation of integrals: a personal story.
   Notices Amer. Math. Soc. **49**, March 2002, 311 − 317.
3. Integrales definidas: Analísis, Números y Experimentos.
   Revista Cientifica Tumbaga, **2**, 2007, 138 − 174.
4. Seized opportunities.
   Notices Amer. Math. Soc. **57**, April 2010, 476 − 484.
5. # Wallis, Schur, Ramanujan, Feynman.
   With T. Amdeberhan, O. Espinosa, and A. Straub.
   Amer. Math. Monthly, **117**, 2010, 618 − 632.
6. A pretty binomial identity.
   With T. Amdeberhan, V. de Angelis, M. Lin, and B. Sury.
   Elemente der Mathematik, **67**, 2012, 1 − 8.

LOGARITHMIC INTEGRALS:

1. # A class of logarithmic integrals.
   With L. Medina.
   The Ramanujan Journal, **20**, 2009, 91 − 126.
2. # Integrals of powers of loggamma.
   With T. Amdeberhan, M. Coffey, O. Espinosa, C. Koutschan, D. Manna.
   Proc. Amer. Math. Soc., **139**, 2011, 535 − 545.
3. # Iterated integrals of logarithmic powers.
   With L. Medina and E. Rowland.
   International Journal of Number Theory, **7**, 2011, 1 − 12.
4. The iterated integrals of $\ln(1 + x^2)$.
   With T. Amdeberhan, C. Koutschan, and E. Rowland.
   International Journal of Number Theory, **8**, 2012, 71 − 94.

INTEGRALS OF SPECIAL FUNCTIONS:

1. # An integral with three parameters.
   With G. Boros.
   SIAM Review, **40**, 1998, 978 − 980.
2. ∗# An integral with three parameters. Part 2.
   With G. Boros and R. Nalam.
   Jour. Comp. Appl. Math., **134**, 2001, 113 − 126.
3. On some definite integrals involving the Hurwitz zeta function. Part 1.
   With O. Espinosa.
   The Ramanujan Journal, **6**, 2002, 159 − 188.
4. On some definite integrals involving the Hurwitz zeta function. Part 2.
   With O. Espinosa.
   The Ramanujan Journal, **6**, 2002, 449 − 468.
5. On some families of integrals solvable in terms of polygamma and negapolygamma functions.
   With G. Boros and O. Espinosa.
   Integral Transforms and Special Functions, **14**, 2003, 187 − 203.
6. A generalized polygamma function.
   With O. Espinosa.
   Integral Transforms and Special Functions, **15**, 2004, 101 − 115.
7. The Laplace transform of the digamma function: an integral due to Glasser, Manna and Oloa.
   With T. Amdeberhan and O. Espinosa.
   Proc. Amer. Math. Soc., **136**, 2008, 3211 − 3221.
8. A dozen integrals: Russell-style.
   With T. Amdeberhan.
   Ramanujan Mathematics Newsletter, **18**, 2008, 7 − 8.
9. # Closed-form evaluation of integrals appearing in positronium decay.
   With T. Amdeberhan and A. Straub.
   Jour. Math. Physics, **50**, 2009, 103528.
10. ∗ Ramanujan Master Theorem.
    With T. Amdeberhan, O. Espinosa, I. Gonzalez, M. Harrison, and A. Straub.
    The Ramanujan Journal, **29**, 2012, 103 − 120.
11. A special rational function with vanishing integral.
    Integral Transforms and Special Functions, **24**, 2014, 970 − 975.
12. # The finite Fourier transform of classical polynomials.
    With A. Dixit, L. Jiu and C. Vignat.
    Journal of the Australian Math. Soc. **98**, 2015, 145 − 160.

EVALUATION OF SUMS AND PRODUCTS:

1. The evaluation of Tornheim double sums. Part 1.
   With O. Espinosa.
   Journal of Number Theory, **116**, 2006, 200 − 229.

2. # A summation method due to Carr. Part 1.
   With G. Boros.
   Scientia, Series A: Mathematical Sciences, **12**, 2006, 22 − 37.
3. The evaluation of Tornheim double sums. Part 2.
   With O. Espinosa.
   The Ramanujan Journal, **22**, 2010, 55 − 99.
4. # A symbolic approach to multiple zeta values at the negative integers.
   With L. Jiu and C. Vignat.
   Accepted for publication in Journal for Symbolic Computation.
5. # A series involving Catalan numbers. Proofs and demonstrations.
   With T. Amdeberhan, X. Guan, L. Jiu and C. Vignat
   Elemente der Mathematik, **71**, 2016, 109 − 121.
6. # A symbolic approach to some identities for Bernoulli-Barnes polynomials.
   With L. Jiu and C. Vignat.
   International Journal of Number Theory, **12**, 2016, 649 − 662.
7. # Infinite products arising in paperfolding.
   With L. Almodovar, F. Roman, E. Rowland, H. Quan and M. Washington.
   Journal of Integer Sequences, **19**, 2016, article 16.5.1.
8. A symbolic approach to Kubert-type identities.
   With S. Robins and C. Vignat.
   In preparation.

HISTORICAL:

1. # A property of Euler's elastic curve.
   With P. Neill, J. Nowalsky and L. Solanilla.
   Elemente der Mathematik, **55**, 2000, 156 − 162.
2. # Bernoulli on arc length.
   With J. Nowalsky, G. Roa and L. Solanilla.
   Math. Magazine, **75**, 2002, 209 − 213.
3. # The story of Landen, the hyperbola and the ellipse.
   With J. Nowalsky and L. Solanilla.
   Elemente der Mathematik, **57**, 2002, 19 − 25.

NUMBER THEORY:

1. ∗ The action of Hecke operators on hypergeometric functions.
   With S. Robins and K. Soodhalter.
   Jour. Austral. Math. Soc., **89**, 2010, 51 − 74.
2. Broken bracelets, Molien series, paraffin wax and the elliptic curve $48a4$.
   With T. Amdeberhan and M. Can.
   SIAM Journal of Discrete Math., **25**, 2011, 1843 − 1859.

3. $*\#$ Recursion rules for the hypergeometric zeta function.
With A. Byrnes, L. Jiu and C. Vignat
International Journal of Number Theory, **7**, 2014, 1761 − 1782.
4. Generalized Fibonacci polynomials and Fibonomial coefficients.
With T. Amdeberhan, X. Chen and B. Sagan
Electronic Journal of Analytic Combinatorics, **18**, 2014, 541 − 562.
5. Self-reciprocal functions, powers of the Riemann zeta function and modular-type transformations.
With A. Dixit
Journal of Number Theory, **147**, 2015, 211 − 249.
6. Primes dividing a row in Pascal's triangle.
With T. Amdeberhan, M. Can, J. Sondow and H. Swisher.
In preparation.
7. A family of rational functions with an interesting range.
With T. Amdeberhan and M. Joyce.
In preparation.
8. The valuations of harmonic numbers.
With O. Gonzalez, L. Medina and X. Sun.
In preparation.
9. Catalan numbers modulo a power of 2.
With L. Almodovar, D. Cervantes, E. Musgrave,G. Pane and E. Rowland.
In preparation.

COMBINATORICS:

1. Combinatorial and arithmetical properties of the restricted and associated Bell and factorial numbers.
With José L. Ramirez and Diego Villamizar.
Submitted for publication.

MISCELLANEOUS:

1. A family of palindromic polynomials.
With T. Amdeberhan and V. G. Papanicolau.
Scientia, Series A: Mathematical Sciences, **24**, 2013, 25 − 32.
2. From sequences to polynomials and back, via operator orderings.
With T. Amdeberhan, V. De Angelis, A. Dixit and C. Vignat.
Journal Math. Phys., **54**, 2013, 123502, 1 − 15.
3. Generalized Bernoulli numbers and a formula of Lucas.
With C. Vignat
The Fibonacci Journal, **53**, number 4, 2015, 349-359.

4. A hypergeometric inequality.
   With A. Dixit and V. Pillwein
   Journal of Analytic Combinatorics, **20**, 2016, 65 − 72.

BOOKS:

1. Elliptic curves.
   Function Theory, Geometry, Arithmetic.
   With Henry P. McKean.
   Cambridge University Press, 1997. Paperback edition, 1999.
2. Irresistible integrals.
   Symbolic Analysis, and Experiments in the Evaluation of Integrals.
   With George Boros.
   ISBN 0-521-796369.
   Cambridge University Press, 2004. Paperback edition, 2005.
3. Experimental Mathematics in Action.
   With D. H. Bailey, J. M. Borwein, N. J. Calkin, R. Girgensohn and R. Luke.
   ISBN 13-978-1-56881-271-7.
   A. K. Peters, 2007.
4. Numbers and Functions.
   From a classical-experimental mathematician's point of view.
   American Mathematical Society, Student Mathematical Library series, **65**, 2012, (508 pages).
5. Special Integrals in Gradshteyn and Ryzhik. The proofs. Volume 1. *CRC Press, Monographs and Research Notes in Mathematics*, Chapman-Hall, 2014, (238 pages).
6. Special Integrals in Gradshteyn and Ryzhik. The proofs. Volume 2. *CRC Press, Monographs and Research Notes in Mathematics*, Chapman-Hall, 2015, (263 pages).

BOOKS EDITED:

1. Tapas in Experimental Mathematics.
   With T. Amdeberhan.
   Contemporary Mathematics **457**, 2008.
   Proceedings of Special Session in Experimental Mathematics.
   Joint Meetings AMS, New Orleans, 2007.
2. Gems in Experimental Mathematics.
   With T. Amdeberhan and L. Medina.
   Contemporary Mathematics **517**, 2010.
   Proceedings of Special Session in Experimental Mathematics.
   Joint Meetings AMS, Washington, D.C., 2009.
3. Henry P. McKean Jr., Selecta Mathematica
   With A. Grünbaum and P. van Moerbeke.
   Contemporary Mathematicians, Birkhäuser, 2016.

4. Special Issue on Orthogonal Polynomials, Special Functions and Applications. Appeared, December 2016.
   Symmetry, Integrability and Geometry; Methods and Applications (SIGMA).
   Joint Guest Editor (with H. Cohl, D. Dominici, T. Koorwinder, W. van Assche).
   13^{th} International Symposium on Orthogonal Polynomials, Special Functions and Applications, NIST, Gaithersburg Maryland, USA, June 1-5, 2015.

POSTDOCTORAL FELLOWS SUPERVISED:

This includes those postdoctoral visitors with whom I have collaborated and partially funded.

1. Flavia Stan.
   Ph.D. from RISC at J. Kepler University
   partially funded visit from NSF Grant.

2. Christoph Koutschan.
   Ph.D. from RISC at J. Kepler University
   one year visit, funded from NSF Grant.

3. Eric Rowland.
   Ph.D. from Rutgers University
   two year visit, funded with VIGRE and department grants.

4. Ivan Gonzalez.
   Ph. D. from Universidad Santa Maria (Physics Department)
   one month visit (twice), funded from NSF Grant.

5. Atul Dixit
   Ph. D. from University of Illinois at Urbana-Champaign.
   three year visit (starting in August 2012).
   Funds from NSF Grant and the School of Science and Engineering.

GRADUATE STUDENTS SUPERVISED:

1. Ziyang Lu
   Thesis title: Sharp threshold and wave propagation in a nerve conduction model, 1993.

2. Angel Estrella
   Thesis title: Traveling wave solutions to McKean's caricature of the nerve conduction in two space dimensions, 1997.

3. George Boros
   Thesis title: An algorithm for the efficient integration of rational functions and some classical theorems in Analysis, 1997.

4. Dante Manna
   Thesis title: The general Landen transformation, 2006.

5. Luis Medina
   Thesis title: Case studies in Experimental Mathematics: p-adic valuations of sequences, 2008.

6. Stefan Boettner
   Thesis title: Mixed transcendental and algebraic extensions for the Risch-Norman algorithm, 2010.

7. Karen Kohl
   Thesis title: Algorithmic methods for definite integration, 2011.

8. Armin Straub
   Thesis title: Arithmetic aspects of random walks and methods in definite integration, 2012.
   (joint with J. Borwein).

9. Erin Beyerstedt
   Thesis title: A generalization of the ASM numbers. Thesis has been postponed until further progress.

10. Jiu Lin
    Thesis title: The method of brackets and the Bernoulli symbol, 2016.
    (joint with C. Vignat).

11. Xiao Guan
    Current status: Working on thesis.

12. Aashita Kesarwani
    Current status: Working on thesis.

13. Tri Ngo
    Current status: Working on thesis.

14. Vaishavi Sharma
    Current status: Preparing oral exams.

15. Kristina VanDusen
    Current status: Preparing oral exams.

16. Diego Villamizar
    Current status: Preparing oral exams.

MASTER STUDENTS SUPERVISED:

1. Judy Nowalski
   Thesis title: Properties of the generalized Euler's curve, 1997.
2. Amanda Back
   Thesis title: The Landen transformation of degree 8, 2011.

UNDERGRADUATE STUDENTS SUPERVISED:

1. Sara Tave
   Honor thesis: The study of travelling waves, 1994.
   Sara was a double major in Ceramics. She went to the School of Visual Arts in New York City and graduated with and MFA in Computer Art. She now runs her own company.
2. Frank Dang
   Honor thesis: The integration of rational functions. A case study, 1997.
   Frank graduated and moved on to the Southwestern Theologiocal Seminary.
   He is now the Global Outreach Pastor of Northwood Church, Keller, Texas.
3. Michael Joyce
   Honor thesis: The number of points on an elliptic curve over $\mathbb{Z}/\mathbb{Z}_n$, 2000.
   Michael obtained his Ph. D. from Brown University under Joseph Silverman.
   He is currently an adjunct at Tulane University.
4. Roopa Nalam
   Her work culminated in a paper with G. Boros, *An integral with three parameters. Part 2.* It appeared in *Jour. Comp. Appl. Math.*, **134**, 2001, 113 − 126.
   Roopa is currently in the M.D-Ph.D. program at Baylor University in Houston.
5. Kirk Soodhalter
   Honor thesis: The Landen transformation of degree 8, 2003.
   Kirk is currently a graduate student in Mathematics at Temple University. He worked with S. Robins and V.M. and *The action of Hecke operators on hypergeometric functions*, appeared in *Jour. Austral. Math. Soc.*, **89**, 2010, 51 − 74.
6. Megan Schuler
   Honor thesis: A dynamical system arising from the Landen transformation of degree 8, 2006.
   Megan is currently a graduate student in Statistics at University of South Carolina.
7. Matt Smith
   Honor thesis: Bidding in bridge, 2007.
   Matt is currently a graduate student in Economics at University of Chicago.
8. Emily Rosen
   Honor thesis: p-adic properties of arithmetical sequences, 2009.
9. Amanda Back
   Honor thesis: The Landen transformation of degree 8, 2010.
   Amanda is a graduate student in Mathematics at University of California, Davis.
10. Laine Noble
    Honor thesis: Arithmetical properties of Stirling numbers, 2009.
    Her work was developed at MSRI-UP at Berkeley. It resulted in the publication *The p-adic*

valuation of Stirling numbers. With A. Berribiztia, L. Medina, A. Moll and L. Noble. *Algebra and Number Theory Academia*, **1**, 2010, 1 − 30.
Laine is currently a graduate student in Mathematics at Ohio State University.

11. Peter Bull
He developed `Mathematica` code to supplement the book *Numbers and Functions*. Spring 2011.
He is currently an undergraduate at Tulane University.

12. Jason Rosenberg
He worked during the Spring 2008 on projects dealing with integral evaluations. His work appeared in *The integrals in Gradshteyn and Ryzhik. Part 8: Combinations of powers, exponentials and logarithms* and *Part 9: Combinations of logarithms, rational and trigonometric functions*. He also participated in the MSRI-UP program at Berkeley, 2008.
He is currently a student at the Tulane MBA program.

13. Pat Whitworth
Graduated Tulane and is in an MBA program.

14. Matt Albano
Currently a graduate student at NJIT.

15. Micah Silver
Graduated Tulane.

16. Katherine Strasser
Graduated Tulane.

17. Zhueng Zhang
Transferred to Cornell University.

18. Alyssa Byrnes
She is a double major in Mathematics and Computer Science. Alyssa worked during the year 2013 in a project involving some symbolic computations of zeta functions. The results appeared in the paper *Recursion rules for the hypergeometric zeta function.* With L. Jiu and C. Vignat in *International Journal of Number Theory*, **7**, 2014, 1761 − 1782. She also worked in the summer in the problem of valuations of polynomials. The paper *A closed-form solution might be given by a tree. Valuations of quadratic polynomials*, J. Fink, G. Lavigne, I. Nogues, A. Kesarwani, S. Rajasekaran, A Yuan, L. Almodovar, X. Guan. A. Kesarwani, L. Medina and E. Rowland has been submitted to *Mathematics Magazine*. She also was a participant in the MSRI-UP Summer Program at Berkeley in 2014 and is now considering offers for graduate school in Computer Science.

19. Julie Fink
She graduated Tulane and is now working in New York City.

20. Gary Levine
He is a senior and is applying to graduate schools.

21. Pamina Buechner
Honor thesis: A generalized modular relation in Ramanujan's Lost Notebook, 2015. She is currently a graduate student in Australia.

22. Senthil Rajasekaran
Honor thesis: p-adic valuations of harmonic denominators, 2015. He is currently a Master's candidate at Cambridge University.

23. Eric Samore
Honor thesis: Landen transformations, 2016.

SERVICE:

Conference and Seminar Organization.

- Organized Clifford Lectures, 1995. Principal speaker: Peter Sarnak. *General overview of spectral problems coming from arithmetical manifolds.*
- Organized a special session on *Sums and Integrals throughout Mathematics* at the Annual AMS Meeting, New Orleans 2001.
- Tulane Science Scholars Program. 1999, 2000 and 2002. Each year I taught a four week course in Number Theory for prospective Freshman.
- Invited series of lectures at *Universidad Santa Maria, Valparaiso, Chile.* I gave a series of lectures on my work.
- Seminar leader at the REU (Research Experience for Undergraduates) at SIMU (Summer Institute for Undergraduates). This is a summer research program hosted by the University of Puerto Rico at Humacao and supported by NSF, NSA and the University of Puerto Rico. Summer 2000 and 2002.
- NSF Panel on Course, Curriculum and Laboratory Improvement (CCLI) Program.
- Invited series of lectures at *Universidad Autonoma de Yucatan, Merida, Mexico.* Series of lectures on my work.
- Organized Clifford Lectures, May 2005. Principal speaker: Jonathan Borwein. *Experimental (Computational) Mathematics and its philosophical implications.*
- Mini-course at the Joint Meetings in San Antonio, Texas, January 2006. Jointly with David Bailey, Jonathan Borwein, Neil Calkin, Russell Luke and Roland Girgensohn. The title of the course is: *Experimental Mathematics in Action.*
- Invited main speaker at *Semana de la Matematica*, October 2006, Valparaiso, Chile.
- Organized Special Session on Experimental Mathematics at the 2007 Joint Meeting of the AMS, New Orleans.
- Main invited lecturer to *Euler day.* Temple University, April 2007.
- Organized Experimental Mathematics Day, March 2008.
- REU program at MSRI, 7 week program, Summer 2008.
- Organized Special Session on Experimental Mathematics at the 2009 Joint Meeting of the AMS, Washington, D.C.
- Member of HRAC: Human Resources Advisory Committee at MSRI, 2007-2010.
- Organized conference on Multiple Zeta Values, Feynman diagrams and Integrals, Tulane, May 2009.
- Organized Clifford Lectures, April 2010. Principal speaker: Richard Stanley. *Lattice point enumeration.*
- Organized Special Session on Feynman diagrams at the 2011 Joint Meetings, New Orleans.

- Organized Special MAA Session named *The Rebirth of Special Functions* at the 2011 Joint Meetings, New Orleans.
- American Mathematical Society, 92nd meeting. Invited address. Louisville, Kentucky, October 5th, 2013.
- Keynote speaker at the International Conference on Orthogonal Polynomials and q-Series, University of Central Florida, May 2015.
- Main speaker at the 'Segunda Jornada de Métodos Combinatorios'. Universidad Sergio Arboleda, September 29th to October 2nd, 2015; Bogotá, Colombia.
- Organized Clifford Lectures, November 2016. Principal speaker: Pierre van Moerbeke. *Random Matrices, Combinatorics and Tiling Problems.*

Refereed papers for journals including:

- American Mathematical Monthly.
- Colloquium Mathematicum.
- Electronic Journal of Combinatorics.
- Journal of Mathematical Analysis and Applications.
- Journal of Number Theory.
- The Ramanujan Journal.
- International Journal of Number Theory
- Scientia

INVITED LECTURES:

1. Yale University, New Haven, Connecticut, April 1984.
2. Temple University, Philadelphia, PA, April 1984.
3. SIAM Meeting in Nonlinear Reaction Diffusion Systems, Pittsburgh, PA, June 1985.
4. Michigan State University, East Lansing, Michigan, October 1985.
5. AMS Meeting, Mathematical Biology, New Orleans, LA, January 1986.
6. Michigan State University, East Lansing, Michigan, February 1986.
7. University of Delaware, Newark, Delaware, March 1986.
8. University of New Orleans, New Orleans, LA, April 1987.
9. International Congress on the Theory and Applications of Differential Equations, Columbus, Ohio, March 1988.
10. Nineteenth Annual USL Mathematics Miniconference, Lafayette, LA, October 1988.
11. Physics Colloquium, University of New Orleans, New Orleans, LA, April 1987.
12. Instituto de Investigaciones en Matematicas Aplicadas y Sistemas, UNAM, Mexico City, October 1988.
13. Eleventh Dundee Conference on Differential Equations, Dundee, Scotland, July 1990.
14. Washington State University, Pullman, Washington, March 1991.
15. University of Utah, Salt Lake City, Utah, April 1991.

16. International Congress on the Theory and Applications of Differential Equations, Edinburgh, Texas, May 1991.
17. Santa Fe Institute for Nonlinear Science, May 1991.
18. Southeastern Atlantic Regional Conference on Differential Equations, February 1993.
19. The Second World Congress of Nonlinear Analysis, Athens, Greece, July 1996.
20. Topics in Number Theory, Penn State, July 1997.
21. University of New Orleans, New Orleans, LA, November 1997.
22. University of South Alabama, Mobile, February 1998.
23. AMS Meeting # 933, Philadelphia, April 1998.
24. Temple University, Philadelphia, April 1998.
25. Southeastern Louisiana University, October 1998.
26. Nonlinear Differential Equations. Conference in honor of Alan Lazer, Miami, January 1999.
27. AMS Meeting # 941, Urbana, Illinois, March 1999.
28. Departamento de Matematicas, Universidad Santa Maria, Valparaiso, Chile, series of lectures, July-August 1999.
29. Departamento de Fisica, Universidad de Valparaiso, Valparaiso, Chile, July 1999.
30. Universidad Catolica, Santiago, Chile, July 1999.
31. SACNAS National Meeting, Portland, Oregon, October 1999.
32. Stennis Space Center, National Research Laboratories, Alabama, December 1999.
33. National Security Agency, January 2000.
34. AMS Meeting # 107, New Orleans, January 2001.
35. SIMU 2001, University of Humacao, Puerto Rico, April 2001.
36. Departamento de Fisica, Universidad Santa Maria, Valparaiso, Chile, August 2001.
37. AMS Meeting # 980, Madison, Wi., October 2002.
38. Colloquium, University of Humacao, Puerto Rico, February 2003.
39. Plenary lecture at XVIII SIDIM (Annual Meeting of the Puerto-Rican Mathematical Society, Ponce, February 2003.
40. AMS Meeting # 984, Baton Rouge, La., March 2003.
41. Colloquium, Xavier University, March 2003.
42. Colloquium, University of New Mexico, Albuquerque, April 2003.
43. Colloquium, University of Utah, Salt Lake City, September 2003.
44. Loyola University of New Orleans, November 2003.
45. Mathematical Skirmish, Tulane University, February 2004.
46. Colloquium, Loyola Marimount, Los Angeles, March 2004.
47. Colloquium, Harvey Mudd College, Claremont, Ca., March 2004.
48. Number Theory Seminar, UCLA, March 2004.
49. Experimental Number Theory Workshop, Oakland, March 2004.
50. Colloquium, Universidad Autonoma de Yucatan, Merida, Mexico, May 2004.
51. Primer Curso de Modelacion Matematica, Ciudad Universitaria, San Salvador, January 2005.
52. Pi Days at Tulane: special lecture on π for undergraduates, March 2005.

53. Experimental Mathematics Seminar, Rutgers University, March 2005.
54. Nanjing University, Nanjing, China, June 2005.
55. Clemson University REU Program, June 2005.
56. MathFest, Albuquerque, New Mexico, August 2005.
57. Courant Institute, New York, November 2005.
58. Temple University, Philadelphia, November 2005.
59. Probability, Geometry and Integrable systems. MSRI, Berkeley, December 2005.
60. Colloquium, Vassar College, April 2006.
61. AMSSI: Applied Mathematical Sciences Summer Institute, Pomona, California, July 2006.
62. Colloquium, Haverford College, March 2007.
63. Discrete Mathematics Seminar, Temple University, March 2007.
64. AMS Meeting, Phoenix, Arizona, April 2007.
65. Euler Day, Temple University, April 2007.
66. SACNAS National Meeting, Kansas City, October 2007.
67. Computational Science Center, Tulane University, October 2007.
68. Experimental Mathematics Seminar, Rutgers University, November 2007.
69. Colloquium, Johannes Kepler University, Linz, Austria, January 2008.
70. Symbolic Computation Group, RISC, Linz, Austria, January 2008.
71. Colloquium, Drexel University, Philadelphia, April 2008.
72. Colloquium, Grinnell College, Iowa, April 2008.
73. The mathematical interests of Peter Borwein. Simon Fraser University, Burnaby, British Columbia, Canada, May 2008.
74. Special session on Asymptotics Methods, Joint Mathematical Meetings, Washington, D.C., January 2009.
75. Math. Club, Louisiana State University, March 2009
76. Center for Combinatorics, Department of Mathematics, Nankai University, Nankai, China, July 2009
77. Experimental Mathematics Seminar, Rutgers University, New Jersey, September 2009
78. Colloquium, Rutgers University, New Jersey, September 2009
79. SACNAS National Meeting, Dallas, October 2009.
80. OslerFest, Rowan University, April 2010.
81. From $A = B$ to $Z60$. A conference to celebrate Doron Zeilberger $60th$ birthday, DIMACS, May 2010.
82. Colloquium, Johannes Kepler University, Linz, Austria, July 2010.
83. The Renaissance of Combinatorics. Advances-Algorithms-Applications. In honor of Doron Zeilberger's 60th birthday, Center for Combinatorics, Nankai University, Tianjin, China, August 2010.
84. Colloquium, Computer Science Department, Universidad Santa Maria, Valparaiso, Chile, November 2010.
85. Colloquium, Departamento de Matematicas, Universidad de Puerto Rico, Rio Piedras, Puerto Rico, April 2011.

86. Algebraic Geometry Seminar, Departamento de Matematicas, Universidad de Puerto Rico, Rio Piedras, Puerto Rico, April 2011.
87. Waterloo Workshop in Computer Algebra, W80. In honor of Herbert S. Wilf 80th birthday, May 2011.
88. Colloquium. Department of Mathematics, National Technical University of Athens, Athens, Greece, July 2011.
89. Combinatorics Seminar, MIT, October 2011.
90. Experimental Mathematics Seminar, Rutgers University, November 2011.
91. JonFest-down under. Conference to celebrate Jon Borwein's 60^{th} birthday. CARMA, Newcastle, Australia, December 2011.
92. Colloquium, College of Holy Cross, Worcester, MA., April 2012.
93. AMS Meeting, Tucson, Arizona, October 2012.
94. Ramanujan 125. A conference to commemorate the 125th anniversary of Ramanujan's birthday, University of Florida, Gainesville, November 2012.
95. Marvin Knopp memorial conference, Temple University, Philadelphia, November 2012.
96. Colloquium, Temple University, Philadelphia, February 2013.
97. Undergraduate seminar, Temple University, Philadelphia, February 2013.
98. Colloquium, Loyola Marimount, Los Angeles, April 2013.
99. Research Experience for Graduate Students, University of Illionois at Urbana-Champaign, July 2013.
100. SIAM Conference on Applied Algebraic Geometry, Colorado State University, Fort Collins, Colorado, August 2013.
101. American Mathematical Society, 92nd meeting. Invited address. Louisville, Kentucky, October 5th, 2013.
102. AMS Meeting, Philadelphia, Temple University, October 2013.
103. Universite Orsay, Paris Sud, LSS Supelec, November 2013.
104. AMS Meeting, Lubbock Texas Tech University, April 2014.
105. OEIS Conference, DIMACS, October 2014.
106. SACNAS session on Discrete Mathematics, Los Angeles, October 2014.
107. Colloquium Louisiana State University, October 2014.
108. Instituto de Matemáticas, Universidad Católica, Valparaíso, Chile, December 2014.
109. Liceo Coeducacional de Quilpué,
Special Lecture to High School students, Quilpué, Chile. December, 2014.
110. Séminaire Signal de l'Université Paris-Saclay, Paris Sud, LSS Supelec, July 2015.
111. Colloquium, Universidad Sergio Arboleda, Bogotá, Colombia, October 2015.
112. Colloquium, University of Illinois at Urbana-Champaign, February 2016.
113. Number Theory Seminar, University of Illinois at Urbana-Champaign, February 2016.
114. K. Alladi birthday Conference, University of Florida, Gainesville, March 2016.
115. Special lecture: Graduate students colloquia, Tulane University, January 2017.
116. Colloquium, Departamento de Matematicas, Universidad de Puerto Rico, Rio Piedras, Puerto Rico, February 2017.

117. Southern Regional Number Theory Conference. In honor of the retirement of Robert Perlis, Louisiana State University, Baton Rouge; April 2017.
118. Algorithmic Combinatorics, ACA 2017, Jerusalem, Israel; July 2017. Special session in memory of Jonathan Borwein.

TULANE SERVICE:

Department Committees

- Undergraduate Coordinator, 1993-1995 and 1997-1999.
- Co-organizer of the Lousiana Skirmish, November 2001,2002.
- Colloquium coordinator.
- Mathematics major adviser.
- Executive Committee.
- Hiring Committee.
- Graduate Studies Committee.

College Wide Committees

- Fresman Adviser.
- Calendar Committee, 1999-2000.
- Conduct Code Judicial Committee, 1999-2000.
- Senate Athletics Committee, 2000.
- Newcomb Honor Board, 2002.
- Senate's Committee on Student Affairs, 2003-2006.
- Promotion and Tenure Committee, 2009-2012.
- University Senate, 2016-2019.

COURSES TAUGHT:

Graduate courses

- Algebra.
- Analysis.
- Applied Mathematics.
- Classical Mechanics.
- Combinatorics.
- Diophantine Equations.
- Elliptic Curves.
- Experimental Mathematics.
- Integrable Systems.
- Modular Forms.
- Number Theory.

- Partial Differential Equations.
- Probability.
- Random Combinatorics.
- Riemann Surfaces.
- Riemann Zeta Function.
- Scattering and integrable systems.
- Special Functions.

Upper Division Courses

- Abstract Algebra: Math 311 and Math 412.
- Analytical Methods in Applied Mathematics: Math 347.
- Combinatorics: Math 320.
- Complex Analysis: Math 430.
- Experimental Mathematics: Math 314.
- Linear Algebra: Math 309.
- Number Theory: Math 365.
- Probability: Math 307.
- Real Analysis: Math 305 and Math 406.

Lower Division Courses

- Freshman Seminar.
- Probability and Statistics: Math 111.
- Calculus: Math 115, 116, 121, 122, 131, 131H, 221, 221H.
- Discrete Mathematics: Math 217.
- Introduction to Applied Mathematics: Math 224.

Reading Courses

- Number Theory
- Mathematica
- Symbolic Algebra
- Random permutations

CONTACT:

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