KENNETH D T-R MCLAUGHLIN

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CHRONOLOGY OF EDUCATION

MAJOR FIELDS OF INTEREST	**Integrable nonlinear PDEs, Random Matrix Theory, Approximation Theory**
1990-1994	**Ph.D in Mathematics** Courant Institute of Mathematical Sciences Teaching Assistant, Fall 1990 - Spring 1992 Research Assistant, Fall 1992 - July 1994 **Thesis:** A Continuum Limit of the Toda Lattice **Advisor:** Percy Deift
1987-1989	**B.A. Mathematics** New York University
	Date of Birth: March 23, 1969

CHRONOLOGY OF EMPLOYMENT

July 2005 - Present (Leave w/out pay, 2009)	**Professor of Mathematics** University of Arizona Department of Mathematics
2009 - 2010	**Professor Títular** Universidade de Brasília Departamento de Matemática
July 2007 - July 2008	**Acting Associate Head for the Graduate Program** University of Arizona Department of Mathematics
August 2004 - July 2005	**Associate Professor of Mathematics** University of Arizona Department of Mathematics
July 2000 - August 2004	**Associate Professor** University of North Carolina at Chapel Hill Department of Mathematics
August 1997	**Associate Professor** University of Arizona Department of Mathematics
January 1998 - June 1998	**Visiting Lecturer**

	Princeton University Department of Mathematics (Leave without Pay from University of Arizona)
September 1996-August 1997	**Visiting Fellow** Princeton University Department of Mathematics
October 1995-July 1998	**NSF Postdoctoral Fellowship Recipient** Riemann Hilbert problems and Integrable Systems
September 1994-August 1997	**Assistant Professor (non tenure-track)** The Ohio State University Department of Mathematics
Fall 1990-September 1994	**Teaching / Research Assistant** New York University Courant Institute of Mathematical Sciences
1987 – 1989	**Undergraduate Tutoring Fellow** New York University

VISITING RESEARCH POSITIONS

September 1 – November 30, 2013	**Chercheur Centre National de la Recherche Scientifique,** Université de Bourgogne, Dijon, France.
June 7 – July 7, 2012	**Visiting Professor**, Scuola Internazionale Superiore di Studi Avanzati.
May 9 – June 7, 2012	**Professeur Invité** Université de Bourgogne, Dijon, France.
Fall 2010	**Research Professor**, Mathematical Sciences Research Institute, Berkeley, CA.
March – July 2003	**Visiting Faculty**, Pontificial Catholic University of Rio de Janeiro, Brazil.
April 15-June 1, 2002	**Kapita Selecta Visiting Professor**, Katholieke Universiteit Leuven, Belgium.
June, 2001	**Professeur Invité**, Ecole Normale Superieur, Paris, France.
June 2000	**Professeur Invité**, Université de Paris VII.
January–July 1999	**Member, Mathematical Sciences Research Institute,** Program in Random Matrix Models and Their Applications.

HONORS AND AWARDS

1987-1989	Presidential Scholarship, New York University
1989	Perley Lenwood Thorne Award for Outstanding junior math major
1989	Phi Beta Kappa

	NSF Postdoctoral Fellowship Recipient
1995-1998	Riemann Hilbert problems and Integrable Systems

"FANCY LECTURES"

November 7, 2008	Michigan State University Science at the Edge Lecture Series "Crazy Limits: Random Matrices, Random Tilings, the Asymptotic Analysis that Relates Them". http://biomodel.msu.edu/seminar/poster-f08.pdf
March 9, 2012	Pacific Institute of Mathematical Sciences Applied Mathematics Lecture Series, University of Saskatchewan. "Oscillatory phenolmenon in a scaling Limit for the periodic Linear Schrödinger equation". http://artsandscience.usask.ca/news/items/11W_Mar%209,%202012_McLaughlin_PIMS_Szmigielski.pdf

SERVICE / OUTREACH

International Conferences Organized

Co-organizer, Conference on Integrable Systems, Random Matrix Theory, and Combinatorics, October 23-27, 2013, University of Arizona (NSF-DMS 1343901, $49,000.00(approx.))

Co-organizer, Focused Research Group: The dbar method: Inverse scattering, nonlinear waves, and random matrices, Banff International Research Station, with Peter Perry (U. Kentucky), July 29 – August 5, 2012.

Co-organizer, Workshop on Random Matrix Theory and Its Applications, at the Mathematical Sciences Research Institute, Berkeley, CA, with Jinho Baik (Michigan), Percy Deift (NYU), Alexander Its (IUPUI), and Craig A. Tracy (UC Davis), September 13-17, 2010.

Co-organizer, Workshop on Random Matrices, Inverse Spectral Methods and Asymtotics, at the Banff International Research Station, Banff, Canada, with Estelle Basor (Cal. Poly.), Marco Bertola (Concordia, Montreal), Bertrand Eynard (Saclay), John Harnad (Concordia), and Alexander Its (IUPUI), August 25-30, 2008.

Co-organizer, Workshop on Random Matrices, Related Topics and Applications, at the Centre de Recherche Mathematiques, Montreal, Canada, with Estelle Basor (Cal. Poly.), Marco Bertola (Concordia, Montreal), Bertrand Eynard (Saclay), and Alexander Its (IUPUI), August 25-30, 2008.

Co-organizer, Integrable systems, random matrices, and applications, at the Courant Institute of Mathematical Sciences. with Jinho Baik (Courant Institute), Thomas Kriecherbauer (Univ. Bochum), Luen-Chau Li (Penn State), Peter Sarnak (Princeton), Carlos Tomei (PUC-Rio), and Xin Zhou (Duke University), May 22-26, 2006.

Co-organizer, Spectral theory and inverse spectral theory for Jacobi operators AMS-IMS-SIAM Summer Research conference, Snowbird, Utah, with Svetlana Jitomirskaya (UC Irvine) and Xin Zhou (Duke University), June 8-12, 2003.

Co-organizer, Asymptotics of integrable partial differential equations, Riemann-Hilbert problems and related topics Special session of Sectional Meeting of American Mathematical Society, Orlando, FL. with Alexander Tovbis (University of Central Florida), November 9-10, 2002.

Co-organizer, Asymptotics for random matrix models and their applications Special session of Sectional Meeting of American Mathematical Society, Montreal, Quebec, Canada. with Nicholas Ercolani (University of Arizona), May 2-5, 2002.

Co-organizer, Integrable systems and Riemann-Hilbert problems Special session of Sectional Meeting of American Mathematical Society, Birmingham, AL., with Xin Zhou (Duke University), Nov. 10-12, 2000.

Co-organizer, Institute for Mathematics and its Applications (IMA) Workshop: Dispersive Corrections to Transport Equations with C. D. Levermore (Univ. of Arizona), Anton Arnold (Univ. des Saarlandes), and Naoufel Ben Abdallah (Univ. of Toulouse), 1999-2000.

Co-organizer: Integrable Systems and Random Matrix Theory Special Session of Sectional Meeting of American Mathematical Society, with Craig Tracy (UCDavis), Nov. 14-15, 1998.

Co-organizer of ``Arizona Days'' Joint conference between University of Arizona Math Dept. and Los Alamos National Laboratory with Joceline Lega, January 1998.

Departmental Committees

2012-Present **Personnel Committee**

2011-Present **Graduate Committee**

2008-2009 **Promotion and Tenure Committee**

2007-2008 **Acting Associate Head for the Graduate Program**

2006-2008 **Peer Review Committee**

2005-2008 **Graduate Committee member**

2003-2004 **Director of Graduate Studies** (UNC)

2000-2003 **Graduate Committee member**

2001-2002 **Applied Mathematics Computer Committee**

2001 **Linker Award Committee**

Other Committees

2000-2003 **Co-organizer: Analysis Seminar** with John Pfaltzgraff and Norberto Kerzman (UNC)

1999-2000 **Co-organizer: Applied Mathematics PDE seminar** with Lennie Friedlander.

1998 **Co-Chair: Colloquium in Applied Mathematics** Program in Applied Mathematics, University of Arizona, with Joceline Lega.

2004 **Organizer: Analysis and its Applications seminar.**

PUBLICATIONS

1. **A Continuum Limit of the Toda Lattice.** (Thesis) by K. T-R McLaughlin; Advisor: P. A. Deift September 1994.

2. **A Continuum Limit of the Toda Lattice.** P.A. Deift and K. T-R McLaughlin *Memoirs of the AMS* **131** #624, 1-216, January 1998. (submitted July, 1995)

3. **Explicit Integration of the Full Symmetric Toda Hierarchy and the Sorting Property.** Y. Kodama and K. T-R McLaughlin. *Lett. Math. Phys.*, **37**: 37-47, 1996.

4. **New Results for the Equilibrium Measure of Logarithmic Potentials with External Fields Obtained via the Inverse Spectral Method.** P. Deift, T. Kriecherbauer, and K. T-R McLaughlin *J. Approx. Theory*, **95**, 388-475 (1998) (88 pages).

5. **Onset of oscillations in nonsoliton pulses in nonlinear dispersive fibers.** M. Gregory Forest and K. T-R McLaughlin. *Journal of Nonlinear Science* **7**: 43-62 (1998).

6. **Asymptotics for Polynomials Orthogonal With Respect to Varying Exponential Weights**

P. Deift, T. Kriecherbauer, K. T-R McLaughlin, S. Venakides, and X. Zhou *International Mathematical Research Notices* 1997, No. 16: 759- 782.

7. **Strong Asymptotics of Orthogonal Polynomials with Respect to Exponential Weights.** P. Deift, T. Kriecherbauer, K. T-R McLaughlin, S. Venakides, and X. Zhou *Comm. Pure and Appl. Math*, **52** (1999), no. 12, 1491—1552 (62 pages).

8. **Uniform Asymptotics for Polynomials Orthogonal with respect to Varying Exponential Weights and Applications to Unversality Questions in Random Matrix Theory** P. Deift, T. Kriecherbauer, K. T-R McLaughlin, S. Venakides, and X. Zhou *Comm. Pure and Appl. Math*, **52** (1999), no. 11, 1335—1425 (91 pages).

9. **Uniform Asymptotics for Orthogonal Polynomials**
P. Deift (Lecturer), T. Kriecherbauer, K. T-R McLaughlin, S. Venakides, and X. Zhou. *Proceedings of the International Congress of Mathematicians,* Vol. III. *Doc. Math*. 1998, Extra Vol. III, 491-501.

10. **Strong Asymptotics of Polynomials Orthogonal with Respect to Freud Weights.** T. Kriecherbauer and K. T-R McLaughlin. *International Mathematics Research Notices* 1999, No. 6, 299-333.

11. **Exact Solution of the Geometric Optics Approximation of the Defocusing nonlinear Schrödinger Equation.**
O. Wright, M.G. Forest, and K. T-R McLaughlin.
Physics Letters A 257 (1999) 170-174.

12. **Nonsoliton pulse evolution in normally dispersive fiber.**
M.G. Forest, J. N. Kutz and K. T-R McLaughlin.
J. Opt. Soc. Am. B. **16** (1999), No. 11, 1856-1862.

13. **Some Riemann-Green functions for the geometric optics approximation of the defocusing nonlinear Schrodinger equation.** O. Wright, M.G. Forest, and K. T-R McLaughlin. *Proceedings of the 16th IMACS World Congress* **41** *(4), Editors M. Deville, R. Owens, ISBN 3-9522075-1-9 (2000).*

14. **Generic behavior of the density of states in random matrix theory and equilibrium problems in the presence of real analytic external fields.** A. Kuijlaars and K. T-R McLaughlin *Comm. Pure and Appl. Math.* Vol. LIII (2000), 736-785 (50 pages).

15. **Asymptotics and Integrable Structures for Biorthogonal Polynomials Associated to a Random Two-Matrix Model.** N. Ercolani and K. T-R McLaughlin
in Advances in nonlinear mathematics and science
Phys. D **152/153** (2001), 232--268.

16. **Long time behavior of the continuum limit of the Toda lattice, and the generation of infinitely many gaps from C^∞ initial data.** A. Kuijlaars and K. T-R McLaughlin.

Communications in Mathematical Physics. **221,** 305-333 (2001).

17. **A Riemann--Hilbert approach to asymptotic questions for orthogonal polynomials.** P. Deift, T. Kriecherbauer, K. T-R McLaughlin, X. Zhou, and S. Venakides. *J. Comput. Appl. Math.* **133**: 47-63 (2001).

18. **Optimal tail estimates for directed last passage site percolation with geometric random variables.** J. Baik, P. Deift, K. T-R McLaughlin, P. Miller, and X. Zhou. *Advances in Theoretical and Mathematical Physics* **5** (2001) no. 6, 1207-1250. Available online at arXiv:math.PR/0112162 (48 pages).

19. **Riemann--Hilbert analysis for Laguerre polynomials with large negative parameter.** A. Kuijlaars and K. T-R McLaughlin. *Computational Methods and Function Theory* **1** (2001), no. 1, 205-233. Available online at arXiv:math.CA/0204248.

20. **Semiclassical soliton ensembles for the focusing nonlinear Schr\"o- dinger equation.** S. Kamvissis, K. T-R McLaughlin, and P. D. Miller. *Annals of Mathematics, Studies Series,* **154** (2003), 1-265. Available online at: http://xxx.lanl.gov/ps/nlin.SI/0012034.

21. **Asymptotic zero behavior of Laguerre polynomials with negative parameter.**A. Kuijlaars and K. T-R McLaughlin. *Constructive Approximation,* **20** (2004) 497-523. Available online at arXiv:math.CA/0205175.

22. **Asymptotics of the partition function for random matrices via Riemann-Hilbert techniques, and applications to graphical enumeration.** N. Ercolani and K. T-R McLaughlin. *International Mathematics Research Notices* **2003**, no. 14, 755-820. Available online at arXiv:math-ph/0211022 (66 pages).

23. **Uniform asymptotics for polynomials orthogonal with respect to a general class of discrete weights and universality results for associated ensembles: announcement of results.** J. Baik, T. Kriecherbauer, K. T-R McLaughlin, and P.D. Miller. *International Mathematics Research Notices* **2003**, no. 15, 821-858. Available online at arXiv:math.CA/0212149.

24. **The Riemann–Hilbert approach to strong asymptotics for orthogonal polynomials on** [-1,1]. A. Kuijlaars, K. T-R McLaughlin, W. van Assche, and M. Vanlessen. *Advances in Mathematics* **188** (2004), 337-398. Available online at arXiv:math.CA/0111252.

25. **Uniform asymptotics for polynomials orthogonal with respect to a general class of discrete weights and universality results for associated ensembles.** J. Baik, T. Kriecherbauer, K. T-R McLaughlin, and P. Miller. *Annals of*

Mathematics Studies Series, **164**. Available online at arXiv:math.CA/0310278v1. (170 pages)

26. **Applications of a complete expansion for the partition function of random matrix theory.** K. T-R McLaughlin. Proceedings of the 14th International Congress on Mathematical Physics, 364-371, World Sci. Publ., Hackensack, NJ, 2005.

27. **A Riemann-Hilbert problem for biorthogonal polynomials.** A.B.J. Kuijlaars and K. T-R McLaughlin. *Journal of Computational and Applied Mathematics.* 178 (2005) 313-320.

28. **The [dbar] steepest descent method and applications to polynomials orthogonal on the unit circle with fixed and exponentially varying nonanalytic weights.** K. T-R McLaughlin and P. Miller. *IMRP Int. Math. Res. Pap.* **2006**, Art. ID 48673, 1-77. Available online at arXiv: math.CA/0406484

29. **Szegö orthogonal polynomials with respect to an analytic weight: canonical representation and strong asymptotics.** A. Martinez-Finkelshtein, K. T-R McLaughlin, and E.B. Saff. *Constr. Approx.* **24** (2006), no. 3, 319-363.

30. **Asymptotics of orthogonal polynomials with respect to an analytic weight with algebraic singularities on the circle.** A. Martinez-Finkelshtein, K. T-R McLaughlin, and E.B. Saff. *Int. Math. Res. Not.* **2006**, Art. ID 91426, 43 pp.

31. **A nonlinear Gibbs-type phenomenon for the defocusing nonlinear Schroedinger equation.** J. C. DiFranco and K. T-R McLaughlin. *IMRP Int. Math. Res. Pap.* **2005**, no. 8, 403-459.

32. **Asymptotics of Laurent polynomials of even degree orthogonal with respect to varying exponential weights.** K. T-R McLaughlin, A. H. Vartanian, and X. Zhou. *IMRP Int. Math. Res. Pap.* **2006**, Art. ID 62815, 215 pp.

33. **Asymptotics of Laurent Polynomials of Odd Degree Orthogonal with Respect to Varying Exponential Weights.** K. T-R McLaughlin, A. H. Vartanian, and X. Zhou. *Constructive Approximation,* **27** (2008), no. 2, 149-202.

34. **Asymptotic analysis of random matrices with external source and a family of algebraic curves.** K. T-R McLaughlin. *Nonlinearity,* **20** (2007), no. 7, 1547-1571.

35. **A Quick Derivation of the Loop Equations for Random Matrices.** N. M. Ercolani and K. T-R McLaughlin. Probability, Geometry, and Integrable Systems for Henry McKean's Seventy-Fifth Birthday, Mark Pinsky and Bjorn Birnir, Editors. Cambridge University Press, Cambridge, 2007.

36. **Random Matrices, Graphical Enumeration and the Continuum**

Limit of Toda Lattices. N. M. Ercolani, K. T-R McLaughlin, and V. U. Pierce. *Comm. Math. Phys* **278** (2008), no. 1, 31-81.

37. **Asymptotics of Recurrence Relation Coefficients, Hankel Determinant Ratios, and Root Products Associated with Laurent Polynomials Orthogonal with Respect to Varying Exponential Weights.** K. T-R McLaughlin, A. H. Vartanian, and X. Zhou. *Acta Applicandae Mathematicae,* **100,** (2008), no. 1, 39-104.

38. **The d-bar Steepest Descent Method for Orthogonal Polynomials on the Real Line with Varying Exponential Weights.** K. T-R McLaughlin and P. D. Miller. *Int. Math. Res. Not.* **2008**, Art. ID rnn075, 66 pp.

39. **Rational Functions with a General Distribution of Poles on the Real Line Orthogonal with Respect to Varying Exponential Weights: I.** K. T-R McLaughlin, A. H. Vartanian, and X. Zhou. *Mathematical Physics, Analysis and Geometry* **11** (2008), no. 3-4, 187-364.

40. **Locating the zeros of partial sums of *exp(z)* with Riemann-Hilbert methods.** *Integrable systems and random matrices,* 183-195, Contemp. Math., 458, *Amer. Math. Soc., Providence, RI,* 2008.

41. **Solutions to the Nonlinear Schrodinger Equation with Sequences of Initial Data Converging to a Dirac Mass.** K. T-R McLaughlin and J. P. Newport.*Physica D: Nonlinear Phenomena, vol. 239, no. 23, pp. 2050-2056, 2010.*

42. **The semi-classical limit of focusing NLS for a familty of non-analytic initial data.** R. Jenkins and K. T-R McLaughlin. *To appear, Comm. Pure Appl. Math.*

CONFERENCE PROCEEDINGS

43. **New Results for the Asymptotics of Orthogonal Polynomials and Related Problems via the Lax-Levermore Method.** P. Deift, T. Kriecherbauer, and K. T-R McLaughlin. *Proceedings of Symposia of Applied Mathematics* Volume 54, 1998, 87-104.

44. **The nonlinear Schrödinger equation as both a PDE and a dynamical system.** D. Cai, D. W. McLaughlin, and K. T-R McLaughlin. *Handbook of dynamical systems, Vol. 2*, 599-675, 2002.

45. **Recent developments in integrable systems and**

Riemann-Hilbert problems. Proceedings of special session of AMS meeting, November 10-12, 2000, Birmingham Alabama. Kenneth D. T-R McLaughlin and X. Zhou, Editors. *Contemporary Mathematics* **326**, American Mathematical Society Publications, 2003.

SUBMITTED PAPERS

1. **Long-time asymptotics for the NLS equation via d-bar methods.** M. Dieng and K. T-R McLaughlin.

2. **Strong asymptotics of the orthogonal polynomials with respect to a measure supported on the plane.** F. Balogh, M. Bertola, S. Y. Lee, and K. T-R McLaughlin.

WORK IN PROGRESS

Semiclassical Analysis of the Focusing Nonlinear Schrödinger equation. K. T-R McLaughlin, P. D. Miller (Univ. of Michigan), J. Bronski (Univ. Illinois Urbana-Champaign).

Numerical solution of the inverse problem associated to the Z-S Spectral problem for the defocusing NLS equation K. T-R McLaughlin.

Large deviations for the largest eigenvalue.

Breakdown of universality in gap statistics. Work with Kriecherbauer (Univ. of Bochum, Germany).

The normal matrix model, two dimensional orthogonal polynomials, asymptotic behavior and applications to Lacplacian growth.

Fourier analysis applied to random matrix theory

Asymptotic analysis of D-bar problems and applications to integrable systems and approximation theory. K. T-R McLaughlin and P. Miller.

Universality in dispersive regularizations of shocks.

Asymptotic analysis of integrable nonlinear partial differential equation with mixed boundary data.

Random tilings

SCHOLARLY PRESENTATIONS

Invited Presentations

September 16-20, 2013 **Workshop on Hamiltonian PDEs, Frobenius Manifolds, and Deligne-Mumford Moduli Spaces. SISSA, Trieste, Italy**

September 2-13, 2013	**Advanced School and Workshop on Random Matrix Theory, International Center for Theoretical Physics, Trieste, Italy.**
August 12-16, 2013	**Exceptional Circle Helsinki Workshop**
October, 2012	**Plenary Lecture, Fall Sectional Meeting of the AMS, Tucson, AZ**
September, 2012	**Integrable Systems, Grouwth Processes and KPZ Universality, Banff International Research Station Workshop**
June 13-15, 2012	**Workshop on Geometric and Analytic Aspects of Integrable Systems, Università di Milano-Bicocca, Milano.**
February 28, 2012	**Analysis and PDE Seminar, University of Kentucky.**
June, 2011	**Mathematics Colloquium, Universiteit Bayreuth.**
June, 2011	**Mathematical Physics Seminar, International School for Advanced Studies, Trieste, Italy.**
November 3, 2011	**Mathematics Colloquium, UNC-Chapel Hill.**
November 2, 2011	**UNC-Chapel Hill Joint Applied mathematics and Analysis Seminar.**
June 22-24, 2009	**Workshop on Hamiltonian PDEs: analytical and numerical methods SISSA Trieste**
June 15-20, 2009	**School/Workshop on Integrable Systems and Scientific Computing**
June 8-12, 2010	**Integrable Systems in Pure and Applied Mathematics Conference in honour of Boris Dubrovin's 60th birthday Hotel dei Pini, Alghero - Sardinia, Italy Invited Lecture**
January 12-14, 2010	**Minicurso avançado, Escola de Verão Universidade Federal de Rio de Janeiro "Análise Assintótica de Integrais: introdução aos métodos da máxima descida e da fase estacionária"**
January, 2009	**Applied Mathematics Seminar, Stanford University**
March, 2010	**CFL condition - 80 years gone by A cellebration meeting May 3rd-7th 2010 UERJ, Rio de Janeiro Invited 1 hour lecture**
March 25, 2010	**Instituto de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil Seminário de Probabilidade e Combinatória. Random matrices beyond the usual universality classes.**

November 11, 2009 **COLÓQUIO DO DEPARTAMENTO DE MATEMÁTICA Universidade Federal de Minas Gerais. Title: "Introdução a teoria de matrizes aleatórias (e suas distribuições de autovalores)"**

September 19, 2008 **Centre de Recherche Mathematique Colloquium**

September 8-12, 2008 **International Workshop on Orthogonal Polynomials and Applications, University Carlos III, Madrid, Spain.**

August 18-23, 2008 **Workshop on Laplacian Growth and Related Topics, Centre de Recherche Mathematique, University of Montreal, Montreal, Canada.**

June 20-22, 2008 **Workshop on Asymptotic Analysis, part of Conference on Foundations of Computational Mathematics, City University of Hong Kong, Hong Kong, China.**

March 23 – 29, 2008 **Workshop on disordered systems: random Schroedinger operators and random matrices.**

February 1, 2008 **Colorado University at Boulder Probability Seminar.**

January 31, 2008 **University of Wyoming Mathematics Colloquium**

November 11-16, 2007 **Modern Approaches in Asymptotics of Polynomials, Banff International Research Station, Banff, Canada.**

September 11-15, 2007 **Random and Integrable Models in Mathematics and Physics, Belgian Royal Academy of Sciences, Brussels, Belgium.**

June 24-28, 2007 **Conference on Random Matrix Theory, Integrable Systems, and stochastic Processes, Snowbird, Utah.**

June 3-5, 2007 **Conference on Random Matrices at Cornell University.**

October 30-November3,2006 **Centre International de Recherches Mathematiques (Luminy, France)** Conference on Random Matrices: invited 1 hour survey lecture.

October 5, 2006 **UNM Mathematics Colloquium**

September 8, 2006 **Centre de Recherche Mathematique Mathematics Colloquium**

September 9-12, 2006 **SIAM Conference on nonlinear waves and coherent structures, minisymposium on semiclassical and continuum limits**

August 7-11, 2006 **International Congress of Mathematical Physics,** invited lecture in special session on random matrices

January 31, 2006 **University of Washington Applied Mathematics Seminar**

December 5, 2005 **University of Chicago Computation and Applied Mathematics / Nonlinear PDEs Seminar**

November 16, 2005 **Berkeley Applied Mathematics Seminar**

July 2005 **IX Workshop on partial differential equations, IMPA Rio de Janeiro, Brazil.** Plenary Lecture.

June, 2005 **Centre de Recherches Mathematiques Short program on Random Matrices, Random Processes, and Integrable Systems:** Presented 5 lecture series.

April 30-May 14, 2005 **Banff International Research Station Research in Teams program, on biorthogonal polynomials and random matrices.**

April 28, 2005 **ASU Mathematics Colloquium**

October, 2004 **26th Midwest Probability Colloquium,** Thursday series of 3 lectures presented by K. T-R McLaughlin and P. Miller.

October, 2004 **SIAM Minisymposium on Riemann-Hilbert problems,** Invited presentation.

April 28, 2004 **Probability Seminar,** North Carolina State University Department of Mathematics.

March 27-April 1, 2004 **Banff International Research Station Workshop: Orthogonal Polynomials, Interdisciplinary Aspects.** 50 Minute presentation.

March 15-19, 2004 **Fields Institute for Research in Mathematical Sciences Workshop on Nonlinear Wave Equations.** 50 minute presentation.

February 16-17, 2004 **23rd Western States Mathematical Physics Meeting.** 50 Minute presentation.

February 11, 2004 **Analysis Seminar, Department of Mathematics, Stanford University.**

February 9, 2004 **Joint Applied Mathematics and Probability Seminar,** Department of Mathematics, Stanford University.

October 31, 2003 **Mathematics Department Colloquium,** *Indiana University Purdue University Indianopolis.*

September 15-19, 2003 **Random Matrix Theory Workshop,** *Gregynog Hall, Wales (organized by University of Wales at Swansea).*

August 29, 2003 **Mathematics Department Colloquium,** *University of Alabama at Birmingham.*

July 28-August 2, 2003 **Invited Lecture (30 Minutes), XIVth International Congress on Mathematical Physics,** *Lisbon, Portugal.*

July 25, 2003	**Analysis Seminar,** *University of Bochum, Germany.*
July 21-25, 2003	**Conference: Infinite Dimensional Algebras and Quantum Integrable Systems.** Faro, Portugal.
July 7, 2003	**Mathematics Department Colloquium,** Universidade Federal Fluminense.
June 18, 2003	**Applied Mathematics Seminar,** *Instituto Nacional de Matematica Pura e Aplicada.*
May 14-17, 2003	**Plenary Speaker, International Conference on Advances in Constructive Approximation.** Vanderbilt University.
March-June 2003	**Weird Stuff Seminar,** *Pontificial Catholic University of Rio de Janeiro.*
October 25, 2002	**Analysis Seminar, Department of Mathematics, Georgia Institute of Technology.**
October 30, 2002	**Random Things Seminar, Department of Mathematics, Johns Hopkins University.**
November 2-4, 2002	**Arizona Applied Math Fest. Invited Speaker.**
September 23-27, 2002	**Mathematical Sciences Research Institute (MSRI) workshop on Recent Progress in Random Matrix Theory and its Applications. Invited speaker.**
July 6-12, 2002	**Institute for Pure and Applied Mathematics (IPAM) Mini-work- shop on entropy in operator algebras. Invited lecture.**
June 2-6, 2002	**Conference on Random Matrix Theory and Combinatorics. New York University, Courant Institute of Mathematical Sciences, invited speaker.**
May 29, 2002	**Analysis and Dynamical Systems Seminar, Royal Institute of Technology, Stockholm.**
April 15-June 1, 2002	**Kapita Selecta Visiting Professor, Katholieke Universiteit Leuven, Belgium.**
August 25-September 2, 2001	**Workshop on Spectral Statistics and High-Energy Eigenstates, Centre de Recherche Mathematique, Universite de Montreal. Invited Speaker.**
July 16-20, 2001	**Invited Speaker, 7th Workshop on Partial Differential Equations, Institute for Pure and Applied Mathematics, Rio de Janeiro, Brazil.**
July 6-9, 2002	**Mini-Course on Riemann-Hilbert problems, random matrix theory, and integrable systems (with X. Zhou, Duke Univ.), Physics Institute, Chinese Academy of Sciences, Beijing, China.**

June 2001	**Professeur Invité, Ecole Normale Superieur, Paris, France.**
October 2000	**Combinatorics and Random Matrix Theory Conference, Univ. Pennsylvania**
July 2000	**SIAM Activity Group on Orthogonal Polynomials and Special Functions Summer School, Laredo, Spain, Invited to give a Short Course on Orthogonal Polynomials and Riemann--Hilbert Problems.**
June 2000	**Professeur Invité, Université de Paris VII**
May 1-5, 2000	**Institute for Mathematics and its Applications (IMA) Workshop: Dispersive Corrections to Transport Equations. Co-organizer and invited to speak.**
February 2000	**19th Annual Western States Mathematical Physics Meeting, California Institute of Technology. Invited presentation.**
November 1999	**Workshop on Minimal Energy Problems, City University of Hong Kong. Invited Presentation.**
April 16, 1999	**Univ. of North Carolina at Chapel Hill Applied Mathematics Seminar.**
April 14, 1999	**IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena. Invited presentation.**
March 29 - April 2, 1999	**Fifth International Conference on Approximation and Optimization in the Caribbean, Univ. of Guyanne and The Antilles (submitted presentation).**
February 25, 1999	**Mathematical Sciences Research Institute workshop on random matrices, statistical mechanics, and integrable systems. Invited for participation and presentation.**

Seminars / Working Groups

Fall 2000	**Analysis Seminar: introduction to equilibrium measures (Four lectures)**
Fall 2000	**Applied Math Seminar: Asymptotic analysis of the Nonlinear Shrödinger equation**
Spring 2001	**Analysis Seminar: Asymptotics for the zeros of the partial sums of exp(z)**
Fall 2001	**Analysis Seminar: Asymptotic analysis of a few integrable systems (2 lectures)**
	Analysis Seminar: Introduction to Random Matrices (2

Spring 2002 **lectures)**

Fall 2002 **Visions seminar: Applied analysis and integrable systems**

Fall 2002 **Physically Inspired Mathematics Seminar: Analysis of the Partition Function of Random Matrix Theory, and Some Problems in Enumerative Geometry (2 lectures).**

2003-2004 **Analysis Seminar:** 1 lecture on random tiling problems, and 1 lecture on classical analysis.

Spring 2004 **Informal research seminar on analysis and application of the nonlinear Schroedinger equation.** Group met roughly once ever 3 weeks: Rudy Horne, Tobias Schaefer, Jason Newport, Jeffery DiFranco, Nick Costanzino.

GRANTS AND CONTRACTS

1995-1998 **National Science Foundation Postdoctoral Research Fellowship**

1999 **University of Arizona Small Research Grant, FRS Acct: 210181,** ``Numerical Solution of Riemann Hilbert problems and applications''.

1999 **National Science Foundation Grant No. DMS-9970328,** ``Riemann--Hilbert Problems in Random Matrix Theory, Approximation Theory, and Integrable Systems''. Three year continuing grant, $ 26,588.00 per year ($79,764.00 total). Jointly funded through Divisions of Analysis and Mathematical Physics.

2002 **National Science Foundation Grant No. DMS-0200749,** ``Riemann--Hilbert Problems in Random Matrix Theory, Approximation Theory, and Integrable Systems''. Three year continuing grant, $35,000.00 per year ($107,000.00 total).

2004 **National Science Foundation Focused Research Group Grant:** Collaborative Research in Semiclassical Asymptotic Questions in Integrable Nonlinear Wave Theory, $400,000.00 (estimated).

2008 **National Science Foundation Grant No. DMS-0800979:** Universality in random matrices and integrable systems: asymptotic analysis via Riemann-Hilbert and d-bar methods, $430,000.00 (estimated).

This is a true and accurate statement of my activities and accomplishments. I understand that misrepresentation in securing promotion and tenure may lead to dismissal or suspension under ABOR Policy 6-201 J.1.b.