

## VITA

**Mark J. Ablowitz**

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### EDUCATIONAL DATA:

B.S.	1967	University of Rochester Rochester, New York Mechanical Engineering
Ph.D.	1971	Massachusetts Institute of Technology Cambridge, Massachusetts Mathematics
Ph.D. Advisor:	D.J. Benney	

### EXPERIENCE:

Teaching Assistant in Mathematics, M.I.T., 1967–1971.  
Instructor, Summer Session, M.I.T., 1970.  
Assistant Professor of Mathematics, Clarkson University, 1971–1975.  
Associate Professor of Mathematics, Clarkson University, 1975–1976.  
Visiting Scholar, Program in Applied Mathematics, Princeton University, 1977–1978.  
Professor of Mathematics, Clarkson University, 1976–1979.  
Professor and Chairman, Department of Mathematics and Computer Science, Clarkson University, 1979–1985.  
Visiting Senior Scholar, Program in Applied Mathematics, Princeton University, Spring 1984.  
Dean of Science, Clarkson University, July 1, 1985–June 30, 1989.  
Professor and Director/Chair, Program/Department of Applied Mathematics, University of Colorado at Boulder, July 1, 1989–June 30, 2000.  
Professor, Department of Applied Mathematics, University of Colorado at Boulder, July 1, 2000–Present.  
Professor and Chair, Department of Applied Mathematics, University of Colorado at Boulder, July 1, 2012–June 30, 2015.  
Professor, Department of Applied Mathematics, University of Colorado at Boulder, July 1, 2015–Dec 31, 2020  
Distinguished Professor, Department of Applied Mathematics, University of Colorado at Boulder, Jan 1, 2021–

### HONORS/SIGNIFICANT ACHIEVEMENTS:

Sloan Foundation Fellowship, 1975–1977  
Clarkson Graham Research Award, 1976  
John Simon Guggenheim Foundation Fellowship, 1983

Co-director, Joint U.S.–U.S.S.R. National Academy of Sciences Symposium on Soliton Theory, Kiev, USSR 1979

Selected by U.S. National Academy of Science for scientific exchange visit to USSR, October 1984

Invited member, Institute for Theoretical Physics, University of California at Santa Barbara, Spring 1985

Council on Research and Creative Work Faculty Fellowship, University of Colorado, Boulder, 1994–1995

Member, Board of Electors, Professorship in Nonlinear Mathematical Science, Cambridge University, UK; Oct. 2000

Council on Research and Creative Work Faculty Fellowship, University of Colorado, Boulder, 2001–2002

Named as one of the most highly cited people in the field of Mathematics by the ISI Web of Science, 2003.

Conference on "Nonlinear waves, integrable systems and applications" U. Colorado, Colorado Springs June 4–7 and Boulder June 8, 2005 was held in recognition of my research contributions. Over 70 participants representing 14 countries gave lectures.

Professor of Distinction, College of Arts and Sciences, University of Colorado, Boulder, 2006.

Distinguished Research Lecturer (Included 1-yr. fellowship), Univ. of Colorado, Boulder, 2009

Society of Industrial and Applied Mathematics (SIAM) Fellow 2011–

American Mathematical Society (AMS) Fellow 2012–

Martin Kruskal Prize/Lecture: Aug. 11, 2014, Cambridge University, Awarded by SIAM (Nonlinear Waves and Coherent Structures)

Doctor Honoris Causa, Oct. 2014, University of Ioannina, Greece

Two special issues of the Journal Studies in Applied Mathematics 137, 2016, Issues 1,2 were dedicated to me in honor of my research

Member of External Review Committee, Dept. of Applied Mathematics & Statistics, Univ. Calif. Santa Cruz April 2017

Member of External Review Committee, Dept. of Applied Mathematics, Univ. of Washington, Seattle April 2018

A workshop: "Integrable Systems and Nonlinear Waves" was held in my honor at the University of Kent: July 18, 2018: five one hour talks were given

Doctor of Science, Honoris Causa, July 2018, University of Kent, Canterbury, UK

Rothschild Fellowship, Sept - Nov. 2019, Complex Analysis and Applications, Isaak Newton Mathematics Institute, Cambridge, UK

Named Distinguished Professor at the University of Colorado Four Campus System, Nov., 2020

Hazel Barnes Prize: Most prestigious single faculty award at University of Colorado Boulder; Awarded at Graduation, May 2022

Member of SIAM Fellows Selection Committee 2022–2023

More than:

20,000 citations to research papers (ISI Web of Knowledge); h-index=61

50,000 citations to research papers and books (Google Scholar); h-index=84

## BOOKS:

- Solitons and the Inverse Scattering Transform*, M.J. Ablowitz and H. Segur, SIAM Studies in Applied Mathematics, 425 pages, SIAM, Philadelphia, PA, 1981; translated into Russian and Japanese
- Solitons, Nonlinear Evolution Equations and Inverse Scattering*, M.J. Ablowitz and P.A. Clarkson, London Mathematical Society Lecture Notes Series #149, 516 pages, Cambridge University Press, Cambridge, UK, 1991; reprinted by Beijing World Press, China, 2000.
- Complex Variables: Introduction and Applications*, Mark J. Ablowitz and A.S. Fokas, 647 pages, Cambridge University Press, Cambridge, UK, 1997. Reprinted by Foundation Books, New Dehli 1998. Second Edition, 2003; Translated into Greek.
- Discrete and Continuous Nonlinear Schrödinger Systems*, M. J. Ablowitz B. Prinari and A. D. Trubatch, 258 pages, Cambridge University Press, Cambridge, UK, 2004.
- Nonlinear Dispersive Waves, Asymptotic Analysis and Solitons*, M.J. Ablowitz, Cambridge University Press, Cambridge, UK, 2011.
- Introduction to Complex Variables and Applications* Mark J. Ablowitz and A.S. Fokas, 411 pages, Cambridge University Press, Cambridge, UK, 2021.

## EDITED BOOKS:

- Topics in Soliton Theory and Exactly Solvable Nonlinear Equations*, Eds. M.J. Ablowitz, B. Fuchssteiner and M.D. Kruskal, World Scientific, 324 pages, Singapore, 1987.
- Nonlinear Physics: Theory and Experiment. II*, Eds. M.J. Ablowitz, M. Boiti, F. Pempinelli and B. Prinari, World Scientific, 421 pages, Singapore, 2003

## PATENT:

- U.S. Patent 6,049,608: *Variable Length Nonlinear Feedback Shift Registers with Dynamically Allocated Taps*, Issued April 4, 2000; Licensed to Bukhara Techtalk via University of Colorado Technology Transfer Office.

## JOURNAL ARTICLES:

1. Evolution of multi-phase modes for nonlinear dispersive waves, M.J. Ablowitz and D.J. Benney, *Stud. Appl. Math.*, **49** (1970) 225-238.
2. Applications of slowly varying nonlinear dispersive wave theories, M.J. Ablowitz, *Stud. Appl. Math.*, **50** (1971) 329-344.
3. Approximate methods for obtaining multi-phase modes in nonlinear dispersive wave problems, M.J. Ablowitz, *Stud. Appl. Math.*, **51** (1972) 17-55.
4. Semi-resonant interactions and frequency dividers, M.J. Ablowitz, B.A. Funk and A.C. Newell, *Stud. Appl. Math.*, **52** (1973) 51-74.
5. Decay of continuous spectrum for solutions of Korteweg-deVries equation, M.J. Ablowitz and A.C. Newell, *J. Math. Phys.*, **14** (1973) 1277-1284.
6. Method for solving Sine-Gordon equation, M.J. Ablowitz, D.J. Kaup, A.C. Newell and H. Segur, *Phys. Rev. Lett.*, **30** (1973) 1262-1264.
7. Nonlinear-evolution equations of physical significance, M.J. Ablowitz, D.J. Kaup, A.C. Newell and H. Segur, *Phys. Rev. Lett.*, **31** (1973) 125-127.
8. Coherent pulse propagation, A dispersive, irreversible phenomenon, M.J. Ablowitz, D.J. Kaup, and A.C. Newell, *J. Math. Phys.*, **11** (1974) 1852-1858.

9. Inverse scattering transform - fourier analysis for nonlinear problems, M.J. Ablowitz, D.J. Kaup, A.C. Newell and H. Segur, *Stud. Appl. Math.*, **53** (1974) 249-315. \*This has been judged a citation classic by Current Contents (see Current Contents, June 7, 1982, Vol. 13, No. 23).
10. Nonlinear differential-difference equations, M.J. Ablowitz and J.F. Ladik, *J. Math. Phys.*, **16** (1975) 598-603.
11. Note on resonance and nonlinear dispersive waves, M.J. Ablowitz, *Stud. Appl. Math.*, **54** (1975) 61-70.
12. Inverse scattering transform - semi-infinite interval, M.J. Ablowitz and H. Segur, *J. Math. Phys.*, **16** (1975) 1054-1056.
13. Resonantly coupled nonlinear evolution equations, M.J. Ablowitz and R. Haberman, *J. Math. Phys.*, **16** (1975) 2301-2305.
14. Nonlinear evolution equations—2 and 3 dimensions, M.J. Ablowitz and R. Haberman, *Phys. Rev. Lett.*, **35** (1975) 1185-1188.
15. Asymptotic solutions and conservation laws for the nonlinear Schrödinger equation I, H. Segur and M.J. Ablowitz, *J. Math. Phys.*, **17** (1976) 710-713.
16. Nonlinear differential-difference equations and fourier-analysis, M.J. Ablowitz and J.F. Ladik, *J. Math. Phys.*, **17** (1976) 1011-1018.
17. Nonlinear difference scheme and inverse scattering, M.J. Ablowitz and J.F. Ladik, *Stud. Appl. Math.*, **55** (1976) 213-229.
18. Solution of a class of nonlinear partial difference equations, M.J. Ablowitz and J.F. Ladik, *Stud. Appl. Math.*, **57** (1977) 1-12.
19. Nonlinear evolution equations, continuous and discrete, M.J. Ablowitz, *SIAM Review*, **19** (1977) 663-684 (invited article).
20. Asymptotic solutions of Korteweg-deVries equation, M.J. Ablowitz and H. Segur, *Stud. Appl. Math.*, **57** (1977) 13-44.
21. Exact linearization of a Painlevé transcendent, M.J. Ablowitz and H. Segur, *Phys. Rev. Lett.*, **38** (1977) 1103-1106.
22. Solitons and rational solutions of non-linear evolution equations, M.J. Ablowitz and J. Satsuma, *J. Math. Phys.*, **19** (1978) 2180-2186.
23. Lectures on inverse scattering transform, M.J. Ablowitz, *Stud. Appl. Math.*, **58** (1978) 17-94.
24. Non-linear evolution equations and ordinary differential-equations of Painlevé type, M.J. Ablowitz, A. Ramani and H. Segur, *Lett. al Nuovo Cimento*, **23** (1978) 333-338.
25. Note on Miura transformation, M.J. Ablowitz, M.D. Kruskal and H. Segur, *J. Math. Phys.*, **20** (1979) 999-1003.
26. Evolution of packets of water-waves, M.J. Ablowitz and H. Segur, *J. Fluid Mech.*, **92** (1979) 691-715.
27. Explicit solutions of Fischer's equation for a special wave speed, M.J. Ablowitz and A. Zepetella, *Bulletin of Math. Bio.*, **41** (1979) 835-840.
28. Transverse instability of one-dimensional transparent optical pulses in resonant media, M.J. Ablowitz and Y. Kodama, *Phys. Lett. A*, **70** (1979) 83-86.
29. 2-dimensional lumps in nonlinear dispersive systems, J. Satsuma and M.J. Ablowitz, *J. Math. Phys.*, **20** (1979) 1496-1503.
30. Resonant nonlinear vibrations in continuous systems. I. Undamped case, M.J. Ablowitz, A. Askar, A.S. Cakmak and H. Engin, *Int. J. Nonlin. Mech.*, **14** (1979) 223-233.

31. Resonant nonlinear vibrations of continuous systems. II. Damped and transient-behavior, H. Engin, M.J. Ablowitz, A. Askar and A.S. Cakmak, *Int. J. Nonlin. Mech.*, **14** (1979) 235-246.
32. Solutions of the Korteweg-deVries equation, M.J. Ablowitz and H. Cornille, *Phys. Lett. A*, **72** (1979) 277-280.
33. Internal wave-equation describing a stratified fluid with finite depth, J. Satsuma, M.J. Ablowitz and Y. Kodama, *Phys. Lett. A*, **73** (1979) 283-286.
34. Solitary wave collisions, M.J. Ablowitz, M.D. Kruskal and J.F. Ladik, *SIAM J. Appl. Math.*, **36** (1979) 428-437.
35. A connection between non-linear evolution-equations and ordinary differential-equations of P-type. I., M.J. Ablowitz, A. Ramani and H. Segur, *J. Math. Phys.*, **21** (1980) 715-721.
36. A connection between non-linear evolution-equations and ordinary differential-equations of P-type. II., M.J. Ablowitz, A. Ramani and H. Segur, *J. Math. Phys.*, **21** (1980) 1006-1015.
37. Transverse instability of breathers in resonant media, Y. Kodama and M.J. Ablowitz, *J. Math. Phys.*, **21** (1980) 928-931.
38. Comparison between finite-element methods and spectral methods as applied to bound-state problems, M. Duff, H. Rabitz, A. Askar, A. Cakmak and M.J. Ablowitz, *J. Chem. Phys.*, **72** (1980) 1543-1559.
39. Long internal waves in fluids of great depth, M.J. Ablowitz and H. Segur, *Stud. Appl. Math.*, **62** (1980) 249-262.
40. Remarks on non-linear evolution-equations and ordinary differential-equations of Painlevé type, M.J. Ablowitz, *Physica D*, **3** (1981) 129-141.
41. Asymptotic solutions of non-linear evolution-equations and a Painlevé transcendent, H. Segur and M.J. Ablowitz, *Physica D*, **3** (1981) 165-184.
- \*42. The soliton: A significant, coherent nonlinear phenomena, M.J. Ablowitz and A.S. Fokas, *Clarkson Innovations*, **1** (1981) 2-3 (invited article).
43. Finite perturbations and some special solutions of the Korteweg-deVries equation, H. Airault and M.J. Ablowitz, *C.R. Acad. Sc. Paris*, **292** (1981) 279-281.
44. Non-linear intermediate long-wave equation - Analysis and method of solution, Y. Kodama, J. Satsuma and M.J. Ablowitz, *Phys. Rev. Lett.*, **46** (1981) 687-690.
45. Linearization of the Korteweg-deVries and Painlevé II equations, A.S. Fokas and M.J. Ablowitz, *Phys. Rev. Lett.*, **47** (1981) 1096-1100.
46. Perturbations of solitons and solitary waves, Y. Kodama and M.J. Ablowitz, *Stud. Appl. Math.*, **64** (1981) 225-245.
47. The periodic cubic Schrödinger-equation, Y.C. Ma and M.J. Ablowitz, *Stud. Appl. Math.*, **65** (1981) 113-158.
48. Note on asymptotic solutions of the Korteweg-deVries equation with solitons, M.J. Ablowitz and Y. Kodama, *Stud. Appl. Math.*, **66** (1982) 159-170.
49. Direct and inverse scattering problems of the non-linear intermediate long-wave equation, Y. Kodama, M.J. Ablowitz and J. Satsuma, *J. Math. Phys.*, **23** (1982) 564-576.
50. On the periodic intermediate long-wave equation, M.J. Ablowitz, A.S. Fokas, J. Satsuma and H. Segur, *J. Phys. A - Math. and Gen.*, **15** (1982) 781-786.
51. Direct linearizations of the Korteweg-deVries equations, A.S. Fokas and M.J. Ablowitz, *AIP Conference Proceedings*, **88** (1982) 237-241.

52. A direct linearization associated with the Benjamin-Ono-Equation, M.J. Ablowitz and A.S. Fokas, *AIP Conference Proceedings*, **88** (1982) 229-236.
53. On a unified approach to transformations and elementary solutions of Painlevé equations, A.S. Fokas and M.J. Ablowitz, *J. Math. Phys.*, **23** (1982) 2033-2042.
54. The inverse scattering transform for the Benjamin-Ono-Equation - A pivot to multidimensional problems, A.S. Fokas and M.J. Ablowitz, *Stud. Appl. Math.*, **68** (1983) 1-10.
55. On the inverse scattering of the time-dependent Schrödinger equation and the associated Kadomtsev-Petviashvili equation, A.S. Fokas and M.J. Ablowitz, *Stud. Appl. Math.*, **69** (1983) 211-228.
56. On the inverse scattering transform for the Kadomtsev-Petviashvili equation, M.J. Ablowitz, D. Bar Yaacov and A.S. Fokas, *Stud. Appl. Math.*, **69** (1983) 135-143.
57. Method of solution for a class of multidimensional non-linear evolution-equations, A.S. Fokas and M.J. Ablowitz, *Phys. Rev. Lett.*, **51** (1983) 7-10.
58. On the initial-value problem of the 2<sup>nd</sup> Painlevé transcendent, A.S. Fokas and M.J. Ablowitz, *Commun. Math. Phys.*, **91** (1983) 381-403.
59. The direct linearizing transform and the Benjamin-Ono equation, M.J. Ablowitz, A.S. Fokas and R.L. Anderson, *Phys. Lett. A*, **93** (1983) 375-378.
60. On the inverse scattering and direct linearizing transforms for the Kadomtsev-Petviashvili equation, A.S. Fokas and M.J. Ablowitz, *Phys. Lett. A*, **94** (1983) 67-70.
61. The inverse scattering transform for multidimensional (2+1) problems, A.S. Fokas and M.J. Ablowitz, *Lect. Notes Phys.*, **189** (1983) 137-183.
62. Comments on the inverse scattering transform and related non-linear, evolution-equations, M.J. Ablowitz and A.S. Fokas, *Lect. Notes Phys.*, **189** (1983) 3-24.
63. On a Bäcklund transformation and scattering problem for the modified intermediate long-wave equation, J. Satsuma, T.R. Taha and M.J. Ablowitz, *J. Math. Phys.*, **25** (1984) 900-904.
64. Analytical and numerical aspects of certain nonlinear evolution-equations. I. Analytical, T.R. Taha and M.J. Ablowitz, *J. Comp. Phys.*, **55** (1984) 192-202.
65. Analytical and numerical aspects of certain nonlinear evolution-equations. II. Numerical, nonlinear Schrödinger-Equation, T.R. Taha and M.J. Ablowitz, *J. Comp. Phys.*, **55** (1984) 203-230.
66. Analytical and numerical aspects of certain nonlinear evolution-equations. III. Numerical, Korteweg-deVries equation, T.R. Taha and M.J. Ablowitz, *J. Comp. Phys.*, **55** (1984) 231-253.
67. On the inverse scattering transform of multidimensional nonlinear equations related to 1<sup>st</sup>-order systems in the plane, A.S. Fokas and M.J. Ablowitz, *J. Math. Phys.*, **25** (1984) 2494-2505.
68. On the limit from the intermediate long-wave equation to the Benjamin-Ono equation, P. Santini, M.J. Ablowitz and A.S. Fokas, *J. Math. Phys.*, **25** (1984) 892-899.
69. The direct linearization of a class of nonlinear evolution-equations, P.M. Santini, M.J. Ablowitz, and A.S. Fokas, *J. Math. Phys.*, **25** (1984) 2614-2619.
70. A multidimensional inverse-scattering method, A. Nachman and M.J. Ablowitz, *Stud. Appl. Math.*, **71** (1984) 243-250.
71. Multidimensional inverse scattering for 1<sup>st</sup>-order systems, A. Nachman and M.J. Ablowitz, *Stud. Appl. Math.*, **71** (1984) 251-262.

72. Nonlinear evolution-equations associated with a Riemann-Hilbert scattering problem, A. De-gasperis, P.M. Santini and M.J. Ablowitz, *J. Math. Phys.*, **26** (1985) 2469-2472.
73. Multidimensional nonlinear evolution-equations and inverse scattering, M.J. Ablowitz and A.I. Nachman, *Physica D*, **18** (1986) 223-241.
74. On the solution of the generalized wave and generalized Sine-Gordon equations, M.J. Ablowitz, R. Beals and K. Tenenblat, *Stud. Appl. Math.*, **74** (1986) 177-203.
75. Note on solutions to a class of nonlinear singular integrodifferential equations, M.J. Ablowitz, A.S. Fokas and M.D. Kruskal, *Phys. Lett A*, **120** (1987) 215-218.
76. An example of a  $\bar{\partial}$  problem arising in a finite difference context: Direct and inverse problem for the discrete analogue of the equation  $\psi_{xx} + U\psi = \sigma\psi_y$ , O. Ragnisco, P.M. Santini, S. Chitlaru-Briggs and M.J. Ablowitz, *J. Math. Phys.*, **28** (1987) 777-780.
77. Solutions of multidimensional extensions of the anti-self-dual Yang-Mills equation, M.J. Ablowitz, D.G. Costa and K. Tenenblat, *Stud. Appl. Math.*, **77** (1987) 37-46.
78. On the initial-value problem for a class of nonlinear integral evolution-equations including the Sine-Hilbert equation, P.M. Santini, M.J. Ablowitz and A.S. Fokas, *J. Math. Phys.*, **28** (1987) 2310-2316.
79. Davey-Stewartson-I system - A quantum (2+1) dimensional integrable system, C.L. Schultz, M.J. Ablowitz and D. Bar Yaacov, *Phys. Rev. Lett.*, **59** (1987) 2825-2828.
80. A method of linearization for Painlevé equations - Painlevé-IV, Painlevé-V, A.S. Fokas, U. Mugan and M.J. Ablowitz, *Physica D*, **30** (1988) 247-283.
81. A rule for fast computation and analysis of soliton automata, T.S. Papatheodorou, M.J. Ablowitz and Y.G. Saridakis, *Stud. Appl. Math.*, **79** (1988) 173-184.
82. Analytical and numerical aspects of certain nonlinear evolution-equations. IV. Numerical, modified Korteweg-deVries equation, T. Taha and M.J. Ablowitz, *J. Comp. Phys.*, **77** (1988) 540-548.
83. Hodograph transformations of linearizable partial-differential equations, P.A. Clarkson, A.S. Fokas and M.J. Ablowitz, *SIAM J. Appl. Math.*, **49** (1989) 1188-1209.
84. Forced nonlinear evolution-equations and the inverse scattering transform, A.S. Fokas and M.J. Ablowitz, *Stud. Appl. Math.*, **80** (1989) 253-272.
85. Interaction of simple particles in soliton cellular automata, A.S. Fokas, E.P. Papadopolou, Y.G. Saridakis and M.J. Ablowitz, *Stud. Appl. Math.*, **81** (1989) 153-180.
86. Strong coupling limit of certain multidimensional nonlinear-wave equations, M.J. Ablowitz and C.L. Schultz, *Stud. Appl. Math.*, **80** (1989) 229-238.
87. Numerically induced chaos in the nonlinear Schrödinger-Equation, B. Herbst and M.J. Ablowitz, *Phys. Rev. Lett.*, **62** (1989) 2065-2068.
88. Action angle variables and trace formula for D-bar limit case of Davey-Stewartson I, C.L. Schultz and M.J. Ablowitz, *Phys. Lett. A*, **135** (1989) 433-437.
89. Solitons, inverse problems and nonlinear equations, M.J. Ablowitz, *Math. Applic. Comp.*, **8** (1989) 127-152 (invited article).
90. On homoclinic structure and numerically induced chaos for the nonlinear Schrödinger-Equation, M.J. Ablowitz and B.M. Herbst, *SIAM J. Appl. Math.*, **50** (1990) 339-351.
91. Reductions of self-dual Yang-Mills fields and classical-systems, S. Chakravarty, M.J. Ablowitz and P.A. Clarkson, *Phys. Rev. Lett.*, **65** (1990) 1085-1087.

92. On the boundary-conditions of the Davey-Stewartson equation, M.J. Ablowitz, S.V. Manakov and C.L. Schultz, *Phys. Lett. A*, **148** (1990) 50-52; condensed version published in *Nonlinear Evolution Equations and Dynamical Systems* pp 29-32, Research Reports in Physics, Springer-Verlag, Berlin (1990).
93. On the Kadomtsev-Petviashvili equation and associated constraints, M.J. Ablowitz and J. Villarroel, *Stud. Appl. Math.*, **85** (1991) 195-213.
94. On the hamiltonian-formalism for the Davey-Stewartson system, J. Villarroel and M.J. Ablowitz, *Inverse Problems*, **7** (1991) 451-460.
95. Numerical homoclinic instabilities and the complex modified Korteweg-de Vries equation, B.M. Herbst, M.J. Ablowitz and E. Ryan, *Computer Phys. Commun.*, **65** (1991) 137-142.
96. Forced and semiline solutions of the Burger's-Equation, M.J. Ablowitz and S. De Lillo, *Phys. Lett. A*, **156** (1991) 483-487.
97. Class of stable multistate time-reversible cellular automata with rich particle content, M.J. Ablowitz, J.M. Keiser and L.A. Takhtajan, *Phys. Rev. A*, **44** (1991) 6909-6912.
98. Dynamics of semi-discretizations of the defocusing nonlinear Schrödinger equation, M.J. Ablowitz, B.M. Herbst and J.A. Weidman, *IMA J. Num. Anal. II*, (1991) 539-552.
99. On the method of solution to the 2 + 1 Toda equation, J. Villarroel and M.J. Ablowitz, *Phys. Lett. A*, **163** (1992) 293-298.
100. A new Hamiltonian amplitude equation governing modulated wave instabilities, M. Wadati, H. Segur and M.J. Ablowitz, *J. Phys. Soc. of Japan*, **61** (1992) 1187-1193.
- \*101. Numerical homoclinic instabilities in the Sine-Gordon equation, B.M. Herbst and M.J. Ablowitz, *Quaestiones Math.*, **15** (1992) 345-363.
- \*102. Stable, multi-state, time-reversible cellular automata with rich particle content, M.J. Ablowitz, J.M. Keiser and L.A. Takhtajan, *Quaestiones Math.*, **15** (1992) 325-343.
103. Interaction effects on wavelength multiplexed soliton data packets, A.F. Benner, J.R. Sauer and M.J. Ablowitz, *J. Opt. Soc. Amer. B - Opt. Phys.*, **10**, (1993) 2331-2340.
104. A self-dual Yang-Mills hierarchy and its reductions to integrable systems in 1 + 1 and 2 + 1 dimensions, M.J. Ablowitz, S. Chakravarty and L.A. Takhtajan, *Commun. Math. Phys.*, **158** (1993) 289-314.
105. Numerical chaos, symplectic integrators and exponentially small splitting distances, B.M. Herbst and M.J. Ablowitz, *J. Comp. Phys.*, **105** (1993) 122-132.
106. On the inverse scattering transform of the 2+1 Toda equation, J. Villarroel and M.J. Ablowitz, *Physica D*, **65** (1993) 48-70.
107. Numerical chaos, roundoff errors, and homoclinic manifolds, M.J. Ablowitz, C. Schober and B.M. Herbst, *Phys. Rev. Lett.*, **71** (1993) 2683-2686.
108. On the method of solution of the differential-delay Toda equation, J. Villarroel and M.J. Ablowitz, *Phys. Lett. A*, **180** (1993) 413-418.
109. Solutions to the 2+1 Toda equation, J. Villarroel and M.J. Ablowitz, *J. Phys. A - Math. and Gen.*, **27** (1994) 931-941.
110. Parametric forcing, bound-states and solutions of a nonlinear Schrödinger type equation, M.J. Ablowitz and S. De Lillo, *Nonlinearity*, **7** (1994) 1143-1153.
111. Wave collapse and instability of solitary waves of a generalized Kadomtsev-Petviashvili equation, X.P. Wang, M.J. Ablowitz and H. Segur, *Physica D*, **78** (1994) 241-265.



112. Homoclinic manifolds and numerical chaos in the nonlinear Schrödinger-Equation, M.J. Ablowitz and C. Schober, *Math. and Comp. Sim.*, **37** (1994) 249-264.
113. Symplectic methods for the nonlinear Schrödinger-Equation, B.M Herbst, F. Varadi and M.J. Ablowitz, *Math. and Comp. Sim.*, **37** (1994) 353-369.
- \*114. Effective chaos in the nonlinear Schrödinger equation, M.J. Ablowitz and C. Schober, *Contemp. Math.*, **172** (1994) 253-268.
115. Hamiltonian integrators for the nonlinear Schrödinger equation, M.J. Ablowitz and C.M. Schober, *Intern. J. Mod. Phys. C - Phys. and Comp.*, **5** (1994) 397-401.
116. Multisoliton interactions and wavelength-division multiplexing, S. Chakravarty, M.J. Ablowitz, J.R. Sauer and R.B. Jenkins, *Opt. Lett.*, **20** (1995) 136-138.
117. Integrability, computation and applications, M.J. Ablowitz, S. Chakravarty and B.M. Herbst, *Acta Applicande Mathematicae*, **39** (1995) 5-37.
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- R-4. Review of *Bilinear Transformation Method* by Y. Matsuno in *SIAM Review* **28** (1986) 91-92.
- R-5. Review of *Introduction to Multidimensional Integrable Equations* by B.G. Konopelchenko in *Bulletin of the American Mathematical Society* (1994) 311-313.
- R-6. Review of *Handbook of Complex Variables* by S. Krantz in *SIAM Review* (2001) 554

#### EDITORIAL BOARDS:

- |                   |   |
|-------------------|---|
| Current:          | <i>Studies in Applied Mathematics</i> 1983–<br><i>Cambridge Texts in Applied Mathematics</i> 1997–<br><i>Dynamics of Partial Differential Equations</i> 2005–<br><i>Symmetry, Integrability and Geometry:–</i><br><i>Methods &amp; Applications</i> 2008–<br><i>Senior Assoc Editor, NIST Digital Library of</i><br><i>Mathematical Functions</i> 2015– |
| Former:           | <i>Journal of Engineering Math</i> 1997–2003<br><i>SIAM Journal in Applied Mathematics</i> 1986–1994<br><i>Journal of Mathematical Physics</i> : 1976–1979<br><i>Proceedings of the American Math. Society</i> :<br>Coordinating Editor for Applied Math. 1999–2006   |
| Advisory:         | <i>Journal Chaos</i> 1991–1997<br><i>Journal Inverse Problems</i> 1992–1994<br><i>Springer Verlag Series in Integrable Systems</i><br><i>and Solitons</i> , 1995-2000   |
| Special Editions: | <i>Journal of Engineering Math</i><br>Applications of Solitons and Symmetries<br>Volume 36, p. 1-184, 1999<br><i>Journal Chaos</i><br>Focus Issue: Optical Solitons–Perspectives<br>and Applications, Volume 10, P. 471-738, 2000   |



## GRANTS:

National Science Foundation:	1972–present	
DMS-Applied Mathematics	1972–73:	P.I., M.J. Ablowitz, A.C. Newell
	1973–76:	P.I., M.J. Ablowitz, D.J. Kaup, A.C. Newell, H. Segur.
	1977–81:	P.I., M.J. Ablowitz, D.J. Kaup, A.C. Newell.
	1982–89:	P.I., M.J. Ablowitz, A.S. Fokas, D.J. Kaup.
	1989–2026	P.I. M.J. Ablowitz
DMS: “Nonlinear wave motion” \$200,000 (most recent)	2013–2026:	P.I. M.J. Ablowitz.
CHE: “SOLAR Collaborative” \$373,897	2011–2015:	CO-P.I. M.J. Ablowitz; PI W. Park, CO-PI D. Walba PI S. Shaheen
This is one part of a four-way award		
DMS: “Collaborative Research: Mathematical and computational methods for high-data-rate optical fiber communication” \$308,472	2001–2006:	P.I. M.J. Ablowitz this is one part of a three-way focused research group grant. Other P.I.s with separate awards: W. Kath, Northwestern U., C. Menyuk, U. Maryland, Baltimore County
DMS: “Collaborative Research: Mathematical and computational methods for high-performance light-wave systems” \$121,422	2005–2009:	P.I. M.J. Ablowitz; this is one part of a two-way research group grant. Other P.I. with separate award: G. Biondini, SUNYAB
ECS: Electrical and Communication Systems: “Soliton communications and Wavelength division multiplexing”: \$220,000		P.I. M.J. Ablowitz
DMS: Vertical Integration of Education and Research in Applied Math: Total award: \$1,389,400	1998–2003.	
	1999–2004.	PI: J. Meiss; Co-PI: M.J. Ablowitz (1999–2000), B. Fornberg, J. Curry
Colorado Commission on Higher Education: Program of Excellence in Applied Math Joint with CU-Denver Total award: \$1,000,000 (approx.)	1999–2003	PI M.J. Ablowitz, Co-PI T.Russell
Air Force Office of Scientific Research: Physical Mathematics Award: “Nonlinear wave propagation” Prior grant amount: \$391,210 2012–2015 Award: “Studies of High Power Edge-localized Waves...” Amount: \$520,965 2015–2018 Amount: \$736,589 2019–2024	1978–present	P.I., M.J. Ablowitz

## GRANTS (continued):

Office of Naval Research, Mathematics Division	1978–1997: 1978–81:	P.I., M.J. Ablowitz, D.J. Kaup, A.C. Newell
	1982–97: 1975–1977	P.I., M.J. Ablowitz,
Sloan Research Fellowship:		
John Simon Guggenheim Fellowship:	1984.	
Sloan Foundation, Program Officers Grant: \$30,000	1993-1994.	
Council on Research and Creative Work Faculty Fellowship, University of Colorado	1994-95. 2001-2002.	
NSF-DMS Mathematical Science Research Equipment: \$15,000	1983	P.I., E.E. Doberkat, M.J. Ablowitz, A.S. Fokas
\$26,000	1990	P.I. J. Meiss, M.J. Ablowitz, J. Curry, R. Easton, H. Segur

## PH.D. STUDENTS:

- J. Ladik, Nonlinear Differential–Difference Equations, Ph.D. June 1975, Clarkson University.
- Y.C. Ma, Studies of the Cubic Schrödinger Equations, Ph.D. 1977, Princeton University, Informal advisor and reader of the thesis. Official advisor W. Hayes.
- A. Ramani, On O.D.E.'s of Painlevé Type, Ph.D., 1979, Princeton University, Informal advisor and reader of the thesis. Official advisor M. Kruskal.
- Y. Kodama, Perturbation and Stability Problems in Nonlinear Waves. Ph.D. 1979, Clarkson University.
- T. Taha, Numerical and Analytical Aspects of Nonlinear Evolution Equations, Ph.D. 1982, Clarkson University.
- P. Santini, Aspects of the Theory for Multidimensional Nonlinear Partial Differential Equations Solvable via the Inverse Scattering Transform. Ph.D., June 1983, Clarkson University.
- S. Chitlaru Briggs, Topics in Nonlinear Mathematics, Ph.D. June 1983, Clarkson University.
- U. Mugan, On the Solution of the Classical Equations of Painlevé, Ph.D., August 1988, Clarkson University, Joint advisor with A. Fokas.
- R. Balart, Mathematical Modeling of Directional Solidification in the Absence of Gravity, Ph.D., December 1988, Clarkson University.
- E. Ryan, Numerical Chaos in Nonlinear Wave, Ph.D., May, 1993, Clarkson University.
- J. Keiser, On I. Wavelet Based Approach to Numerical Solution of Nonlinear Partial Differential Equations and II. Nonlinear Waves in Fully Discrete Dynamical Systems, Ph.D., May 1995, University of Colorado, Boulder, Joint advisor with G. Byelkin.

- D. Trubatch, Discrete Inverse Scattering and Related Nonlinear Wave Equations, Ph.D.; Aug. 2000, University of Colorado, Boulder.
- R. Horne, Collision Induced Timing Jitter and Four Wave Mixing in WDM Soliton Systems, Ph.D.; Aug. 2001, University of Colorado, Boulder.
- A. Docherty, Collision Induced Timing shifts in Wavelength-Division-Multiplexed Optical Fiber Communication Systems, Electrical Engineering, University of New South Wales, Sydney Australia, Ph.D., April 2004
- M. Hoefer, Dispersionless Shock waves in Bose-Einstein condensates and magnetodynamics, University of Colorado, Boulder, Ph.D., 2006.
- C. Ahrens, Studies in optical fiber communications and nonlinear dynamics, University of Colorado, Boulder, Ph.D., 2006.
- T. Haut, Nonlocal formulations of multi-fluid waves, University of Colorado, Boulder, Ph.D., December, 2008.
- S. Nixon, On perturbations of solitons and applications to mode-locked lasers, Ph.D., August, 2011
- D. Baldwin, Interactions and Asymptotics of Dispersive Shock Waves, Ph.D., May, 2013

#### MASTER'S STUDENTS:

- B. Funk, Semi-resonant interactions and frequency dividers, June 1972.
- J. Keiser, Variable length nonlinear feedback shift registers with dynamically allocated taps, June 1989.
- S. Mock, Studies of nonlinear ferromagnetic systems, August 1996.
- E. Olson, Large scale dispersion management in optical fiber soliton communication Systems, Fall 1999.

POSTDOCTORAL ASSOCIATES:

J. Satsuma	1977–79	From: Kyoto University, Applied Mathematics Dept. Kyoto, Japan.
Y. Kodama	1979–81	From: Nagoya University, Physics Dept. Nagoya, Japan.
A. Nakamura	1981–82	From: Osaka University, Physics Dept. Osaka, Japan.
D. Bar Yaacov	1982–86	From: Yale University, Dept. of Mathematics New Haven, Connecticut.
P. Clarkson	1984–86	From: Oriental College, Dept. of Mathematics Oxford, England.
S. Chakravarty	1988–95	From: University of Pittsburgh, Dept. of Physics Pittsburgh, Pennsylvania.
B. Herbst	1988–90	From: Univ. of the Orange Free State, Applied Math Dept., South Africa
J. Villarroel (Fulbright Fellow)	1989-1990	From: Univ. of Salamanca, Math Dept. Salamanca,
P. Cehelsky	1990-1991	From: Clarkson University, Dept. of Mathematics Potsdam, New York
C. Schober	1991-1996	From: University of Arizona, Math Department Tucson, AZ
G. Biondini	1995-1999	From: Perugia University, Physics Dept. Perugia, Italy
R. Halburd	1996-1999	From: University of New South Wales, Math Dept. Sydney, Australia
T. Hirooka	2000-2002	From: Osaka University, Dept. of Communications Engineering Osaka, Japan
Z. Musslimani	2000-2003	From: Technion, Mathematics Dept. Haifa, Israel; Rothschild Fellow
B. Prinari	2001	From: Univ. of Lecce, Physics Dept. Lecce, Italy;

POSTDOCTORAL ASSOCIATES (continued):

B. Ilan	2002-2005	From: Univ. of Tel Aviv, Mathematics Dept. Tel Aviv, Isreal;
J. Moeser	2002-2005	From: Brown Univ., Division of Applied Mathematics Providence, R.I.;
I. Bakirtas	2004 -2005	From: Istanbul Technical University, Department of Engineering Sciences Istanbul, Turkey;
A. Docherty	2005 -2006	From: University of New South Wales, Department of Electrical Engineering Sydney, Australia.
T. Horikis	2006 -2008	From: Northwestern University , Department of Applied Mathematics Sydney, Australia.
Y. Zhu	2008 - -2012	From: Tsinghua University , Center for Applied Mathematics Beijing, China.
S. Butler	2012 - -2013	From: Department of Applied Mathematics Sydney University, Sydney, Australia Seattle, WA
C. Curtis	2012 - -2013	From: Department of Applied Mathematics University of Washington, Seattle Seattle, WA
Y-P Ma	2014 - -	From: Department of Physics University of California Berkely, CA
A. Demirci	2014–2015	From: Department of Mathematics Istanbul Technical University Istanbul, Turkey
I. Rumanov	2014 - -	From: Department of Mathematics University of California Davis, CA
J. Cole	2016 - - 2020	From: Department of Mathematics Florida State University Tallahassee, FL

POSTDOCTORAL ASSOCIATES (continued):

S.Nixon

2020 - -

From:

Department of Mathematics

University of Vermont

Burlington, VT

#### INVITED PRESENTATIONS:

Rensselaer Polytechnic Institute, Mathematics Department, May 1972.

American Mathematical Society Summer Conference on Nonlinear Wave Motion, Clarkson College of Technology, July 1972.

Applied Mathematics Summer Seminar, Dartmouth College, August 1972. Sponsored by the Office of Naval Research, Mathematics Branch.

Massachusetts Institute of Technology, Mathematics Department, December 1973.

Rensselaer Polytechnic Institute, Mathematics Department, March 1974.

Invited Speaker: SIAM Fall Meeting on Nonlinear Wave Propagation, October 1974, Norfolk, VA.

Joint Seminar: University of Chicago–Northwestern University, November 1974.

Rockefeller University, December 1974.

McGill University, Montreal, Canada, Mathematics Department, November 1975.

Princeton University, Program in Applied Mathematics, January 1976.

University of Pittsburgh, Mathematics Department, March 1976.

Massachusetts Institute of Technology, Mathematics Department, 10 lectures on Nonlinear Wave Propagation, April–May 1976.

University of Chicago, Geophysics Department, May 1976.

Denver University, Mathematics Department, May 1976.

Nihon University, Physics Department, Tokyo, Japan, July 1976.

Nagoya University Plasma Physics Institute, Nagoya, Japan, July 1976.

Kyoto University, Physics Department, Kyoto, Japan, July 1976.

Ritsumeikan University, Mathematics and Physics Departments, Kyoto, Japan, July 1976.

Osaka University, Mechanical Engineering Department, Osaka, Japan, July 1976.

University of Rochester, Mathematics Department, April 1977.

University of Rome, Mathematics Department, Rome, Italy, June 1977.

Los Alamos Labs, Albuquerque, New Mexico, November 1977.

Denver University, Mathematics Department, November 1977.

New York University, Mathematics Department, February 1978.

Princeton University, Program in Applied Mathematics, April 1978.

International Quantum Electrodynamics Conference, Atlanta, Georgia, May 1978.

Princeton University, Plasma Physics Lab, May 1978.

Syracuse University, AMS Meeting, invited speaker, October 1978.

Naval Research Laboratory, Fluid and Numerical Computations Group, December 1978.

Physics Group, CNRS Saclay, France, December 1978.

SUNY Buffalo, Mathematics Department, April 1979.

Catholic University, Conference on Inverse Scattering, invited speaker, May 1979.

University of Rhode Island, Conference on Nonlinear Partial Differential Equations, June 1979.

International Conference on Solitons, Jadwisin, Poland, August 1979.

International Conference on Soliton Theory, Kiev, U.S.S.R., Part of a Joint U.S.–U.S.S.R. Academy of Sciences agreement, September 1979.

New York University, Courant Institute of Mathematical Sciences, December 1979.

Columbia University, Department of Mathematics, February 1979.

\*\*\*Twente Univ, Amerstam, Paris

Workshop on Nonlinear Evolution Equations and Dynamical Systems, Chania, Crete, July 9–23, 1980.

Conference on Nonlinear Evolution Equations and Inverse Scattering, Banff, Alberta, Canada, August 1980.

AMS Regional Conference, Brown University, Providence, Rhode Island, October 1980.

University of Montreal, Centre de Recherches de Mathematiques, November 1980.

University of Michigan, Department of Mathematics, November 1980.

Georgia Institute of Technology, Department of Mathematics, December 1980.

SIAM Fall Meeting, Washington, D.C., December 1980.

Workshop on Nonlinear Waves, York University, Toronto, Canada, March 1981.

Workshop on Nonlinear Evolution Equations, Solitons and Spectral Methods, August 24–29, 1981, Trieste, Italy.

Workshop on Mathematical Methods in Hydrodynamics and Integrability in Related Dynamical Systems, La Jolla Institute, La Jolla, California, December 7–9, 1981.

York University, Toronto, Canada, Physics Department, March 1982.

Yale University, Mathematics Department, March 1982.

Princeton University, Program in Applied Mathematics, April 1982.

Columbia University, Program in Applied Mathematics, April 1982.

Solitons '82, Scott Russell Centenary Conference and Workshop, Edinburgh, Scotland, August 1982.

Cornell University, Ithaca, New York, Wave Phenomena, Twenty-Fifth Annual Meeting of the Society for Natural Philosophy, September 22–25, 1982.

School and Workshop, Nonlinear Phenomena, November 29–December 17, 1982, Oaxtapec, Mexico.

Cornell University, Physics Dept., Ithaca, New York, April 21, 1983.

SUNY at Stony Brook, Institute for Theoretical Physics, April 22–25, 1983.

Second Workshop on Nonlinear Evolution Equations and Dynamical Systems, Orthodox Academy of Crete, Chania, Crete, August 13–28, 1983.

Second International Workshop on Nonlinear and Turbulent Processes in Physics, Kiev, USSR, October 10–25, 1983.

Fifth IMACS International Symposium on Computer Methods for Partial Differential Equations, Lehigh University, June 19–21, 1984, Bethlehem, Pennsylvania.

Princeton University, Program in Applied Mathematics, March 22, 1984.

University of Rome, Physics Dept., Rome, Italy, 6 lectures, May 1–30, 1984.

Landau Institute for Theoretical Physics, Academy of Sciences of the U.S.S.R., Moscow, U.S.S.R., October 1984.

V. A. Steklov Mathematical Institute, Academy of Sciences of the U.S.S.R., Leningrad, U.S.S.R., October 1984.

University of Tokyo, Dept. of Physics, Tokyo, Japan, November 1–5, 1984.

Gakushuin University, Department of Physics, Tokyo, Japan, November 5, 1984.



Kyoto University, Physics Department, Kyoto, Japan, November 7–8, 1984.

Kyushu University, Research Institute for Applied Mathematics, Fukuoka, Japan, November 9, 1984.

Miyazaki University, Miyazaki, Japan, November 12–14, 1984.

Ehime University, Department of Applied Mathematics, Ehime, Japan, November 14, 1984.

Hiroshima University, Department of Mathematics, Hiroshima, Japan, November 15, 1984.

Nagoya University, Department of Physics, Nagoya, Japan, November 19–21, 1984.

Kyoto University, Kyoto, Japan, attend RIMS meeting, November 26–28, 1984.

University of Brazilia, Dept. of Mathematics, Brazilia, Brazil, 4 lectures, December 10–24, 1984.

Laboratory for Scientific Computation, Rio de Janeiro, Brazil, December 14, 1984.

\*\*\*SANTA BARBARA–KRUSKAL CONFERENCE

Workshop on Nonlinear Dynamical Systems: Integrability and Qualitative Behavior, University of Montreal, July 29–August 16, 1985.

University of Montreal, Centre de Recherches de Mathematiques, November 4–5, 1985.

University of Brazilia, Brazilia, Brazil, January 6–19, 1986.

Workshop on Physical Applications of Nonlinear Systems: Waves in Fluids and Plasmas, University of Montreal, May 5–9, 1986.

Mathematisches Forschungsinstitut, Conference on Nonlinear Evolution Equations, Oberwolfach, W. Germany, July 26–August 8, 1986.

Penn. State, Department of Mathematics, September 17–19, 1986.

“Solitons”, Winter School, Tiruchirapalli, India, January 1987.

Institute for Mathematics and its Applications, University of Minnesota, IMA Program in Inverse Problems, January 1987.

Virginia Polytechnic Institute, Department of Mathematics, Blacksburg, Virginia, February 1987.

Fourth Workshop Nonlinear Evolution Equations and Dynamical Systems, June 11–25, 1987, Montpellier, France.

AMS Thirty-Fifth Summer Research Institute, Bowdoin College, Brunswick, Maine, July 6–24, 1987.

Workshop on Nonlinear Waves held at the Institute for Applied Mathematics, University of Minnesota, Minneapolis, Minnesota, July 24–27, 1987.

SIAM 35th Anniversary Meeting, Denver, Colorado, October 12–15, 1987.

Workshop on Integrable Systems and Applications, Ile d’Oleron, France, June 20–24, 1988.

\*\*\* University of Colorado, Department of Mathematics, Boulder, Colorado, SPRING 1988

Workshop on Nonlinear Evolution Equations: Integrability and Spectral Methods, Como, Italy, July 4–15, 1988.

Workshop on Singular Behavior and Nonlinear Dynamics, Samos, Greece, August 18–26, 1988.

Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, Minnesota, September 13–16 and November 7–11, 1988.

Workshop on Mathematical Methods in Plasma Physics, Cornell University, Ithaca, New York, October 20–23, 1988.

Columbia University, Department of Mathematics, New York, New York, October 17, 1988.

University of Colorado, Department of Mathematics, Boulder, Colorado, February 15, 1989.

Rutgers University, Department of Mathematics, New Brunswick, New Jersey, March 3, 1989, “Nonlinear Evolution Equations, IST and Cellular Automata.”

International Conference on Nonlinear Physics, April 20-24, 1989, Solitons, Nonlinear Evolution Equations, “Inverse Scattering and Cellular Automata, Shanghai, China.”

Computing Center of Academia Sinica, Beijing, China, May 6, 1989, “Aspects of Solitons and Computation”.

SIAM Summer Meeting, San Diego, CA, July 19-21, 1989, organized mini-symposium on Exactly Solvable Nonlinear Systems.

CRM Workshop on Hamiltonian Systems, University of Montreal, Oct. 20-29, 1989, “Computational Chaos and Integrability.”

Colorado School of Mines, Mathematics Dept., Nov. 20, 1989, “Solitons and All That Nonlinear Stuff.”

Oberwolfach, W. Germany, Jan. 13-20, 1990, “Aspects of Integrability and Chaos.”

Workshop on Chaos and Order, Australian National University, Canberra, Feb. 1-3, 1990, “Integrability and Cellular Automata.”

Conference on Chaos, University of South Wales, Sydney, Feb. 4-10, 1990, “Numerically Induced Chaos.”

University of Colorado at Denver, Mathematics Dept., Feb. 28, 1990, Solitons and All That Nonlinear Stuff.

Conference on Recent Advances in General Relativity, University of Pittsburgh, May 3-5, 1990, “Integrability, Reductions of Self-Dual Yang Mills Fields and Classical Systems.”

University of Georgia, Physics Department, Athens, GA, May 6-9, 1990, “Integrability, Chaos and Patterns.”

Rutgers/Princeton Univ. Dept. of Mathematics, June 25-July 1, 1990.

SIAM National Conference, Minisymposium on Inverse Scattering, Chicago, Illinois, July 15-17, 1990.

NATO Advanced Research Workshop, Sept. 3-7, 1990, Montreal, Canada, “One Dimensional Reductions of Self-Dual Equations”.

Aspects of Nonlinear Dynamics: Solitons and Chaos; Brussels, Belgium, Dec. 6-8, “Solitons, Homoclinic Orbits and Numerically Induced Chaos”, 1990.

Southern Methodist University, Department of Mathematics, Feb. 23-25, 1991.

Workshop on Nonlinear Evolution Equations and Dynamical Systems, June 24-29, 1991, Gallipoli, Italy, “Reductions of the Self Dual Yang-Mills equations and Modular Forms.”

NATO Advanced Scientific Workshop, July 9-18, 1991, Patras, Greece, “Solitons, Computation and Chaos.”

Symposium on Nonlinear Problems in Science and Engineering, Tsinghua University, Beijing, China, “Self-Dual Yang-Mills, Solitons and Connections with Modular Forms”, Oct. 16-20, 1991.

Kao Corporation, Tokyo Japan, “Solitons, Chaos and Cellular Automata”, Oct. 22, 1991.

University of Tokyo, Japan, Physics Department, “Reductions of Self-Dual Yang-Mills Equations and Connections with Modular Forms”, Oct. 23, 1991.

Ryukoku University, Seta, Japan, Applied Mathematics Dept., “Numerical Chaos and Cellular Automata”, Oct. 28, 1991.

University of Kansas, Mathematics Department, "Chaos in the Nonlinear Schrödinger Equation: Real or Fake," Jan. 30, 1992; "On Reductions of the Self-Dual Yang-Mills Equations," Jan. 31, 1992.

Carlton University, Department of Mathematics, Ottawa, Canada, "Solitons, Computation and Chaos," April 11, 1992.

Kansas State University, Midwest Geometry Conference, "Reductions of the Self-Dual Yang-Mills Equations and New Integrable Systems," May 1-3, 1992.

SIAM Forum on Applied Mathematics, Moderator of Panel: "Training in Applied Mathematics/Preparation for Academic Careers," May 15-17, 1992.

Canadian Applied Math. Society, University of Alberta, Edmonton, Canada, Conference on Wave Phenomena, "Nonlinear Waves, Integrable Systems and Modular Forms," June 15-18, 1992.

NATO Advanced Research Workshop, Exeter University, Exeter U.K.; "Chaos in the Nonlinear Schrödinger Equation—Can it be Avoided?," July 14-18, 1992.

SUNY Stony Brook, Department of Mathematics, "Nonlinear Waves, Integrable Systems and a Novel Class of ODEs", December 3, 1992.

Challenge of Teaching Science and Mathematics, Graduate Teacher Program, University of Colorado at Boulder, "Coherence and Chaos", January 11, 1993.

Colorado School of Mines, Golden, Colorado, Sigma Xi lecture, "Solitons and Coherent Structures", March 30, 1993.

International Conference on Inverse Scattering, Bad Honnef, Germany, "Inverse Scattering and Nonlinear Wave Equations, 1+1, 2+1 and Higher Dimensions", May 17-20, 1993.

NATO Lectures, Bilkent University, Department of Mathematics and Faculty of Science, Ankara, Turkey, "Coherence and Chaos—Illustrative Case Studies"; "Reductions of Self Dual Yang Mills and New Special Functions in Integrable Systems", May 20-25, 1993.

Conference: Nonlinear Evolution Equation, Solitons and the Inverse Scattering Transform, Oberwolfach, Germany, "Numerical Chaos Roundoff Errors and Homoclinic Manifolds", July 11-17, 1993.

FSU-USA Conference on Chaos, NAS Center, Woods Hole, Mass., "Roundoff Errors and Homoclinic Manifolds", July 19-23, 1993.

Nonlinear Optics Workshop and Colloquium, Department of Mathematics, University of Arizona, "Roundoff Errors and Homoclinic Manifolds", Sept. 9-11, 1993.

Workshop on Nonlinear Astronomy, University of Florida, Gainesville, "Chaos, Roundoff Errors and Homoclinic Manifolds", Oct 28-30, 1993.

Conference on Modern Group Analysis—Theory and Applications, Univ. of Witwatersrand, Johannesburg and University of Orange Free State, Blomenfontein, South Africa, "Are All Solitons Reductions of Self-Dual Yang Mills?", Jan.10-20, 1994.

Nonlinear Optics and Communications Workshop, Breckenridge, Colorado, "Multisoliton Interactions in Nonlinear Optical Fibers", April 11-12, 1994.

Symmetrics and Integrability of Difference Equations, Montreal, Canada, "Computational Chaos in Integrable Systems—Truncation and Roundoff", May 23-24, 1994.

AFOSR Meeting on Computational and Physical Mathematics, Kirtland AFB, New Mexico, "Numerical Chaos in Coherent Systems", June 1-3, 1994.

Workshop on Twenty Years of the Nonlinear Schrödinger Equation and Recent Developments, Moscow, Russia, "Computational Chaos in the Nonlinear Schrödinger Equation", July 23-31, 1994.

University of Alberta, Edmonton, Alberta, “Computational Chaos in Integrable Systems”, Sept. 8-10, 1994.

NEEDS Workshop, Los Alamos National Laboratory, Los Alamos, NM, “Integrability, Computation and Nonlinear Optics”, Sept. 11-14, 1994.

Nonlinear Optics Workshop, Dept. of Mathematics, University of Arizona, “Soliton Interaction in Nonlinear Optics”, October 9-11, 1994.

University of Tokyo, Physics Department, “Reductions of the Self Dual Yang Mills Equations and Novel Integrable Systems”, Nov. 8, 1994; “Numerical Chaos: Truncation Roundoff”, Nov. 9, 1994.

University of Tokyo, Applied Mathematics Department, “Novel Integrable Systems”, Nov. 9, 1994.

University of Science and Technology, Hong Kong, “Computational Chaos in Integrable Systems”, Nov. 16, 1994.

Hong Kong Polytechnic, Hong Kong, “Computational Chaos in Integrable Systems”, Nov. 17, 1994.

University of Colorado, Program in Applied Mathematics, “1895-1995: Integrability and Applications”, Feb. 10, 1995.

Colorado State University, Dept. of Mathematics, “1895-1995: Integrability and Applications”, March 30, 1995.

PhD Course, KdV’95, University of Amsterdam, the Netherlands, “Numerical Computation of Integrable Systems I and II”, April 21, 1995.

International Symposium, KdV’95, Amsterdam, the Netherlands, “1895-1995: Integrability and Applications”, April 25, 1995.

Mathematics Department, University of Leeds, United Kingdom, “1895-1995: Integrability and Applications”, April 27, 1995.

Mathematics Department, University of Loughborough, United Kingdom, “1895-1995: Integrability and Applications”, May 5, 1995.

Workshop on Nonlinear Phenomena, Solitons and Symmetries, Kent University, Canterbury, UK “Integrability, Painlevé Equations and Novel Systems”, May 9, 1995.

Workshop on Nonlinear Optics, Mathematics Department, University of Arizona, “Nonlinear Schrödinger Equations and Wavelength Division Multiplexing”, October 2, 1995.

Department of Mathematics, Kent University, Canterbury, England “Computational and Effective Chaos in Integrable Systems”, November 17, 1995.

Department of Mathematics, Pondicherry University, Pondicherry, India, 6 lectures at the Winter School in Nonlinear Systems, “Nonlinear Waves and the Inverse Scattering Transform”, January 8-12, 1996.

Conference on Nonlinear Dynamics, School of Mathematics, University of New South Wales, Australia, “Computational Chaos in Integrable Systems”, March 27-28, 1996.

Department of Mathematics, University of Sydney, Australia, “100 years of Integrability”, April 3, 1996.

Institute for Theoretical Physics, summer school session on “Painlevé One Century Later”, Cargèse, Corsica, “Painlevé Equations, Darboux-Halphen Systems and the Inverse Transform Method”,  $4\frac{1}{2}$  hours, June 3-12, 1996.

Workshop on Symmetries and Integrability, Kent University, Canterbury, England, “Solutions to the Time Dependent Schrödinger and the Kadomtsev-Petviashvili Equations”, July 1-5, 1996.

- Workshop in Nonlinear Optics, Mathematics Department, University of Arizona, Tucson, Arizona, “Wavelength Division Multiplexed Solitons and Four Wave Mixing”, October 10–12, 1996.
- International Symposium on Advances in soliton theory and its applications—The 30th anniversary of the Toda lattice, Yokohama National University, Yokohama, Japan, “On a New Class of Lump Type Solutions to the Kadomtsev-Petviashvili and Nonstationary Schrödinger Equations”, December 1–4, 1996.
- Conference on Soliton Theory, PDE’s and Nonlinear Analysis, University of New South Wales, Sydney, Australia, “On Solutions of the Nonstationary Schrödinger and Kadomtsev-Petviashvili Equations”, Jan 6-9, 1997.
- Conference on Chaos and Integrability in Discrete Systems, International Solvay Institutes for Physics and Chemistry, Vrije University Brussels, Brussels, Belgium, “Computational and Effective Chaos in Integrable Systems”, July 1997.
- AFOSR Workshop on Nonlinear Optics, Tucson, Arizona, “Wavelength Division Multiplexed (WDM) Solutions: Collision Induced Timing Jitter”, September 24, 1997.
- Conference on Nonlinear Systems, Solitons and Geometry, Oberwolfach, Germany, “On Reflectionless Potentials of the Time Dependent Schrödinger Equation and Solutions to the Kadomtsev-Petviashvili Equation”, October 19–25, 1997.
- First Pacific Rim Conference on Mathematics, Hong Kong, “On Solutions to the Nonstationary Schrödinger Equation and the Kadomtsev-Petviashvili Equation”, January 21, 1998.
- Mathematical Association of America Meeting, New Orleans, Louisiana, “Solitons: from Water Waves to Telecommunications”, February 28, 1998.
- Meeting on *Novel Solitons: Nonlinear Guided Waves*, Victoria, Canada, “Four Wave Mixing”, March 29, 1998
- Department of Applied Mathematics Colloquium, University of Colorado, Boulder, “Solitons from Water Waves to Communication and Encryption”, April 3, 1998.
- Pennsylvania State University, State College, PA, “Computational Chaos in the Nonlinear Schrödinger Equation”, April 24, 1998.
- International Conference on *Solitons, Geometry and Topology: On the Crossroads*, Moscow, Russia, “On Darboux-Halphen (DH) Systems”, May 25, 1998.
- International Meeting on *Integrable Systems: Solutions and Transformations*, Guardamar, Spain, “On Darboux-Halphen (DH) Systems”, June 15, 1998.
- Workshop in Nonlinear Optics, Mathematics Department, University of Arizona, Tucson, Arizona, “Multidimensional Optical Pulses in Chi-2 Materials”, September 23–26, 1998.
- Technion-Israel Institute of Science, Department of Mathematics, Haifa, Israel, “Dispersion Managed Soliton Communications”, March 29, 1999.
- Weizmann Institute of Science, Department of Applied Mathematics, Rehovot, Israel, “Soliton Communications”, March 30, 1999.
- Florida State University, Department of Mathematics, Tallahassee, Florida, “Soliton Communications”, April 16, 1999.
- Conference on *Nonlinearity, Integrability and All That—20 Years after NEEDS ’79*, Gallipoli (Lecce), Italy, July 1–10, 1999, “On Difference Analogs of Painlevé Equations”, July 4, 1999.
- Conference on *Solitons, Collapses, and Turbulence*, Landau Institute, Chernogolovka, (Moscow) Russia, Aug 3-10, 1999, “Modulated Periodic Waves in Deep Water”, Aug. 6, 1999.

Conference: *Nonlinear Optics Workshop*, Tucson, Arizona, Sept. 16-18, 1999, “Long Time Dynamics of Modulational Instability”, September 17, 1999.

University of Maryland, Department of Mathematics, Novikov Seminar, College Park, Md., “Modulated Periodic Waves in Deep Water”, Oct. 23, 1999.

Conference: *Integrating Integrability into Mathematics and Science*, Tucson, Arizona, Oct. 29-31, 1999, “Long Time Dynamics of Modulational Instability”, October 29, 1999.

Nagoya University, Nagoya, Japan, “Modulated Periodic Waves in Deep Water”, Nov. 7, 1999.

Conference: *Symposium on Massive WDM and TDM Soliton Transmission Systems* Kyoto, Japan, Nov. 9-12, 1999, “On the Evolution and Interaction of Dispersion Managed Solitons”, November 9, 1999.

Conference: *Integrable Systems, Kruskal 2000*, Adelaide, Australia, “Chaotic Dynamics of Modulational Instability in Water Waves”, January 4-9, 2000.

Department of Electrical Engineering, University of New South Wales, Sydney Australia, “Dispersion Managed Solitons”, January 10, 2000.

Conference: *Geometric Integration* Durham, England, “Chaotic Dynamics of Modulational Instability in Water Waves”, July 18-28, 2000; July 23, 2000.

Conference: *Nonlinear Optics Workshop*, Tucson, Arizona, Sept. 20-22, 2000, “Discrete Vector Nonlinear Schrödinger Equations”, September 20, 2000.

Conference: *Symmetries and Integrability of Discrete Equations* Tokyo, Japan, “Reversible Cellular Automata with Boundaries”, Nov. 26 - Dec. 1, 2000; Nov. 27, 2000.

Invited participant special NSF Workshop *The Future Revolution in Optical Communications and Networking*, Arlington Virginia, Dec. 4-5, 2000.

Workshop: *Preservation of Stability under Discretization* Math dept. Colorado State University, Fort Collins, CO. May 30-June 2, 2001; “Chaotic dynamics in nonlinear waves—computational and physical”; June 1, 2001.

Summer school “Complex Difference Equations” Mekriärvi Research Station, Finland, July 31 - August 3, 2001 “Integrability in Math and Physics”—4 lectures

Euro Summer School “What is Integrability” Newton Institute, Cambridge U.K. August 13-24, 2001; “On discrete nonlinear Schrödinger systems”; Aug. 13, 2001.

International Conference: “Nonlinear lattice structure and dynamics”, Max-Planck Institute, Dresden Germany, Sept. 23-26, 2001, “Discrete solitons”, Sept. 24, 2001.

International Conference “Arizona Applied Math Fest” Nov. 1-3, 2001, “Quasi-linear pulses in high bit rate optical communications”, Nov. 1, 2001.

Department of Engineering Communications, Osaka University, “Interaction effects in quasi-linear pulse propagation”, Dec. 4, 2001.

Summer School on Theoretical Physics, Canberra Australia, Jan. 20-Feb. 1, 2002, Australian National University; Three lectures on “Nonlinear Waves and (Interesting) Applications”, Jan. 16-18, 2002.

Department of Mathematics, Hong Kong University of Science and Technology, Hong Kong, China; “Nonlinear Waves in High Bit-Rate Communications”; Feb. 8-16, 2002.

Department of Mathematics, Howard University, “Soliton Waves Everywhere”, Mar. 1, 2002.

Department of Mathematics, Ohio State University: “Integrability and nonlinear waves, 150+ years and counting”, April 18, 2002.

Sigma Xi Chapter, University of Colorado, Boulder, "Waves, waves, waves . . . waves everywhere", April 23, 2002

Universidad Complutense University, Madrid Spain, International Conference on "Nonlinear Models in Physics: Perspectives for the XXI Century", June 7-8 2002, "Integrability and Nonlinear Waves — 150+ Years and Counting";, June 7, 2002

Advanced NATO Research Workshop, Cadiz, Spain June 9-19,2002; "Chaotic Dynamics: Computational and Physical", June 14, 2002

European Science Foundation Conference on "Symmetries and integrability of difference equations", June 21-26,2002, "On certain nonlinear difference equations", June 21, 2002.

International Conference: Nonlinear Physics Theory and Experiment, Gallipoli, Italy June 27-July 6, 2002. "Nonlinear waves in high bit-rate communications", June 27, 2002.

Department of Mathematics, MIT, "Nonlinear waves in high bit-rate communications", October 21, 2002

College of Engineering, University of Colorado, Colorado Springs, "WWW: Waves, water and the web!", Oct. 24, 2002

Department of Physics, University of Cuernavaca, "WWW: Waves, water and the web!", Dec. 3, 2002; "Discrete and continuous nonlinear Schrödinger equations", Dec. 4, 2002

Institute for Pure and Applied Mathematics, University of California at Los Angeles, Emerging Applications of the Nonlinear Schrödinger Equation, Feb. 3-7, 2003, "Discrete and continuous nonlinear Schrödinger systems", Feb. 5, 2003

Department of Mathematics, Loughborough University, England, Differential and Difference Equations in the Complex Domain, June 27-July 1, 2003; "Discrete and continuous nonlinear Schrödinger equations", June 27, 2003.

Department of Applied Mathematics, Cambridge University, England, July 1-4, 2003. Research Investigations of Water Waves

Advanced NATO Research Workshop, Nonlinear Waves, Classical and Quantum Systems, Estoril, Portugal, July 12-19, 2003, "Discrete and continuous nonlinear Schrödinger equations", July 12, 2003.

American Mathematics Society National Meeting, Phoenix, Az., Jan. 7-9, 2004, "Chazy-Darboux-Halphen Systems" Jan. 8, 2004.

Department of Mathematics, University of Central Florida, April 10-13, 2004, "WWW: waves water and the web" April 12, 2004, "Chazy-Darboux-Halphen Systems" April 13, 2004.

Conference "Symmetries and Perturbation Theory" Cala Ganone, Sardenia, Italy, June 1-7, 2004, "Chazy-Darboux-Halphen Systems", June 4, 2004.

Department of Physics, University of Rome, Italy, June 12-17, 2004, "Nonlinear waves in high bit-rate communications", June 16, 2004.

Department of Physics, University of Perugia, Italy, June 18-23, 2004, "Nonlinear waves in high bit-rate communications", June 22, 2004.

Conference: Nonlinear Physics Theory and Experiment, Gallipoli, Italy June 24-July 3, 2004. "Chazy-Darboux-Halphen Systems", June 25, 2004.

Conference, Mathematical Methods in Nonlinear Optics, July 19-24, 2004, Edinburgh, U.K., "Dispersion Managed Nonlinear Schrödinger Systems" July 19, 2004.

AFOSR Workshop: Nonlinear Optics, University of Arizona, September 9-11, 2004 "Carrier envelope phase slip for ultrashort optical pulses", September 10, 2004.

Institute for Mathematics and Applications, University of Minnesota, October 25-29, 2004, "Wave collapse in nonlocal nonlinear Schrödinger systems", October 26, 2004.

Conference, Nonlinear waves and applications, University of Tokyo, Tokyo, Japan, February 14-18, 2005, "Wave collapse in nonlocal nonlinear Schrödinger systems", February 14, 2005.

Department of Mathematics, University of Wyoming, "WWW: waves, water and the web", February 24, 2005.

Department of Mathematics, Rutgers University, "Solitary waves: from optics to water waves", September 15, 2005.

Department of Mathematics, Yale University, "Solitary waves: from optics to water waves", September 19, 2005

AFOSR Workshop: Nonlinear Optics, University of Arizona, October 4-5, 2005, "Ultrashort Optical Pulses: Dynamics and Noise", October 5, 2005.

Department of Applied Mathematics, University of Colorado, March 17, 2006; "What you always wanted to know about solitons but..."

Conference "Continuous and Discrete Painlevé Equations", University of Turku, Finland, March 25-28, 2006; "Painlevé equations and soliton solutions of nonlinear equations" March 26, 2006.

Conference "Nonlinearity and randomness in complex systems", SUNY Buffalo, March 31 - April 2 2006; "Solitary waves: from optics to fluid dynamics", March 31, 2006.

Department of Mathematics, University of Massachusetts, April 25, 2006; "Solitary waves: from optics to fluid dynamics".

Department of Mechanical Engineering, University of Rochester, May 5, 2006; "What you always wanted to know about solitons but..."

Conference Integrable systems, Random Matrices and Applications, NYU Courant Institute, May 22-26, 2006; "Integrable systems: Painlevé, Chazy, Ramanujan", May 25, 2006.

Conference: Frontiers in Applied Mathematics, Tsinghua University, Beijing, China, June 8,9, 2006; "Solitary waves: from optics to water waves", June 9, 2006.

Conference Nonlinear Physics Theory and Experiment, Gallipoli, Italy June 22-July 1, 2006, "Solitary waves: from optics to fluids", June 23, 2006

AFOSR Workshop: Nonlinear Optics, University of Arizona, October 16-17, 2006, "Nonlinear wave propagation in irregular lattices", October 16, 2006.

Department of Mathematics, University of Washington, December 5, 2006; "Solitary waves: from optics to fluid dynamics".

College of Arts and Sciences, University of Colorado, Boulder; Professor of Distinction Lecture: "Solitons, why is there so much interest?"; December 8, 2006.

Departments of Mathematics: Princeton and Rutgers Universities, "M.D. Kruskal: Soltions: Discovery and Impact", February 11, 2007

Department of Mathematics, University of Vermont, "Nonlinear waves in optics and fluid dynamics" April 23, 2007.

Department of Mathematics, North Carolina State University, "Soltions: Discovery, Applications and Impact", April 25, 2007.

Department of Mathematics, Imperial College, London, UK, "Nonlinear waves in optics and dispersive shock waves", July 19, 2007.



Department of Mathematics, Imperial College, London, UK, “Nonlinear waves in optics and dispersive shock waves”, July 19, 2007.

International Conference: WAVES 2007, July 23-27, 2007, Reading University, IMA Distinguished Lecturer, “Nonlinear waves in optics and fluid dynamics”, July 23, 2007.

Brazilian Mathematical Colloquium, July 30-Aug. 3, 2007, IMPA, Rio de Janeiro, Brazil, “Solutions: Discovery, Applications and Impact”, Aug. 1, 2007.

International Conference: Partial Differential Equations, Aug. 6-9, 2007, IMPA, Rio de Janeiro, Brazil, “Dispersive shock waves”, Aug. 6, 2007.

AFOSR Workshop: Nonlinear Optics, University of Arizona, September 25-26, 2007, “Pulses and dynamics in mode locked lasers”, September 25, 2007.

International conference: Nonlinear waves Theory and application, Beijing China, June 9-12, 2008, “Solitons and dynamics in mode-locked lasers”, June 11, 2008.

International Conference: Nonlinear Physics Theory and Experiment, Gallipoli, Italy, June 13-16, 2008, “Reformulation and asymptotic reductions of interfacial waves”, June 14, 2008.

Department of Physics, University of Naples, Naples, Italy, “Dispersive Shock Waves”, June 23, 2008.

AFOSR Workshop: Nonlinear Optics, Dayton Ohio, September 10-11, 2008, “Pulses, properties and dynamics in mode locked lasers”, September 10, 2008.

International conference on magnetism and applications, Colorado State University, September 12-14, 2008, “Pulses, properties and dynamics in mode locked lasers”, September 13, 2008.

Department of Physics, Colorado State University, “Nonlinear waves in optics and fluid dynamics”, November 17, 2008.

Distinguished Research Lecture, University of Colorado, Boulder, April 3, 2009, “Extraordinary waves and math—from beaches to lasers”.

Department of Physics University of Rome III, 12 hour short-course on “Nonlinear Waves and Solitons”: April 27-May 5, 2009.

Department of Physics University of Rome III, “Nonlinear waves in optics and fluid dynamics”, May 6, 2009.

Department of Mathematics University of Perugia, “Nonlinear waves in optics and fluid dynamics”, May 7, 2009.

Department of Physics University of Rome, “Dispersive shock waves”, May 8, 2009.

International Conference, on Analysis and Computation, June 24-28, Shanghai China, Shanghai Normal Univ., “Nonlinear waves in optics and fluid dynamics”, June 24, 2009.

SIAM annual Meeting July 6-10, 2009, Denver, CO, Special session: Mode-locked lasers, “Pulses, properties and dynamics in mode locked lasers”, July 9, 2009.

AFOSR Workshop: Nonlinear Optics, Dayton Ohio, September 9-10, 2009, “Pulses, properties and dynamics of mode locked lasers”, September 9, 2009.

International Conference on numerical analysis and applied mathematics, Rethymno, Crete, Greece, Sept. 18-23, 2009 Invited lectures: plenary: “Nonlinear waves in optics and fluid dynamics”, Sept. 20, 2009, Mini-symposium: Nonlinear waves: “Nonlocal reformulations of water and internal waves and asymptotic reductions”, Sept. 19, 2009.

Department of Physics University of Athens, Athens, Greece, “Extraordinary waves –from beaches to lasers”, Sept. 24, 2009.

Department of Mathematics, University of Colorado Colorado Springs, First Annual Distinguished Lecture, “Extraordinary waves: from beaches to lasers”, Oct. 8, 2009.

Southeastern SIAM conference, Department of Mathematics, North Carolina State University, March 20-21, 2010, “Nonlinear waves—from beaches to lasers”, March 20, 2010

Department of Mathematics, University of Saskatchewan, Saskatoon, Canada, “Nonlinear waves—from beaches to lasers”, March 23, 2010

International Conference: Frontiers in Nonlinear Waves in honor of V.E. Zakharov, Department of Mathematics, University of Arizona, Tucson, AZ, “Nonlinear waves—from beaches to lasers”, March 27, 2010.

Department of Mathematics, University of New Mexico, Albuquerque, NM “Nonlinear waves—from beaches to lasers”, April 8, 2010.

International Conference: Symmetries Plus Integrability in honor of Y. Kodama, June 10-14, “A nonlinear waves world: from beaches to lasers”, June 10, 2010.

International Conference: Wave Phenomena IV, Univ. of Alberta, Edmonton, Canada, June 14-18, “Nonlocal formulation of water and internal waves and asymptotic reductions”, June 16, 2010.

Conference—joint Italian, Spanish societies of industrial and applied math (SIMI) Cagliari, Sardinia, Italy, at University of Cagliari, June 21-25, 2010, “Nonlocal formulation of water and internal waves and asymptotic reductions” June 21, 2010.

International Conference: Nonlinear waves, Tsinghua University, Beijing China, June 26-29, 2010, “Nonlocal formulation of water waves and their solitary waves”, June 26, 2010; “Nonlocal formulation of internal waves and asymptotic reductions”, in honor of D.J. Benney, June 27, 2010.

International Workshop on Nonlinear Optics, Nankai University, Tianjin, China, “Nonlinear waves—from beaches to lasers”, June 30, 2010.

AFOSR Workshop: Nonlinear Optics, Albuquerque, NM, Sept 21-22, 2010, “Evolution of Nonlinear Wave Envelopes in Photonic Lattices”, Sept. 21, 2010

JILA Colloquium, Univ. of Colorado, Boulder, Nov 2, 2010, “All About Waves”

Seventh International Conference on Differential Equations and , Dynamical Systems, Univ. South Florida, Dec. 15-18, 2010; “Nonlinear waves—from beaches to lasers”, Dec. 15, 2010

Dept. of Electrical and Computer Engineering, Univ. of Colorado, Boulder, COSI Seminar Series, “Nonlinear waves—from beaches to lasers”, Jan. 24, 2011

International Conference on ‘Integrability and Physics’—in Honor of A. Degasperis 70th birthday; Dept of Physics Univ of Rome, Italy, Nonlinear Waves in Photonic Lattices and “Optical Graphene”, March 25, 2011

Dept. of Physical Chemistry, Scuola Normale, Pisa, Italy, “Nonlinear waves—from beaches to Optical Graphene”, March 29, 2011

Conference on Nonlinear Waves, Univ of Georgia, Athens Georgia, April 3-6, 2011, “Nonlinear waves—from beaches to Photonic Graphene”, April 3, 2011

Dept. of Applied Mathematics, Columbia Univ, April 13-16, 2011, “Nonlinear waves—from beaches to Optical Graphene”, April 15, 2010

Conference on ‘The Versatility of Integrability’—in honor of I. Krichever’s 60th birthday, Dept of Math, Columbia University, May 4-6, 2010, “Chazy–Ramanujan Type Equations”, May 4, 2011

Invited member: ‘SQuaRE: Nonlinear wave equations and integrable systems; American Institute of Mathematics (AIM), May 9-14, 2011

Conference on Nonlinearity and Coherent Structures, Univ. of Reading, July 6-8, 2011, Distinguished IMA lecturer, “Nonlinear waves—from beaches to Optical Graphene”, July 9, 2011

Physics Department, University of Colorado, Boulder, Aug. 31, 2011, “What you always wanted to know about nonlinear waves but...”

International Conference on Scientific Computing, Pula, Sardinia, Italy - October 10-14, 2011, “Nonlinear waves: from oceans to optical graphene”, Oct 11, 2011

AFOSR Workshop: Nonlinear Optics, Albuquerque, NM, Oct 18-19 2011, “Nonlinear Waves in Photonic Lattices and ‘Optical Graphene’”, Oct 19, 2011

Joint American-South African Mathematics Society International Mathematics Conference, Nov 29-Dec 2, 2011, “Nonlinear Systems—from Oceans to Number Theory”, Nov. 29, 2011

Invited member: ‘SQuaRE: Nonlinear wave equations and integrable systems; American Institute of Mathematics (AIM), Feb. 13-17, 2012

Frontiers in Applied and Computational Math, NJIT, May 18-20, 2012, Nonlinear waves from beaches to nonlinear optics, May 19, 2012

Nonlinear evolution equations and dynamical systems (NEEDS), Chania, Greece, July 8-15, 2012, Nonlinear waves from beaches to photonic lattices, July 8, 2012

Nonlinear waves and Fluids, Loughborough, UK, Sept. 12-14, 2012, Nonlinear waves from fluids to photonic lattices, Sept. 12, 2012

AFOSR Workshop: Nonlinear Optics, Albuquerque, NM, “Optical pulse evolution and dynamics in honeycomb photonic lattices”, Sept. 19, 2012

Invited member: ‘SQuaRE: Nonlinear wave equations and integrable systems; American Institute of Mathematics (AIM) Palo Alto Calif., Feb. 18-22, 2013

South African Numerical and Applied Mathematics Symposium, Stellenbosch, SA, Nonlinear waves from beaches to dispersive shock waves, April 3, 2013

Conference Board on Math Sci. conference on two-dimensional solitons, water waves; Edinberg, Texas, May 20-24, 2013; Two-dimensional water waves theory and ocean observations, May 20, 2013

BIRS Workshop on Water Waves: Banff Canada, June 30-July 5, 2013; Two-dimensional water waves theory and ocean observations., July 1, 2013

The 8th Symposium on Quantum Theory and Symmetries, Mexico City Aug. 5-9, 2013, Nonlinear waves from beaches to dispersive shock waves, Aug. 5, 2013

Deformations, Localized Edge States and Associated Pulse Dynamics in Nonlinear Optical Honeycomb Lattices, AFOSR Workshop: Nonlinear Optics, Arlington, VA, Sept. 5, 2013

Electrical Engineering Dept. Colloquium, North Carolina State Univ, Jan. 17, 2014, “Nonlinear waves from beaches to photonic lattices”

Applied Mathematics Dept., Colloquium, Calif. Inst. of Tech., Feb 3, 2014, ‘Nonlinear waves from beaches to photonic lattices”

Center for Nonlinear Studies, Los Alamos National Laboratory, Colloquium, March 10, 2014, ‘Nonlinear waves from beaches to photonic lattices”

Frontiers in Applied Mathematics, New Jersey Institute of Technology, May 22-23, 2014, May 22, 2014 “Nonlinear waves, solitons and applications”

Nonlinear Waves in Sicily, June 8-13, 2014, June 9, 2014 “Nonlinear waves in photonic lattices”

SIAM Conference NL Waves and Coherent Structures, Cambridge University, UK, Aug. 11-14, 2014, Aug. 11, 2014, “Nonlinear waves from beaches to photonics”

Nonlinear Optics Workshop, Air Force BRIC, Arlington, VA. Oct. 2, 2014, “Photonic honeycomb lattices: localized linear and nonlinear edge states”

Colloquium, University of Ioannina, Greece, Oct. 23, 2014, “Nonlinear waves Always Alluring”

Colorado Nonlinear days, University of Colorado, Colorado Springs, Nov. 1, 2014, “Nonlinear Waves- Still Many Surprises”

First Annual Meeting of SIAM Central States Section, Missouri University of Science & Technology, April 11-12, 2015, “Nonlinear Waves Always Intriguing” April 11, 2015

Banff International Research Station (BIRS), Dispersive Hydrodynamics: the Mathematics of Dispersive Shock Waves and Applications, May 17–22, 2015, “Remarks on interactions of shock waves and long time asymptotics”, May 19, 2015

Los Alamos/Santa Fe Institute, Emergent Paradigms in Nonlinear Complexity: From PT-Symmetry to Nonlinear Dirac Systems, From Polaritons to Skyrmions, June 8-10, 2015, “Photonic Graphene: Edge Solitons and Properties” June 8, 2015

Nonlinear Waves in Malta, June 20-22, 2015, “Photonic Graphene: Edge Solitons and Properties” Malta, June 20, 2015

Multidimensional shallow water waves, Colloquium, Dept. Mechanical Engin., U. Rochester, Sept 18, 2015

Multidimensional water waves: Dispersive Shocks and Rogue Waves, Math dept, SUNY Buffalo, Sept 20, 2015

Photonic Graphene: Propagation and Dynamics of Edge Solitons, AF Workshop Nonlinear Optics, Oct. 8, 2015

Tutorial: Lectures on the Inverse Scattering Transform, Teipei, Taiwan, Oct 18, 2015

Multidimensional water waves: Dispersive Shocks and Rogue Waves, Conference on Nonlinear waves and integrability, Teipei, Taiwan, Oct 19, 2015

“Solitons at age 50 and more...” APPM, U. Colo. Boulder, March 11, 2016

“Nonlinear Waves: Solitons After 50 Years, and More...”, Math Dept. University Science and Technology, Hefei, China, June 26, 2016

“Photonic Graphene and Dynamics”, International Meeting Nonlinear waves, Tsinghua University, Beijing, China, June 25, 2016 (Meeting June 25-28, 2016)

“Nonlinear Waves: Solitons After 50 Years, and More...”, Math Dept, Tsinghua University, Beijing, China, June 28, 2016

“Photonic Graphene and Wave Propagation”, SIAM National Meeting, Boston Mass, July 11, 2016 (Meeting July 11-15, 2016)

“On the Inverse Scattering Transform: History, Background Methods, London Math Society Meeting on Integrability”, Durham, UK, July 26, 2015 (Meeting July 24-31, 2016)

“Wave Propagation Across Edges and Corners in Bounded Photonic Graphene”, AF Workshop Nonlinear Optics, Sept 27, 2016

“Wave Propagation in Photonic Graphene and Rogue Waves”, Inst. for Math and Applications (IMA), U. Minn., Oct. 31, 2016 (Meeting Oct. 31-Nov 4, 2016)

“Nonlinear Waves: Solitons at age 50 and ”, Physics Dept Colloquium, U. Mich., Nov. 8, 2016

“Solitons and (Many) Nonlocal Integrable Nonlinear Equations”, Applied Math Seminar, U. Mich., Nov. 10, 2016

“Solitons and (Many) Nonlocal Integrable Nonlinear Equations”, Canadian Math. Society, Dec. 4, 2016

“Solitons At Age 50 and More”, Plenary Lecture, Canadian Math. Society, Dec. 5, 2016

“Solitons at 50”, Connecticut Valley Symposium, Math Dept., University of Mass., Amherst, Mass, April 6, 2017

“Edge Mode Dynamics in Rapidly and Adiabatically Varying Photonic Graphene”, AF contractor meeting, Arlington VA, March 8, 2017

“Solitons and (Many) Nonlocal Integrable Nonlinear Equations”, Math Dept., Colorado State University, Fort Collins, Colo., April 20, 2017

“Edge Mode Dynamics in Rapidly and Adiabatically Varying Photonic Graphene” May 29, 2017, Nonlinear Waves in Israel, Rosh Pinna, Israel, May 29-30, 2017,

“Solitons and (Many) Integrable Nonlocal Nonlocal Equations”, June 19, 2017, Physics and Mathematics of Nonlinear Phenomena 2017: 50 years of I.S.T., Gallipoli, Italy, June 18-23, 2017,

“(Many) Integrable Nonlocal Nonlinear Equations and Solitons”, Aug. 4, 2017, Recent Advances in Nonlinear Waves, conference in honor of Harvey Segur’s 75th birthday, Univ Wash. Seattle, July 31-Aug 4.

Tight-binding models for longitudinally driven linear/nonlinear photonic lattices, Banff Res. Conference, Sept. 10-15, 2017, Sept. 11, 2017

“Integrable Nonlocal Nonlinear Equations and Solitons”, Nonlinear days, Univ Colo. Colo Springs, Nov 11, 2017

“Tight Binding Models for Longitudinally Driven Linear/Nonlinear Lattices”, AF contractor meeting, Arlington VA, March 7, 2018

U. Kent Honorary degree and conference, July 18-20, 2018

“Wave Dynamics in Linear/Nonlinear Photonic Lattices and Topological Insulators”, Waves in Random Media, May 21-25, 2018, Colorado State University, May 23, 2108

“New Classes of Integrable Nonlocal Nonlinear Equations and Solitons”, Dynamics Days Europe Sept 1-6, 2018, Loughborough Univ., Sept 2, 2018

“New Classes of Integrable Nonlocal Nonlinear Equations and Solitons”, ACMS30, U. Arizona, Nov. 28-29, 2018, Nov. 28,2018

“Topological insulators in Lieb/Kagome photonic lattices” AF contractor meeting, Arlington VA, March 6, 2019

“New Integrable Nonlocal Nonlinear Equations and Solitons”, Isaak Newton Institute, Cambridge Univ., Complex Analysis and Applications, September 2-16, 2019, Lecture September 9, 2019

“Awesome waves and math: from beaches to photonics” Isaak Newton Institute, Cambridge Univ., Complex Analysis and Applications, November 13-26, 2019, Lecture November 14, 2019

Cambridge Univ., Complex Analysis and Applications, November 13-26, 2019, Rothschild Lecture November 14, 2019

“Topological Insulators in Magneto-Optic Lattices”, AF contractor meeting (remote), Arlington VA, March 3, 2020

“Nonlinear Waves, Topological Insulators, Integrability”, Lecture part of series: Nonlinear Waves and Coherent Structures, (remote), Organized by P. Kevrekides, U. Mass, Amherst, C. Chong Bowden College, S. Charalampidis, Calif Poly, Oct. 12, 2020

- “Peierls-Nabarro Barrier Effect in Nonlinear Topological Insulators”, AF contractor meeting, (remote) Arlington VA, March 2, 2021
- “Fascinating Waves and Math” London Taught Course Centre, organized by Rod Halburd, Shahn Majid and Alastair Young, remote, Dec 16, 2021
- Unified Method: Topological Waves in Photonic Waveguides, AF contractor meeting, (remote) Arlington VA, March 2, 2022
- “Integrable Fractional and Nonlocal Nonlinear Evolution Equations”, Virtual Integrable Systems Seminar, (remote), International Centre for Mathematical Sciences, University of Edinburgh, April 13, 2022
- “Topological waves in photonic lattices”, June 15, 2022, Workshop Nonlinear Waves In honor of D. Franzakis 60th bday, Athens Greece, June 15, 2022, Organizer, P. Kevrekidis
- “Integrable Fractional and Nonlocal Nonlinear Evolution Equations”, June 17, 2022, Workshop on Nonlinear Waves in Discrete and Continuum Systems, Mathematics Research Center, University of Pittsburgh, June 17-18, 2022, Organizer Anna Vainstein
- “Water Waves, Integrability and Stability”, July 22, 2022, Conference, Dynamical Systems and Complexity, Honor of A.S. Fokas 70th Bday, Chania, Greece, July 18-26, 2022, Organizer T. Bountis
- “Integrable Fractional and Nonlocal Nonlinear Evolution Equations”, Aug 9, 2022, International workshop on integrable systems, Xidian University, China and Univ of Texas, Rio Grande Valley
- “Topological Dynamics in Magneto-optical Honeycomb Lattices”, AF contractor meeting, (remote) Arlington VA, March 1, 2023
- “Universal Equations, Integrability and Applications”, Colorado Days, UCCS, April 29, 2023