February 3, 2022


NAME: Yannis G. Kevrekidis

DATE OF BIRTH: March 26, 1959, Athens, Greece

NATIONALITY: dual U.S. and Greek citizenship

ADDRESS: 4904 Roland Ave. PHONE: (609) 532-0772 (cell)
Baltimore, MD 21210


DEGREES: Dipl. Chem. Eng., N.T.U. Athens, 1982
MA, Mathematics, U. of Minnesota, 1986
PhD, Chemical Engineering, U. of Minnesota, 1986
Thesis Advisors: Rutherford Aris and Lanny Schmidt
Thesis: *On the Dynamics of Chemical Reactions and Reactors*

ACADEMIC POSITIONS:

**Bloomberg Distinguished Professor**, Johns Hopkins University and Johns Hopkins Medical Institutes; Departments of Chemical and Biomolecular Engineering, of Applied Mathematics and Statistics, of Biomedical Engineering, and of Urology.
**Pomeroy and Betty Perry Smith Professor of Engineering** Princeton University, February 2007-2017 (now Emeritus) (Professor of Chemical Engineering Summer 1994-present, Associate Professor Summer 1991 - Spring 1994, Assistant Professor, Fall 1986 - Spring 1991)
**Senior Faculty, Program in Applied and Computational Mathematics,** Princeton University, Summer 1994 - 2017 (now Emeritus) (Associated Faculty Fall 1987 - Spring 1993)
**Associated Faculty, Department of Mathematics**, Princeton University, Winter 2002-2017
**Director's Post-Doctoral Fellow,** Center for Nonlinear Studies and Theoretical Division, Los Alamos National Laboratory, Fall 1985 - Summer 1986

Visiting

Einstein Foundation Fellow, Konrad-Zuse-Institut, Berlin, 2016
Rothschild Distinguished Visitor, Isaac Newton Institute, Cambridge, Summer 2016
Hans Fischer Senior Fellow, EEC and T.U. Muenchen, Fall 2015
Microsoft Visitor, Isaac Newton Institute, Cambridge University, Summer 2013
Gutzwiller Fellow, Max Planck fur Physik Komplexer Systeme, Dresden, 2010-2011
Control and Dynamical Systems (Moore Scholar), Caltech, Fall 2005
Professeur Invite, Ecole Normale Superieure, November 2005
O. A. Hougen Visiting Professor, University of Wisconsin, Fall 2002
Professor, Department of Chemical Engineering, University of Patras, 1999
Stanislaw Ulam Visiting Scholar, Los Alamos National Laboratory, Fall 1994 - Summer 1995
Visiting Associate Professor, Applied Mathematics, University of Colorado, Boulder, Fall 1991.
Summer 1996 - Spring 1998: Researcher A, (Part-Time, every summer), I.T.E., Patras, Greece.

HONORS and AWARDS

National Academy of Engineering, elected 2020
American Academy of Arts and Sciences, elected 2017
W.T. and Idalia Reid Prize in Mathematics, Society of Industrial and Applied Mathematics (2016)
AIChE Fellow, Summer 2016
Einstein Foundation and Zuse Institute, Distinguished Visiting Fellowship (2016-2018)
Isaac Newton Institute, Cambridge, Rothschild Visiting Distinguished Fellowship (2016)
Academy of Athens, Corresponding Member, Elected 2015
Institute for Advanced Study, Technical University of Munich, and EEC: Hans Fischer Senior Fellowship (2015-2018)
Isaac Newton Institute, Cambridge, Microsoft Visitorship (2013)
MPIPKS, Dresden, Martin Gutzwiller Fellowship (2010-2011)
American Institute of Chemical Engineers, Richard H. Wilhelm Award (2010)
SIAM Fellow (2010)
American Institute of Chemical Engineers CAST Division Award (2008)
Pomeroy and Betty Perry Smith Professorship of Engineering, Princeton University (2007)
Moore Distinguished Scholar, Caltech, Fall (2005)
J. S. Guggenheim Fellow (2005)
J. D. Crawford Prize, SIAM - Dynamical Systems (2003)
Alexander von Humboldt Foundation Senior Research Award (1998)
Bodossakis Foundation, Award in the Applied Sciences (1996)
American Institute of Chemical Engineers, Allan P. Colburn Award (1994)
Stanislaw Ulam Visiting Scholar, Center for Nonlinear Studies, Los Alamos National Laboratory, (1994-95)
National Science Foundation, Presidential Young Investigator Award (1989)
David and Lucile Packard Foundation, Fellowship in Science and Engineering (1988)

27th Roger Sargent Lecture, Imperical College, London, (2021)
Payatakes Lecture, University of Houston, Houston, TX (2016)
MIT Distinguished Speaker HPCS Series, MIT (2003)
O. A. Hougen Lectures, University of Wisconsin (2002)
Collaboratus Lecture, Rutgers University (2002)
Allan P. Colburn Lecture, University of Delaware, (1994)
Invited Lecturer, XV and XIX Chemical Engineering Seminars, Istituto Tecnologico de Celaya, Celaya, Gto., Mexico, January 1995 and 2000.
Norbert Wiener Lecture, Mathematics, Univ. of Maryland, Spring 2018
Princeton University, School of Engineering & Applied Science Alfred Rheinstein Class of 1911 Faculty Award (1988)
SIAM best video-poster presentation award, SIAM 1994 annual meeting, San Diego, CA, July 1994 (with M. Johnson -presenter- and M. S. Jolly)
ICCS 2013 best paper award (with M. O. Williams, F. Li, P. G. Kevrekidis and C. Daraio)
**Teaching:** 1999 SEAS Distinguished Teaching Award.
Engineering Council, Princeton University Award for Excellence in Teaching,

- **1.** (1989), for the Fall 1989 ChE 441 (Chemical Reactor Engineering)
- **2.** (1990), for the Spring 1990 ChE 444/MAT 444 (Special Topics; Introduction to Nonlinear Dynamics)
- **3.** (1991) for the Fall 1990 ChE 441 (Chemical Reactor Engineering)

– **4.** (2013) for the Fall 2012 CBE 502 (Engineering Mathematics)

**Graduate:** University of Minnesota:

– Graduate School Dissertation Fellowship, 1984-85

– Stanwood-Johnston Memorial Fellowship, 1983-84

– Graduate School Fellowship, 1981-82

**Undergraduate:** National Technical University, Athens:

– Prize of the Greek National Scholarship Foundation (IKY) 1976, 1977, 1978, 1979, 1980, 1981

– Prize of the Greek Press Workers Association (ΕΣΗΕΑ) 1977, 1978

– Prize 17th November 1973 of the Greek Chamber of Engineering (TEE), 1977, 1978, 1979, 1980, 1981

PROFESSIONAL:

**Associate Editor**

- **(a)** SIAM Journal on Applied Mathematics (1994-2000);
- **(b)** SIAM Journal on Numerical Analysis (1998-2001);
- **(c)** Journal of Nonlinear Science (Springer Verlag);
- **(d)** International Journal of Bifurcations and Chaos in Applied Sciences and Engineering (World Scientific).
- **(e)** SIAM Multiscale Modeling and Analysis (2003-2009);
- **(f)** Nonlinearity, (2006-present);

**Advisory Board** Chaos (APS) 1997-present
**International Advisory Panel** Chemical Engineering Science (Elsevier), 1999-present
**Editorial Board** Reviews in Chemical Engineering (Freund), 1999-present
**External Advisory Committee**, Center for Nonlinear Studies, LANL, UC Santa Barbara, Chemical Engineering (UC), Department of Applied Mathematics, University of Crete, Greece; Friday Harbor Laboratories Center for Cell Dynamics; Illinois Institute of Technology, Department of Applied Mathematics.

**Consultant**,

- Los Alamos National Laboratory, Summer 1988 - present
- Shell Development Co., Summer 1989 - 90
- Exxon Research & Engineering Co., Spring 1992, 1997-1999
- UTRC/Mechatronics, IFC, 2000-2003; 2016-present
- CFDRC, 2004-2005
- AIMDYN 2016-present

PROFESSIONAL ORGANIZATIONS:

American Institute of Chemical Engineers
SIAM (Dynamical Systems)
American Physical Society (Fluid Mechanics)
American Chemical Society

PROFESSIONAL SERVICE:

Session Co-Chairman, AIChE annual meeting, Washington DC (1988)
Session Chairman, Gordon Conference on Oscillations, Plymouth, NH (1988)
Session Co-Chairman, AIChE annual meeting, Chicago, IL (1990)

Session Co-Chairman, AIChE annual meeting in Los Angeles, CA (1991)
Session Co-Chairman, AIChE annual meeting in Miami, FL (1992)
Minisymposium Organizer, SIAM Annual Meeting, Los Angeles, CA (1992)
Symposium Co-Organizer, SES 29th Annual Meeting, La Jolla, CA (1992)
Minisymposium Organizer, SIAM Dynamical Systems Meeting, Utah (1992)
Symposium Co-Organizer, SIAM Annual Meeting, Philadelphia, PA (1993)
Chairman, Computers and Systems Technology Division Area 10D of the AIChE, November 1992 - 1994 (Vice-Chairman 1990-1992)
Panel Member, NSF Panels on Career Initiation and PYI awards, DOE Review Panel for Applied / Computational Mathematics
Workshop co-organizer, Dynamics of Noninvertible Systems, March 1995, NSF Geometry Center, University of Minnesota (with R. P. McGehee and Christian Mira).
Minisymposium Organizer, SciCADE 1995, Stanford University, March 1995
Session Chair, SIAM Dynamical Systems Meeting, Utah, May 1995 (two sessions)
Co-organizer, Conference on Numerical Bifurcation Theory, NSF Geometry Center, University of Minnesota, Fall 1996
Co-organizer, Special Year on Dynamical Systems, NSF Institute of Mathematics and its Applications, University of Minnesota, 1997-98
Co-organizer, Small-Scale Dynamics of Physicochemical Conferences at Interfaces, MPIPKS, Dresden, June 1998
Minisymposium Organizer, EQUADIFF, Berlin, August 1999
DMV-Seminar Co-organizer and Lecturer (with Bernold Fiedler), Pattern Formation, Oberwolfach, Germany, November 1999
SIAM/Dynamical Systems, Symposium Coorganizer, Utah, May 2001
Session Chairman, AIChE annual meeting, Indianapolis, November 2002
Organizing Committee and Session Chairman, NSF/SAMSI Workshop on Multiscale Challenges in Soft Matter, North Carolina, February 2004.
Conference co-organizer (with A. Gorban and others), Leicester, Summer 2007
NSF Panel on Simulation Based Science and Engineering, Spring 2007
NSF Panel on Complex Systems, September 2008
Session Organizer, AIChE annual meeting, Philadelphia, November 2008
NSF Workshop on Uncertainty Quantification, Los Angeles, April 2009
Session Organizer, Conference on Chemical Complexity, FHI der MPG, Berlin, 2011
Minisymposium Organizer, SIAM annual meeting, San Diego, 2013
Minisympsium Organizer, SIAM Dynamical Systems meeting, Snowbird, May 2015
Symposium co-Organizer, IAS-TU Munich, January 2017

PUBLICATIONS:

Papers in Refereed Journals

1. Multiplicity and Oscillations in Single Species Surface Reactions, *Surface Science* **137** p.151-166 (1984) with L. D. Schmidt & R. Aris
2. On the Dynamics of Periodically Forced Chemical Reactors, *Chem. Eng. Commun.* **30** p.323-330 (1984) with L. D. Schmidt and R.Aris
3. Numerical Computation of Invariant Circles of Maps Physica 16D p.243-251 (1985) with R. Aris, L. D. Schmidt and S. Pelikan
4. Some Common Features of Periodically Forced Reacting Systems Chem. Eng. Sci. 41 p.1263-1276 (1986) with L. D. Schmidt and R. Aris
5. The Stirred Tank Forced Chem. Eng. Sci. 41 p. 1549-1560 (1986) with R. Aris and L. D. Schmidt
6. Entrainment Regions for Periodically Forced Oscillators Phys. Rev. A 33 p.2190-2192 (1986) with D. G. Aronson, R. P. McGehee and R. Aris
7. Resonance in Periodically Forced Processes Chem. Eng. Sci. 41 p.905-912 (1986) with R. Aris and L. D. Schmidt
8. Forcing an Entire Bifurcation Diagram: Case Studies in Chemical Oscillators, Physica 23D, p. 391-395 (1986), with R. Aris and L. D. Schmidt
9. A Numerical Study of Global Bifurcations in Chemical Dynamics A.I.Ch.E.J. 33 p.1850-1864 (1987)
10. Interactions of Resonances and Global Bifurcations in Rayleigh-Béenard Convection, Physics Letters A 131 (1988), p. 344 - 352 with R. E. Ecke
11. Scaling Laws and the Prediction of Bifurcations in Systems Modeling Pattern Formation, Physics Letters A 130 (1988) p.73-80 with C. Scovel and B. Nicolaenko.
12. On the Computation of Inertial Manifolds, Physics Letters A 131 (1988) p.433-436 with C. Foias, M. Jolly, G. R. Sell and E. Titi
13. Predicting Pattern Formation in Coupled Reaction-Diffusion Systems, Chem. Eng. Sci. 44 (1989) pp.1893-1901, with H. S. Brown
14. Back in the Saddle again: A Computer-Assisted Study of the Kuramoto-Sivashinsky PDE, SIAM J. Appl. Math. 50 pp.760-790 (1990) with B. Nicolaenko and C. Scovel
15. On the Coexistence of Competing Microbial Species in a Chemostat under Cycling, Biotech. Bioeng., 35 (1990) pp.224-232, with S. Pavlou and G. Lyberatos
16. Approximate Inertial Manifolds for the Kuramoto-Sivashinsky Equation: Analysis and Computations, Physica D, 44 pp.38-60 (1990), with M. S. Jolly and E. S. Titi.

17. Dynamics of Pulsing Flow in Trickle Beds, AIChE Journal, 36 (1990), pp.605-621, with D. C. Dankworth and S. Sundaresan

18. Nonlinear Signal Processing and System Identification: Applications to Time Series from Electrochemical Reactions, Chem. Eng. Sci., 45 pp.2075-2081 (1990) with J. Hudson, M. Kube, R. Adomaitis, A. Lapedes and R. Farber.

19. A Simple Idiotypic Network Model with Complex Dynamics, Chem. Eng. Sci., 45 pp.2375-2382 (1990), with R. DeBoer and A. S. Perelson

20. Time Dependent Hydrodynamics in Multiphase Reactors, Chem. Eng. Sci., 45 pp.2239-2246 (1990), with D. C. Dankworth and S. Sundaresan

21. Resonance Phenomena in an Adaptively-Controlled System, Int. J. Bifurcations and Chaos, 1 pp.83-106 (1991) (with C. E. Frouzakis and R. A. Adomaitis)

22. Noninvertibility and the structure of basins of attraction in a model adaptive control system, Nonlinear Science, 1, pp.95-105 (1991), with R. A. Adomaitis

23. Chaotic Advection in a Complex Annular Geometry, Physics of Fluids A, 3, pp.1063-1067 (1991),with D. Barkley, G. E. Karniadakis, Z.-H. Shen and A. Smits

24. Preserving Dissipation in Approximate Inertial Forms, J. Dyn. & Dif. Equ., 3 pp.179-197 (1991), with M. S. Jolly and E. S. Titi

25. Common Features of Coupled Oscillatory Reacting Systems, Physica 51D, pp.274-292 (1991), with M. A. Taylor.

26. Dissipativity of Numerical Schemes, Nonlinearity 4 pp.591-613 (1991), with C. Foias, M. S. Jolly and E. S. Titi.

27. Low-Dimensional Models for Complex Geometry Flows: Application to Grooved Channels and Circular Cylinders,Physics of Fluids A , 3, pp.2337-2354, (1991) with A. E. Deane, G. E. Karniadakis and S. A. Orszag

28. Higher Order Degeneracies in the Local Period Doubling for Diffeomorphisms, SIAM J. Appl. Math., 22 pp.1552-1574 (1991)with B. Peckham.

29. Microbial Predation in a Periodically Operated Chemostat: A Global Study of the Interaction Between Natural and Externally Imposed Frequencies, Math. Biosciences, 108(1), pp. 1 - 55 (1992) with S. Pavlou.

30. Interaction of Interleukin-2 with its cell surface receptors: Interpretation of equilibrium binding experiments via Scatchard plots, International Immunology, 4 pp.23-32 (1992) with B. Goldstein, D. Jones and A. S. Perelson.

31. Infinite Wavelength Analysis for Two-Phase Flow: A three-parameter computer assisted study of global bifurcations, Physica D 55, pp.197-220 (1992) with D. C. Dankworth and S. Sundaresan

32. Bifurcations and Pattern Formation in the Regularized Kuramoto-Sivashinsky Equation, Physics Letters A, 163, pp.299-308 (1992), with H. S. Brown, P. Rosenau and A.Oron

33. Discrete- vs. Continuous Time Nonlinear Signal Processing of Cu Electrodissolution Data, Chem. Eng. Comm. 118 pp.25-48 (1992) with R. Rico-Martinez, K. Krischer, M. C. Kube and J. Hudson.

34. A Heterogeneous Catalyzed Reaction with Spatiotemporal Variations: Model Identification using Nonlinear Signal Processing, AIChE J. 39 pp.89-98, (1993) with K. Krischer, R. Rico-Martinez, H. Rotermund, G. Ertl and J. L. Hudson

35. Couple, Double, Toil and Trouble: A computer-assisted study of two coupled CSTRs, Chem. Eng. Sci 48(11), pp.2129-2149 (1993) with M. A. Taylor.

36. Immune Network Behavior I: From Stationary States to Limit Cycle Oscillations, Bull. Math. Biology 55 pp.745-780 (1993) with R. J. DeBoer and A. S. Perelson

37. Immune Network Behavior II: From Oscillations to Chaos and Stationary States Bull. Math. Biology 55 pp.781-816 (1993) with R. J. DeBoer and A. S. Perelson

38. Spatiotemporal Period Doubling during the Electrodissolution of Iron *Physics Letters A*, **179** pp. 355-363 (1993) with J. L. Hudson, J. Tabora and K. Krischer

39. Global Bifurcation Analysis in Rayleigh-Bénard Convection Experiments, Empirical Maps and Numerical Bifurcation Analysis, *Physica D*, **71** pp.342-362 (1994) with R. Rico-Martinez, R. E. Ecke, A. Lapedes and R. Farber.

40. On some dissipative, fully discrete nonlinear Galerkin schemes for the Kuramoto-Sivashinsky Equation, *Physics Letters A* **186** pp.87-96 (1994) w. C. Foias, M. S. Jolly and E. S. Titi

41. Effects of Boundaries on Pattern Formation: Catalytic Oxidation of CO on Pt, *Science*, **264** pp.80-82, with M. D. Graham, K. Asakura, J. Lauterbach, K. Krischer, H. H. Rotermund and G. Ertl.

42. Microbial Predation in Coupled Chemostats, *Math. Biosciences* **122** pp.25-66 (1994) with M. A. Taylor and S. Pavlou.

43. A Dynamical Systems Approach to Spiral Wave Dynamics, *Chaos* **4** pp. 453-460 (1994) with Dwight Barkley

44. Bananas and Banana Splits: A Parametric Degeneracy in the Hopf Bifurcation for Maps, *SIAM J. Math. Anal.*, **26**(1) pp.190-217 (1995) with B. Peckham and C. Frouzakis

45. Catalysis on Microstructured Surfaces, *Phys. Rev. E*, **52**, pp.76-93 (1995) with M. D. Graham, M. Baer, K. Asakura, J. Lauterbach, H. H. Rotermund and G. Ertl

46. Dynamics of concentration patterns of the NO + CO reaction on Pt: Analysis with the Karhunen-Loeve Decomposition, *Chaos, Solitons and Fractals* **5** pp.1817-1831 (1995), with M. D. Graham, J. L. Hudson, K. Krischer, G. Veser and R. Imbihl

47. Observations of front bifurcations in controlled geometries: from one to two dimensions, *Phys. Rev. Letters*, **75**, pp.3560-3563 (1995) with G.Haas, M. Baer, P. Rasmussen, H.-H. Rotermund and G. Ertl

48. Matrices are Forever: On Applied Mathematics and Computing in Chemical Engineering, *Chem. Eng. Sci.* **50** pp.4005-4025 (1995)

49. Pattern Formation in Composite Excitable Media, *Phys. Rev. E* **52**(6) pp.5739-5742 (1995) with M. Baer, H.-H. Rotermund and G. Ertl

50. One- and Two-Dimensional Traveling Wave Solutions in Gas-Fluidized Beds, *J. Fluid Mech.*, **306** pp.493-520 (1996) with B. Glasser and S. Sundaresan.

51. Alternative approaches to the Karhunen-Loéve decomposition for model reduction and data analysis, *Comp. Chem. Engineering*, **20** pp.495-506 (1996) with M. D. Graham.

52. Catalysis on Microcomposite Surfaces, Chem.Eng.Sci. **51**(10) pp. 1757-1765 (1996), with A. K. Bangia, M. Baer, M. D. Graham, H.-H. Rotermund and G. Ertl

53. Rotating Chemical Waves in Small Circular Domains, *Phys. Rev. Letters* **76** pp.1384-1387 (1996) with N. Hartmann, M. Baer, K. Krischer and R. Imbihl.

54. Composite Catalyst Surfaces: Effect of Inert and Active Heterogeneities in Pattern Formation, *J. Phys. Chem.*, **100** pp.19106-19117 (1996) with M. Baer, A. K. Bangia, G. Haas, H.-H. Rotermund and G. Ertl

55. Fully Developed Traveling Wave Solutions and Bubble Formation in Fluidized Beds, *J. Fluid Mech.* **334** pp.157-188 (1997) with B. J. Glasser and S. Sundaresan.

56. Unsteady Flows in 2-D Complex Geometries: bifurcation studies with global eigenfunction expansions, *SIAM J. Sci. Comp.* **18**(3) pp.775-805 (1997) with A. K. Bangia, P. Batcho and G. Karniadakis

57. Pulse Bifurcation and Transition to Spatiotemporal Chaos in an Excitable Reaction-Diffusion Model, *Physica D* **110** pp.92-104 (1997) with M. G. Zimmerman, S. Firle, M. Natiello, M. Hildebrand, M. Eiswirth, M. Baer and A. K. Bangia

58. Two-dimensional invariant manifolds and global bifurcations: some approximation and visualization studies, *Numerical Algorithms* **14** pp.125-140 (1997), with M. E. Johnson and M. S. Jolly

59. Delaying Transition in Taylor-Couette Flow with axial motion of the inner cylinder, *J. Fluid Mech.* **348** pp.141-151 (1997) with A. Weisberg and A. Smits

60. Catalysis on Microstructured Surfaces,*Faraday Disc.* **105** pp.47-56 (1996) with E. Schuetz, N. Hartmann and R. Imbihl.

61. On some properties of invariant sets of two-dimensional non-invertible maps, *Int. J. Bifurcations and Chaos* **7**(6) pp.1167-1194 (1997), with C. E. Frouzakis, L. Gardini, G. Millerioux and C. Mira.

62. Noninvertibility and Resonance in Discrete-Time Neural Networks for Time Series Processing, *Physics Letters A*, **238** pp.8-18 (1998) with N. Gicquel and J. S. Anderson

63. Low-dimensional approximation and control of periodic solutions in spatially extended systems, *Phys. Rev. E* **58** no. 1, pp.361-368 (1998) with S. Shvartsman

64. Nonlinear Model Reduction for Control of Distributed Parameter Systems, *AIChE Journal*,**44**(7) pp.1579-1595 (1998) with S. Shvartsman.

65. From Bubbles to Clusters in Fluidized Beds, *Phys. Rev. Letters*, **81** pp.1849-1852 (1998) with B. Glasser and S. Sundaresan.

66. The impact of the operation mode on pattern formation in electrode reactions: from potentiostatic to galvanostatic oscillations. *J. Electrochem. Soc.* **145**(7) pp.2404-2411 with N. Mazouz, G. Flaetgen and K. Krischer.

67. Chemically resolved real-time imaging of catalytic reactions on composite surfaces, *Catalysis Letters* **52** pp.85-90 (1998) with F. Esch, S. Guenther, A. Schaak, M. Marsi, M. Kiskinova and R. Imbihl.

68. Microchemical engineering of catalytic reactions *Catalysis Letters* **54** pp.181-186 (1998), with E. Schuetz, N. Hartmann and R. Imbihl

69. Catalysis on mesoscopic composite surfaces: Influence of Pd boundaries on pattern formation during CO-Oxidation on Pt(110), *Physica D* **123** pp.493-501 (1998) with J. Lauterbach, K. Asakura, P. Rasmussen, H. Rotermund, M. Baer, M. D. Graham and G. Ertl

70. An adaptive method for the experimental detection of instabilities, with J. S. Anderson, S. Shvartsman, G.Flaetgen, R. Rico-Martinez and K. Krischer, *Phys. Rev. Letters* **82**(3) 532-535 (1999)

71. Anomalous Dispersion and Pulse Interaction in an Excitable Surface Reaction, with J. Christoph, M. Eiswirth, N. Hartmann, R. Imbihl and M. Baer, *Phys. Rev. Letters* **82**(7) 1586-1589 (1999)

72. Ink-Jet Printing of Catalyst Patterns for Electroless Metal Deposition, with P. Shah and J. Benziger, *Langmuir* **15** pp.1584-1587 (1999)

73. Bubble flow simulations with the lattice Boltzmann method, with K. Sankaranarayanan, X. Shan and S. Sundaresan, *Chem. Eng. Sci.* **54** pp.4817-4823 (1999)

74. Controlling Dispersive Chaos in Binary Fluid Convection, with P. Kolodner and G. Flaetgen, *Phys. Rev. Letters* **83**(4) pp.730-733 (1999)

75. Dynamics on microcomposite catalytic surfaces: the effect of active boundaries, with S. Shvartsman, E. Schuetz and R.Imbihl, *Phys. Rev. Letters* **83**(14) pp.2857-2860 (1999)

76. Chemical waves and adsorbate-induced segregation effects on a Pt(100) surface microstructured with a thin Rh/Pt film, *Surf. Sci* **443** pp.245-252, F. Esch, S. Gnther, E. Schtz, A. Schaak, I. G. Kevrekidis, M. Marsi, M. Kiskinova, and R. Imbihl (1999)

77. Pulse dynamics and interaction on anisotropic surfaces: a computer-assisted study, with J. Krishnan, M. Baer and R. Imbihl, *Chem. Eng. Science* **55**(2) 257-266 Special Issuse SI Jan. 2000

78. Stable bound states of pulses in an excitable medium, with Michal Or-Guil and M. Baer, *Physica D*, **135** pp. 154-174 (2000).

79. Order Reduction for Nonlinear Dynamic Models of Distributed Reacting Systems, with S. Shvartsman, C. Theodoropoulos, R. Rico-Martinez, E. S. Titi and T. J. Mountziaris, *J. Process Control* **10**(2-3), pp.177-184 (2000)

80. Pattern Formation in Restricted Geometries: the NO + CO reaction on Pt(100), with N. Hartmann and R. Imbihl, *J. Chem. Phys.* **112**, pp.6795-6803 (2000)

81. Dynamic Deformation Visualization in Swelling of Polymer Gels with E. Achilleos, R. K. Prudhomme, K. N. Christodoulou and K. R. Gee, *Chem. Eng. Sci.* **55** pp.3335-3340 (2000)

82. "Coarse" stability and bifurcation analysis using timesteppers: a reaction diffusion example, K. Theodoropoulos Y.-H. Qian and I.G.K., *Proc. Natl. Acad. Sci.* **97**(18), pp.9840-9843 (2000).

83. A transport model for swelling of polyelectrolyte gels in constrained geometries, with E. Achilleos and K. N. Christodoulou, *Computational and Theoretical Polymer Science* **11**, 63-80 (2001)

84. Noninvertibility in Neural Networks, *Comp. Chem. Eng.*, **24** pp.2417-2433 (2000) with R. Rico-Martinez and R. Adomaitis

85. Quantifying deformation in gel swelling: experiments and simulations with E. Achilleos, R. K. Prud'homme, K. N. Christodoulou and Kyle R. Gee, *AIChE Journal* **46**(11) pp.2128-2139 (2000)

86. Propagation Failure, Universal Scalings and Goldstone Modes, P. G. Kevrekidis, I.G.K. and A. R. Bishop, *Phys. Letters A*, **279** pp.361-369 (2001)

87. The Oseberg Transition: visualization of global bifurcations for the Kuramoto-Sivashinsky Equation, with M. E. Johnson and M. S. Jolly, *Int. J. Bifurcations and Chaos*, **11**(1) pp.1-18 (2001).

88. Characterization of a two-parameter mixed-mode behavior regime using neural networks, with R. Gonzalez-Garcia, R. Rico-Martinez, W. Wolf, M. Luebke, M. Eiswirth and J. S. Anderson (IGK) *Physica D* **151** pp.27-43 (2001)

89. A computer-assisted study of pulse dynamics in anisotropic media, J. Krishnan, K. Engelborghs, M. Baer, K. Lust, D. Roose and I.G.K. *Physica D*, **154**(1-2), pp.27-43 (2001)

90. Formation of 2-d concentration pulses on microdesigned composite catalysts, M. Pollmann, H.H. Rotermund, G. Ertl, X. Li and I.G.K. *Phys. Rev. Lett.* **86**(26) pp.6038-6041 (2001)

91. Numerical Criterion for the Stabilization of Steady States of the Navier-Stokes Equations, C. Cao, I.G.K and E. S. Titi, *Ind. U. Math. J.* **50**(1) pp.37-96 (2001)

92. Spatio-temporally addressing surface activity. J. Wolff, Th. Papathanasiou, I. G. K., H.-H. Rotermund and G. Ertl, *Science*, **294** pp.134-137 (2001)

93. Heterogeneous vs. Discrete Mapping Problem, P. G. Kevrekidis and IGK. *Phys. Rev. E*, **64**(5) 056624(1-8) (2001)

94. Critical Effects in NO Reduction on microcomposite Pt/Rh catalysts: Experiments and computer-assisted analysis, with S. Shvartsman, E. Schuetz and R. Imbihl, *Catalysis Today* **70**(4), pp.301-310 (2001)

95. Pulse bifurcations and instabilities in an excitable medium: computations in finite ring domains, M. Or-Guil, J. Krishnan, I.G.K and M. Baer, *Phys. Rev. E* **64** 046212(9) (2001)

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449. "On 3+1 dimensional Friedman-Robertson-Walker Universes with Matter", T. Christodoulakis, C. Helias, P. G. Kevrekidis, I.G.K. and G. O. Papadopoulos, in *Nonlinear Waves: Classical and Quantum Aspects* pp.135-143, F. Kh. Abdullaev and V. V. Konotop eds., Kluwer Academic Publishers, the Netherlands (2004)

450. Diffusion maps, spectral clustering and eigenfunctions of Fokker-Planck Operators, B. Nadler, S. Lafon, R. R. Coifman and I. G. Kevrekidis, Proceedings of the 2005 Neural Information and Processing Systems conference, Tuebingen, Germany, 2005.

451. Acceleration methods for coarse-grained numerical solution of the Boltzmann Equation H. Al-Mohssen, N. Hadjiconstantinou and IGK, Proceedings 2005 ASME International Mechanical Engineering Congress and Exposition, Orlando, Fl., November 2005.

452. "Exploring closure approximations in the lattice Boltzmann method", S. Ansumali, S. S. Chikatamarla, C. E. Frouzakis, I. V. Karlin and I. G. Kevrekidis, Proceedings of Leicester meeting on Invariant Manifolds, Leicester, August 2005 (cond-mat/0502018 at arxiv.org). pp.403-420, Springer, 2006

453. "Finite-difference patch dynamics for advection homogenization problems", G. Samaey, D. Roose and I. G. Kevrekidis, Proceedings of Leicester meeting on Invariant Manifolds, Leicester, August 2005, pp. 225-246, Springer 2006

454. Coarse-graining the Cyclic Lotka-Volterra Model: SSA and Local Maximim Likelihood Estimation, C. P. Calderon, G. A. Tsekouras, A. Provata and I. G. Kevrekidis, Proceedings of Leicester meeting on Invariant Manifolds, Leicester, August 2005, pp. 225-246, Springer 2006, pp.247-268

455. Template-based stabilization of relative equilibria, S. Ahuja, I. G. Kevrekidis and C. W. Rowley, Proceedings of the 2006 ACC, March 2006.

456. Low-dimensional models for control of leading edge vortices: equilibria and linearized models. S. Ahuja, C. W. Rowley, I. G. Kevrekidis, M. Wei, T. Colonius and G. Tadmor, 45th Aerospace Science Meeting and Exhibit, Jan. 8-11 2007, Reno, NV

457. Patch Dynamics: macroscopic simulation of mulsticale systems. G. Samaey, I. G. Kevrekidis and D. Roose, Proceedings of ICIAM 2007 (Zuerich, July 2007)

458. Drops, slugs and flooding in PEM fuel cells, E. Kimball, T. Whitaker, Y. Kevrekidis and J. B. Benziger, *ECS Trans.* **11**(1) 725-737 (2007)

459. Liquid Water Transport in PEM Fuel Cells, J. B. Benziger, T. Whitaker, E. Kimball and I. G. Kevrekidis, *ECS Trans.***12**(1) 67 (2008)

460. Virtual Slow Manifolds: the Fast Stochastic Case, C. W. Gear, D. Givon and I. G. Kevrekidis, Proceedings of the International Conference on Numerical Analysis and Applied Mathematics, Rethymno, Crete, Greece, September 2009, Vol. 1, pp.17-20 (2009)

461. M. O. Williams, F. Li, P. G. Kevrekidis, C. Daraio and I. G. Kevrekidis, Equation-free computations as DDDAS protocols in the study of engineered granular crystals, ICCS 2013, *Proc. Comp. Sci.* **18** pp.2638-2642 (2013)

462. Gear, C. W.; Chiavazzo, E.; Kevrekidis, I. G., Manifolds Defined by Points: Parameterizing and Boundary Detection (Extended Abstract), , in Simos, T; Tsitouras, C, eds., *PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON NUMERICAL ANALYSIS AND APPLIED MATHEMATICS 2015 (ICNAAM-2015)*, AIP Conference Proceedings Vol.**1738** Article Number: 020005 (2016)

463. Lehmberg, D., Felix Dietrich, Ioannis G. Kevrekidis, Hans-Joachim Bungartz, Gerta Koester, "Exploring Koopman Operator Based Surrogate Models Accelerating Analysis of Critical Pedestrian Densities," *Traffic and Granular Flow (TGF)* in Pamplona, Spain, Conference talk (Daniel Lehmberg) and paper (2019).

464. Dietrich, F., I. G. Kevrekidis, R. Talmon, O. Yair, R. Mulayoff. "Constructing effective parameters of dynamical systems using jointly smooth functions," *Dynamics Days* (2020).

465. C Martin Linares, T Bertalan, E Koronaki, J Lu, G Tryggvason, I Kevrekidis. "Development of closures for coarse-scale modeling of multiphase and free surface flows using machine learning." *Bulletin of the American Physical Society* **66** (2021)

466. C Moosmller, C Tralie, M Kooshkbaghi, Z Belkhatir, M Pouryahya, J Reyes, J Deasy, A Tannenbaum, I Kevrekidis. Periodicity Scoring of Time Series Encodes Dynamical Behavior of the Tumor Suppressor p53. *IFAC-PapersOnLine* **54**(9) 488-495 (2021)

467. H Arbabi, FP Kemeth, T Bertalan, I Kevrekidis. Coarse-grained and emergent distributed parameter systems from data *American Control Conference*, 4063-4068 (2021)

Invited Papers and Invited Chapters in Books

468. Dynamic Modeling of the Immune Response I. T Cell Activation and the effect of IL-2 in Theoretical Immunology, Part One, SFI Studies in the Sciences of Complexity A. S. Perelson ed., Addison-Wesley (1988) p.167-197 with A. D. Zecha and A. S. Perelson.

469. On the Dynamics of Nonisothermal CSTRs, invited chapter 25 in Handbook of Heat and Mass Transfer, Vol. 3, N. P. Cheremissinoff, ed., Gulf Publishing Company, with J. L. Hudson (1989)

470. Global Bifurcations in Maps of the Plane and in Rayleigh-Bénard Convection in Contemporary Mathematics, (1989), B. Nicolaenko, C. Foias and R. Témam eds., pp.313-337

471. Use of Approximate Inertial Manifolds in Bifurcation Calculations, in Continuation and Bifurcations: Numerical Techniques and Applications, D. Roose et. al. eds., Kluwer Academic Publishers, (1990), pp.9-23 (with H. S.Brown, M. S. Jolly and E. S. Titi).

472. A Minimal Model for Spatio-Temporal Patterns in Thin Film Flow in IMA Volumes in Mathematics and its Applications, 37, Patterns and Dynamics in Reactive Media, H. Swinney, R. Aris and D. Aronson eds., Springer, 1991

473. Nonlinear System Identification Using Neural Networks: Dynamics and Instabilities, in Neural Networks in Chemistry and Chemical Engineering, A. Bulsari ed., Elsevier (1995), w. R. Rico-Martinez and K. Krischer.

474. Towards integrated frameworks of reasoning and computation in chemical engineering in *AIChE Symp. Series* 312 **92**, Proceedings of the joint CACHE/CAST/AAAI Conference *Intelligent Systems in Process Engineering*, pp.119-130, with M. J. Realff (1996)

475. Invariant Circles of Plane Endomorphisms: A Computer-assisted Study of Arnol'd Horns, in Proceedings of IMACS-IEEE-CESA'96, Lille, July 1996, with N. Gicquel and C. E. Frouzakis

476. On Spatiotemporal Patterns in Composite Reactive Media, in "Mathematics of Multiscale Materials", K. Golden, G. Grimmett, R. James, G. Milton and P. Sen eds. IMA Volumes on Mathematics and its Applications **99** pp. 237-260 (1997) Springer Verlag, with S. Shvartsman, A. K. Bangia and M. Baer

477. "Pattern Speed Reduction in Heterogeneous 1-D Reaction-Diffusion Systems", in the Series "Order in Chaos", G. A. Pnevmatikos, ed. (Proceedings of the 13th Summer School - Hellenic Conference on Nonlinear Dynamics: Complexity and Chaos"), with P. G. Kevrekidis.

478. "Equation-Free Modeling for Complex Systems", I. G. Kevrekidis, C. W. Gear and G. Hummer, in *Handbook of Materials Modeling*, Vol.1 S. Yip, editor, Kluwer (2004).

479. "Equation-Free Modeling for Complex Systems", I. G. Kevrekidis (with C. W. Gear and G. Hummer)in *Reports from the 2004 NAE Symposium on Frontiers in Engineering*, pp.69-77, The National Academies Press, Washington D.C.

480. "Equation-free computation: an overview of patch dynamics", G. Samaey, A. J. Roberts and I. G. Kevrekidis, in *Bridging th escales in science and engineering*, J. Fisch ed., Oxford U. Press (2009)

481. "Equation-free computation: an overview of patch dynamics", G. Samaey, A. J. Roberts and I. G. Kevrekidis, *Ann. Rev. Phys. Chem.* **60** pp.321-344 (2009)

482. "Equation-Free Computation", G. Samaey and I. G. Kevrekidis, invited entry in *Scholarpedia*,(2009)

483. "Coarse Molecular-Dynamics Analysis of Structural Transitions in Solid Materials," D. Maroudas, M. A. Amat, and I. G. Kevrekidis, in Multiscale Modeling: From Atoms to Devices, edited by P. Derosa and T. Cagin, Chapter 4, pp. 69-90 (Taylor & Francis, London, 2010).

484. "Think locally, move globally: Coarse graining of effective free energy surfaces", P. Das, T. A. Frewen, I. G. Kevrekidis and C. Clementi, in *Coping with Complexity: Model Reduction and Data Analysis*, A. N. Gorban and D. Roose, eds., Springer Lecture Notes in Computational Science and Engineering, vol. **75**, pp. 287-298 (2010)

485. "Coarse Collective Dynamics of Animal Groups", T. A. Frewen, I. D. Couzin, A. Kolpas, J. Moehlis, R. Coifman, and I. G. Kevrekidis, in *Coping with Complexity: Model Reduction and Data Analysis*, A. N. Gorban and D. Roose, eds., Springer Lecture Notes in Computational Science and Engineering, vol. **75**, pp. 299-310 (2010)

Books Edited

486. Modeling and Computations in Dynamical Systems, In Commemoration of the 100th anniversary of the birth of John von Neumann, E. J. Doedel, G. Domokos and I. G. Kevrekidis eds., World Scientific Series on Nonlinear Science, Series B, Vol. 13, L. O. Chua series editor, World Scientific 2006

487. Model Reduction and Coarse-Graining Approaches for Multiscale Phenomena, A.N. Gorban, N. Kazantzis, I.G. Kevrekidis, H.C. Ottinger, C.Theodoropoulos, eds. Springer Series in Complexity, Springer, Berlin–Heidelberg–New York, 2006 (in press)

Other Publications

488. On the Stability of Input-Output Operators in Nonlinear Systems with Multiple Attractors, Proceedings of the 1989 American Control Conference, paper TA4, pp. 1102-1104, (Pittsburgh, 1989) (with C. Frouzakis and V. Manousiouthakis).

489. Predicting the Complexity of Disconnected Basins of Attraction for a Noninvertible System, Systems Research Center, Tech. Report # TR91-41, University of Maryland, (with R. A. Adomaitis and R. de la Llave).

490. On the Dynamics and Global Stability Characteristics of Adaptive Control Systems, Systems Research Center, Tech. Report # TR91-100, University of Maryland, (with R. A. Adomaitis and C. E. Frouzakis).

491. Global Stability Analysis of an Adaptively Controlled Mixing Tank Experiment Proceedings of the 1992 American Control Conference/WP4 pp.1039-1043 Chicago, 1992, (with R. A. Adomaitis and C. E. Frouzakis)

492. Identification of Continuous-Time Dynamical Systems: Neural Network Based Algorithms and Parallel Implementation, in Proceedings of the 6th SIAM Conference on Parallel Processing for Scientific Computing, R. Sincovec et al., eds., pp.287-291, SIAM Publications, Philadelphia (1993).

493. Discrete- vs. Continuous-Time Nonlinear Signal Processing: Attractors, Transitions and Parallel Implementation Issues, in Proceedings of the 1993 American Control Conference, San Francisco, 1993 (with R. Rico-Martinez, M. C. Kube and J. L. Hudson).

494. Noninvertible Dynamics in Neural Network Models, Proceedings of the 28th annual conference on Information Sciences and Systems, March 1994, Princeton, H. Kobayashi, ed., with R. A. Adomaitis and R. Rico-Martinez

495. Immune Network Behavior: Oscillations, Chaos and Stationary States, in Proceedings of the IFAC Symposium on Modeling and Control in Biomedical Systems, Galveston, TX, March 1994, B. W. Patterson ed., Omnipress, Madison, pp.161-163, with R. deBoer and A. S. Perelson.

496. Traveling Waves in Multiphase Flows, in Proceedings of the Advances in Fluid Mechanics Conference, New Orleans, June 1996, to be published by Computational Mechanics Publications, Brebbia, ed.,with M. Goez, B. J. Glasser and S. Sundaresan.

497. Self-Consistency Tuning in Neural Network Based NLPC Analysis, in Proceedings of CISS'96, Princeton, NJ, March 1996 (with J. S. Anderson and presented by R. Rico-Martinez), IEEE, in press.

498. Use of adaptation and feedback in the experimental determination of bifurcations, in Proceedings of CISS'96, Princeton, NJ, March 1996, (with J. S. Anderson, R. Rico-Martinez and K. Krischer), IEEE, in press.

499. Structure Development during Diffusion in Polymers with Simultaneous Hardening, in Proceedings of the 2nd National Congress in Computational Mechanics, Chania, Greece, June 1996, with R. W. Powell and K. N. Christodoulou.

500. Structure Development during Diffusion in Polymers with simultaneous hardening and ionization, Extended Abstract, XII-th International Congress of Rheology, Quebec City, CA., August 1996. (with R. W. Powell and K. N. Christodoulou).

501. Controlling Pattern Formation in catalytic reactions: the $NO + H_2$ reaction on microstructured surfaces, Proceedings of the 157th W. E. Heraeus Seminar, Germany (with E. Schuetz, C. Rezny, N. Hartmann, A. Schaak and R. Imbihl).

502. Low-dimensional model for active control of flow separation. Proceedings of the 1999 IEEE International Conference of Control Applications (CCA, Hawaii, August 22-27 1999) Paper TuP3-3, pp.1151-1156 (with Narayanan, S., Khibnik, A.I. Jacobson, C.A., Rico-Martinez, R. and Lust, K.).

503. Adaptive Detection of Instabilities and Nonlinear Analysis of a Reduced-Order Model for Flutter and Rotating Stall in Turbomachinery Proceedings of the 1999 IEEE International Conference of Control Applications (CCA, Hawaii, August 22-27 1999) Paper TuP3-1, pp.1146-1150 (with S. Copeland and R. Rico-Martinez).

504. Projective Methods for Stiff Differential Equations: problems with gaps in their eigenvalue spectrum. C. W. Gear and IGK. NEC Institute Technical Report, NECI-TR 2001-029, March 2001

Conference Presentations and Invited Talks

1. Thermodynamic Limitations on the Dynamics of HeterogeneousReacting Systems (I.S.C.R.E. 8) Edinburgh, Scotland, September 1983
2. Dynamics of Periodically Forced Chemical Reactors, Dynamics Days La Jolla, CA, January 1984
3. The Effect of Surface Phase Transitions on Catalytic Reactor Dynamics, AIChE annual meeting, San Francisco, CA, November 1984
4. On the Dynamics of Periodically Forced Chemical Reactors, AIChE annual meeting, San Francisco, CA, November 1984
5. Phenomena and Algorithms in Periodically Forced Reacting Systems, AIChE annual meeting, Chicago, IL, November 1985
6. On the Coupling of Chemical Oscillators, Poster Presentation Spatiotemporal Coherence and Chaos in Physical Systems Los Alamos, NM January 1986
7. Resonance in Periodically Forced Processes 9th International Symposium on Chemical Reaction Engineering, (ISCRE 9) Philadelphia, PA. May 1986
8. Invited Talk Numerical Computation of Manifold Intreractions Lasers, Molecules and Methods, Los Alamos, NM, July 1986
9. Invited Talk Invariant and Inertial Manifold Computations, Informal Workshop on Chaos, Fractals and Dimension, Los Alamos, NM, July 1986
10. Breaking of Resonances Through Global Manifold Interactions, Poster Presentation, International Conference on Coherence and Chaos in Classical and Quantum Systems,Thessaloniki,Greece, August 1986
11. Invited Talk Low Reynolds Number Bifurcations of the Kuramoto Shivashinsky Equation, Workshop on Computational Aspects of Dynamical Systems, Mathematical Sciences Institute, Cornell University, September 1986
12. A Numerical Study of Global Bifurcations in Chemical Dynamics, AIChE annual meeting, Miami, FL. November 1986
13. Invited Talk Some Computational Aspects of Complex Dynamics, ACS Symposium on Supercomputer Research in Chemistry and Chemical Engineering, Minneapolis, MN, March 1987
14. Global Bifurcations in Rayleigh-Bénard Convection, American Physical Society Meeting, New York, March 1987 (presented by R. E. Ecke)
15. Invited Talk Modelling of T-cell Activation, Working Conference on Theoretical Immunology, Santa Fe, NM, June 1987
16. Invited Talk, AMS Summer Conference on the Connection Between Infinite- Dimensional Dynamical Systems and Finite-Dimensional Ones, Boulder, CO, July 1987
17. Interactions of Resonances in Rayleigh-Bénard Convection, AIChE annual meeting, New York, November 1987
18. On the Dynamics of Immune Network Models, AIChE annual meeting, New York, November 1987
19. On the Analysis and Control of Basins of Attraction in Multistable Lumped Systems, AIChE annual meeting, New York, November 1987
20. Low-Dimensional Instabilities in Thin Film Flow, AIChE annual meeting, New York, November 1987
21. The Use of Interactive Graphics in the Numerical Study of Chemical Dynamics, AIChE annual meeting, New York, November 1987
22. Invited Talk, Scaling Laws and Bifurcations in Pattern-Forming Systems, Conference on Reaction-Diffusion Equations, Edinburgh, UK, June 1988
23. Computation of Inertial Manifolds, Poster Presentation, Gordon Conference on Oscillations and Dynamic Instabilities in Chemical Systems, Plymouth NH, July 1988

24. Back in the Saddle Again, Poster Presentation, Gordon Conference on Oscillations and Dynamic Instabilities in Chemical Systems, Plymouth NH, July 1988
25. On the Numerical Computation of Inertial Manifolds, AIChE annual meeting, Washington, D.C., November 1988
26. Resonance Horns and Global Bifurcations in some Adaptive Control Systems, International Conference on Dynamical Systems, Control Theory and Applications, Wright State University, June 1989
27. On the Stability of Input-Output Operators in Nonlinear Systems with Multiple Attractors, American Control Conference, Pittsburgh, June 1989 (w. C. Frouzakis and V. Manoussiouthakis).
28. Invited Talk Numerical Approximation of Inertial Manifolds, NATO Workshop on Continuation and Bifurcations - Numerical Techniques and Applications, Leuven, Belgium, September 1989
29. Invited Talk Workshop on Patterns and Dynamics in Reactive Media, Institute of Mathematics, University of Minnesota, October 1989
30. Common Features of Coupled Oscillatory Reacting Systems, AIChE annual meeting, San Francisco, November 1989
31. Low-Dimensional Chaos in Models of Interfacial Instabilities, AIChE annual meeting, San Francisco, November 1989
32. A Model of IL-2 Binding and Receptor-Mediated Internalization, AIChE annual meeting, San Francisco, November 1989
33. Complex Pattern Formation in Coupled Reaction-Diffusion Systems, AIChE annual meeting, San Francisco, November 1989
34. Characterization of Time Signals from Electrochemical Reactions and Thermal Convection, AIChE annual meeting, San Francisco, November 1989
35. Some Global Bifurcations in Adaptive Control Systems, AIChE annual meeting, San Francisco, November 1989
36. Pulsing Flow in Trickle Beds, AIChE annual meeting, San Francisco, November 1989 (w. D. Dankworth and S. Sundaresan)
37. Invited Talk, Workshop on Classical and Quantum Transport in Hamiltonian Systems, Mathematical Sciences Institute, Cornell University, November 1989
38. Invited Talk, Common Dynamic Features of Coupled Chemical Reactors, SIAM Minisymposium on Computational Methods for Dynamical Systems, Orlando, Florida, May 1990 (w. M. A. Taylor)
39. Invited Talk, Preserving Dissipation in Approximate Inertial Forms, SIAM Minisymposium on Computational Methods for Dynamical Systems, Orlando, Florida, May 1990, with M. S. Jolly (speaker) and E. S. Titi.
40. Dynamics of Flows in Complex Geometries, Session on Applied Fluid Modeling, SIAM Minisymposium on Computational Methods for Dynamical Systems, Orlando, Florida, May 1990, with A. Deane (speaker) and G. Karniadakis
41. Invited Talk, 10th Annual International Conference, CNLS, Los Alamos, May 1990
42. Invited Talk, Workshop on Dynamical Systems and Fluid Mechanics, Institute of Mathematics and its Applications, University of Minnesota, May 1990
43. A Simple Idiotypic Network Model with Complex Dynamics, ISCRE 11, Toronto, July 1990 (with R. De Boer and A. Perelson)
44. Nonlinear Signal Processing and System Identification: Applications to Time Series from Electrochemical Reactions, ISCRE 11, Toronto, July 1990 (with J. Hudson, M. Kube, R. Adomaitis, A. Lapedes and R. Farber).
45. Time-Dependent Hydrodynamics in Multiphase Reactors, ISCRE 11, Toronto, July 1990, (with D. Dankworth -speaker- and S. Sundaresan)

46. Chaotic Mixing in a Complex Annular Geometry, Poster Presentation, Symposium on Fluid Mechanics of Stirring and Mixing, La Jolla, August 1990 (with D. Barkley, A. Smits and G. Karniadakis).
47. On the Global Bifurcation Characteristics of Adaptive Systems,1990 IFAC World Congress, Talinn, Estonia, August 1990 (with R. A. Adomaitis).
48. On the Dynamics of Coupled Heterogeneous Catalytic Oscillators, AIChE annual meeting, Chicago, 1990 (with M. A. Taylor)
49. Infinite-Period Waves in Trickle Beds: A Multiparameter Global Bifurcation Analysis, AIChE annual meeting, Chicago, 1990 (with D. Dankworth and S. Sundaresan)
50. Application of Neural Networks to the Analysis of Low-Dimensional Dynamics of Electrochemical Systems, AIChE annual meeting, Chicago, 1990 (with R. A. Adomaitis, M. Kube and J. L. Hudson)
51. Quantifying the Global Stability Characteristics of Adaptive Control Systems, AIChE annual meeting, Chicago, 1990 (with R. A. Adomaitis and C. E. Frouzakis)
52. A Numerical Study of Homoclinic Orbits to a Saddle-Focus, and Dynamics associated with their Existence, AIChE annual meeting, Chicago, 1990 (with H. S. Brown)
53. Macroscopic Models in Gas-Liquid Flow in Packed Beds: Stability of Fully Developed Travelling Waves, AIChE annual meeting, Chicago, 1990 (with D. Dankworth and S. Sundaresan)
54. Chaotic Mixing in a Complex Annular Geometry, APS meeting, Ithaca, November 1990 (with D. Barkley, G. Em. Karniadakis and A. Smits)
55. Low-Dimensional Models for Complex Geometry Flows, APS meeting, Ithaca, November 1990 (with A. E. Deane and G. Em. Karniadakis)
56. Invited Talk, Workshop on Dynamics of Structures and Intermittencies in Turbulence, Arizona State University, May 1991
57. Plenary Lecture, 12th Annual Meeting of the Canadian Applied Mathematics Society, Ottawa, May 1991.
58. Invited Talk, 3d annual Soviet-American Conference on Chaos, Woods Hole, MA, July 1991
59. On the Dynamics of Adaptively Controlled Systems, NATO Advanced Summer Institute, Patras, Greece, July 1991 (w. C. Frouzakis and R. A. Adomaitis)
60. Invited Talk, On the Dynamics of Coupled Chemical Reactors, Joint AMS/SIAM Workshop on Coupled Oscillators, Seattle, WA, July 1991 (with M. A. Taylor)
61. Flow past a circular cylinder; empirical eigenfunctions, dynamics and symmetry, 44th APS Fluid Mechanics Meeting, (1991) (with A. Deane and G. Karniadakis)
62. Low-dimensional models for complex geometry flows, AIChE annual meeting, Los Angeles (1991) (with A. Deane and G. Karniadakis)
63. Instabilities and Chaotic advection in a Complex Annular Geometry, AIChE annual meeting, Los Angeles (1991) (with D. Barkley and G. Karniadakis)
64. Noninvertibility and its role in the dynamics of adaptively controlled systems, AIChE annual meeting, Los Angeles (1991), (with R. Adomaitis and C. Frouzakis)
65. Invited Talk, Conference on Homoclinic Chaos, University of Brussels, May 1991 (presented by D. Barkley)
66. The adaptively controlled mixing tank: an experimental and computational study of global bifurcations, Poster presentation, AIChE annual meeting, Los Angeles (1991), (With R. Adomaitis and C. Frouzakis).
67. Invited Talk, Model Reduction for Bifurcation Calculations, 8th U.C. Conference of Nonlinear Science, U.C. Irvine, February 1992
68. Global Stability Analysis of an Adaptively Controlled Mixing Tank Experiment, 1992 ACC, Chicago (w. R. A. Adomaitis and C. E., Frouzakis).

69. Invited Talk, Conference on Spatio-temporal organization in Nonequilibrium Systems, Max-Planck-Institute, Dortmund, June 1992, presented by D. Barkley
70. Invited Talk, Modeling of the Interaction of IL-2 with IL-2 Receptors, Mathematical Sciences Research Institute, Workshop on Mathematical Immunology, Berkeley, July 1992.
71. Plenary Lecture Some nonlinear dynamic features of adaptive control systems, 1st World Congress of Nonlinear Analysts, Tampa, Fla. August 1992 (w/ C. E. Frouzakis and R. Adomaitis)
72. Low-dimensional behavior in some complex geometry flows, 1st World Congress of Nonlinear Analysts, Tampa, Fla. August 1992 (with G. M. Karniadakis)
73. A simple idiotypic network model with complex dynamics, 1st World Congress of Nonlinear Analysts, Tampa, Fla. August 1992 (with R. deBoer and A. S. Perelson)
74. A computer-assisted study of modulated traveling wave, 29th Annual Meeting of the Society for Engineering Science, San Diego, CA, September 1992 (with -and presented by- H. S. Brown)
75. Invited Address Noninvertibility and the Dynamics of Adaptive Control Systems, SIAM Conference on Control, Minneapolis, September 1992
76. Numerical Study of Dynamics and Symmetry Breaking in Rotating Spiral Waves, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, October 1992 (with -and presented by- D. Barkley)
77. Discrete- vs. Continuous-time nonlinear signal processing of Cu electrodissolution data, 1992 AIChE annual meeting, Miami Beach, FL, November 1992 (with R. Rico-Martinez, K. Krischer, M. Kube and J. L. Hudson, presented by R. Rico-Martinez).
78. Heterogeneous Reactions with Spatiotemporal Variations: Model Identification using Nonlinear Signal Processing, Miami Beach, FL, November 1992 (with R. Rico-Martinez, K. Krischer, J. Tabora and J. L. Hudson, presented by K. Krischer)
79. APS Meeting, Division of Fluid Dynamics, Florida State University, November 1992 (with -and presented by- D. Barkley)
80. Identification of Continuous-Time Dynamical Systems: Neural Network Based Algorithms and Parallel Implementation, 6th SIAM Conference on Parallel Processing for Scientific Computing, Norfolk, VA, March 1993 (with R. M. Farber, A. S. Lapedes and R. Rico-Martinez, presented by R. M. Farber).
81. Invited Talk, Workshop on Computational Methods for Nonlinear Phenomena, Mathematisches Forschungsinstitut Oberwolfach, Oberwofach, Germany, January 1993
82. Invited Talk, CHAMPP Workshop on Alternatives to General Circulation Models, organized by LLNL/DOE, Berkeley, CA, February 1993
83. Invited Talk, Workshop on Applications of Pattern Formation, The Fields Institute of Research in the Mathematical Sciences, Waterloo, Ontario, Canada, March 1993, with H. S. Brown and K. Krischer
84. Workshop on Applications of Pattern Formation, The Fields Institute of Research in the Mathematical Sciences, Waterloo, Ontario, Canada, March 1993 (with -and presented by- D. Barkley)
85. Noninvertibility in Neural Networks, 1993 IEEE International Conference on Neural Networks, San Francisco (with R. Rico-Martinez and R. Adomaitis, presented by R. A. Adomaitis).
86. Continuous-Time Modeling of Nonlinear Systems: A Neural-Network Based Approach, 1993 IEEE International Conference on Neural Networks, (with -and presented by- R. Rico-Martinez)
87. A low-dimensional model for a surface reaction with spatiotemporal variations, 13th General Europhysics Conference, Regensburg, March 1993 (with K. Krischer, R. Rico-Martinez, H. H. Rotermund and G. Ertl, presented by K. Krischer).
88. 6th SIAM Conference on Parallel Computing, with R. Farber, A. Lapedes and R. Rico-Martinez, presented by R. Farber
89. Invited Talk, Workshop on Low-Dimensional Approximations of Nonlinear Dynamical Systems, Army High Performance Computing Research Center, University of Minnesota, Minneapolis, May 13-15 1993

90. Discrete- vs. Continuous- time Nonlinear Signal Processing: Attractors, Transitions and Parallel Implementation Issues, Session TM7, 1993 American Control Conference, San Francisco, June 1993 (with R. Rico-Martinez, M. Kube and J. L. Hudson).
91. Model Reduction for Stability and Bifurcation Calculations for Nonlinear PDEs, IEEE Mediterranean Control Conference, Chania, Greece, June 1993 (with M. D. Graham)
92. Noninvertibility and its Role in the Dynamics of Adaptively Controlled Systems, IEEE, Mediterranean Control Conference, Chania, Greece, June 1993 (with R. Adomaitis, C. Frouzakis and R. Rico-Martinez)
93. Workshop Excitability to Oscillations: a case study in Spatially Extended Systems, Nice, France, June 1993 (with -and presented by- D. Barkley).
94. The bifurcation and basin of attraction structure in noninvertible sytems, SIAM Annual Meeting, Philadelphia, PA, July 1993 (with R. A. Adomaitis and R. de la Llave, presented by R. A. Adomaitis).
95. Invited Talk, Hereaus Foundation Workshop on Pattern Formation in Distributed Systems, Potsdam, Germany, September 1993
96. The adaptively controlled mixing tank: experiments and modeling, with R. A. Adomaitis and C. E. Frouzakis, Poster Presentation, 2nd Experimental Chaos Conference, Arlington, Virginia, October 1993.
97. A Farey Sequence in Cu Electrodissolution Data, with R. Rico-Martinez, M. C. Kube and J. L. Hudson, AIChE annual meeting, Saint Louis, November 1993
98. Spiral Waves and Meandering Instabilities in Reaction Diffusion Systems, with (and presented by) D. Barkley, AIChE annual meeting, Saint Louis, November 1993
99. Computer assisted Floquet analysis of 2D and 3D Flows, with (and presnted by) D. Barkley and with G. M. Karniadakis, AIChE annual meeting, Saint Louis, November 1993
100. Time Dependent Flows in Fluidized Beds, with (and presented by) B. Glasser and S. Sundaresan, AIChE annual meeting, Saint Louis, November 1993
101. Pattern Analysis ad Model Reduction - Catalysis on Microstructured Surfaces, with (and presented by) M. D. Graham, AIChE annual meeting, Saint Louis, November 1993
102. Singular Stokes Eigenfunctions for 2D Flows, APS November meeting, Albuquerque, Nov. 1993, with (and presented by) P. Batcho and G. Karniadakis.
103. Catalysis on Microstructured Surfaces, Dynamics Days 94, Duke University, Durham, NC, January 1994
104. Time-dependent flows in fludized beds, Poster presentation, Dynamics Days 94, Duke University, Durham, NC, January 1994 (w. B. Glasser and S. Sundaresan)
105. On the numerical computation of invariant manifolds, Poster presentation, Dynamics Days 94, Duke University, Durham, NC, January 1994 (w. M. E. Johnson and M. S. Jolly)
106. Noninvertible Dynamics in Neural Network Models, 28th IEEE conference on Information Sciences and Systems, March 1994 (with R. Rico-Martinez and R. Adomaitis)
107. Invited Talk, IFAC Symposium on modeling and control of biomedical systems, Galveston, TX, March 1994 (with R. deBoer and A. S.Perelson)
108. Invited Talk, Workshop on Phase Transitions during CO oxidation, Institute of Mathematics and its Applications, May-June 1994
109. On the computation and visualization of global bifurcations, poster-video presentation, SIAM annual meeting, San Diego, July 1994 (with M. Johnson and M. Jolly)
110. Catalysis on Microstructured Surfaces, SIAM annual meeting, San Diego, July 1994 (with M. Baer and M. D. Graham)
111. Invited Talk Gordon Conference on Chemical Oscillations, Rhode Island, August 1994

112. Continuous-Time nonlinear signal processing: a neural network approach for gray box identification, Short presentation - Poster, 1994 IEEE Workshop on neural networks for signal processing, Ermioni, Greece, with R. Rico-Martinez and J. S. Anderson.
113. Flows in 2-D Complex Geometries: Bifurcation Studies with Alternative Global Eigenfunction Expansions, 1994 AIChE annual meeting, San Francisco (with P. Batcho, A. K. Bangia and G. Karniadakis).
114. Simulation of simultaneous transport and hardening in polymer gels, 1994 AIChE annual meeting, San Francisco (with R. W. Powell and K. Christodoulou)
115. The formation of bubbles in fluidized beds, 1994 AIChE annual meeting, San Francisco (with B. Glasser and S. Sundaresan)
116. Effects of Boundaries on Reaction Diffusion Patterns: Modeling of CO Oxidation on Pt, 1994 AIChE annual meeting, San Francisco (with M. Baer, M. Graham and V. Brackenhammer)
117. Spatiotemporal Patterns in the NO+CO reaction: Phenomena and Image Processing, 1994 AIChE annual meeting, San Francisco (with G. Veser, R. Imbihl, X. Bin and J. L. Hudson)
118. Study and Control of Taylor-Couette Flow with axial motion of the inner cylinder, 1994 APS Fluid Mechanics meeting, with A. Smits and A. Weisberg
119. Basin boundary structure transitions for the rotating logistic map, Nonivertible Dynamical Systems Workshop, NSF Geometry Center, Minneapolis, March 1995 (with R. Adomaitis -speaker- and R. de la Llave)
120. Noninvertibility in Adaptive Control Systems, Nonivertible Dynamical Systems Workshop, NSF Geometry Center, Minneapolis, March 1995 (with C. Frouzakis -speaker- and R. Adomaitis)
121. Noninvertibility in Neural Networks, Nonivertible Dynamical Systems Workshop, NSF Geometry Center, Minneapolis, March 1995 (with C. Frouzakis and R. Adomaitis)
122. Invariant Manifolds and global bifurcations in the Kuramoto-Sivashinsky equation, SciCADE 95, with M. S. Jolly (speaker) and M. Johnson.
123. Time dependent flows in fludized beds, with B. Glasser (speaker) and S. Sundaresan, SIAM Dynamical Systems meeting, Utah, May 1995
124. Continuous time nonlinear signal processing, with J. Anderson (speaker) and R. Rico-Martinez, SIAM Dynamical Systems meeting, Utah, May 1995
125. The influence of inert and active boundaries on pattern formation in CO oxidation on Pt, with M. Baer et al., SIAM Dynamical Systems meeting, Utah, May 1995
126. Invariant manifolds and global bifurcations in the KS equation, with M. Johnson (speaker) and M. S. Jolly, SIAM Dynamical Systems meeting, Utah, May 1995.
127. Invited Talk 1995 ISPE meeting, Aspen, Colorado, July 1995 (with Matthew Reallf)
128. Catalysis on microdesigned surfaces (with M. Baer and A. Bangia), 1995 Materials week, Cleveland, Nov. 1996
129. Invited Talk, Alpha Chi Sigma Symposium in honor of J. Ottino, AIChE annual meeting, Miami, November 1996
130. Dynamics of time-dependent patterns on composite catalytic surfaces, with A. Bangia (speaker) and M. Baer, AIChE annual meeting, Miami, November 1996
131. Waves, bubbles and clusters in fluidized beds, with B. Glasser (speaker) and S. Sundaresan, AIChE annual meeting, Miami, November 1996
132. Nonlinear system identification using gray-box networks, with J. Anderson (speaker) and R. Rico-Martinez, AIChE annual meeting, Miami, November 1996
133. Non-Fickian Diffusion with simultaneous cross-linking in polymers, with R. Powell (speaker) and C. Christodoulou

134. Study and Control of Taylor-Couette Flow with axial motion of the inner cylinder, 1995 APS Fluid Mechanics meeting, with A. Smits and A. Weisberg (Irvine, CA).
135. Invited Talk Catalysis on microstructured surfaces, IMA workshop on disordered media, Minneapolis, November 1996
136. Invited Talk Catalysis on microdesigned surfaces, European Science Foundation Conference on Reactive Surfaces, Cambridge, England, January 1996
137. Invited Talk Model Reduction for PDE simulations, IMA Workshop on "Optimization and Control for Materials Processing applications: Simulations, Models and Strategies", Minneapolis, February 1996
138. Self-Consistency Tuning in Neural Network Based NLPC Analysis, CISS'96, Princeton, NJ, March 1996 (with J. S. Anderson and presented by R. Rico-Martinez).
139. Use of adaptation and feedback in the experimental determination of bifurcations, CISS'96, Princeton, NJ, March 1996, with J. S. Anderson, R. Rico-Martinez and K. Krischer
140. Invited Talk, 2nd World Congress of Nonlinear Analysts, Athens, Greece, July 1996
141. Noninvertibility in neural networks (with N. Gicquel and J. S. Anderson), 2nd World Congress of Nonlinear Analysts, Athens, Greece, July 1996
142. Plenary Lecture, SIAM Annual Meeting, Kansas City, July 1996
143. Computation of two-dimensional invariant manifolds (presentation, with M. Johnson); Workshop on issues in bifurcation computations, NSF and IMA, Minneapolis, October 1996
144. Spatiotemporal Patterns on Microcomposite Catalysts, AIChE Annual Meeting, Chicago, November 1996
145. Adaptation and Feedback in the Experimental Detection of Instabilities (presented by J. Anderson), AIChE Annual Meeting, Chicago, November 1996
146. Patterns in heterogeneous media: CO oxidation on Pt(110), AIChE Annual Meeting, Chicago, November 1996
147. Mixed Mode Oscillations in an Electrochemical System: Characterization of a two-parameter scenario using neural network models, (presented by R. Rico-Martinez) AIChE Annual Meeting, Chicago, November 1996
148. Invited Talk, CNLS Annual Conference, Los Alamos, May 1997
149. Three contributed talks and posters, SIAM Dynamical Systems Meeting, Snowbird, Utah, May 1997
150. ACC annual meeting, Albuquerque, June 1997
151. Poster presentations, Gordon Conference on Chemical Oscillations, RI, July 1997
152. SIAM annual meeting, July 1997, Stanford, CA (presented by B. Glasser)
153. Invited Talk, CNLS workshop on turbulence, Los Alamos, June 1997
154. Two invited talks, IMA Special Year on Dynamical Systems, Minneapolis, September 1997
155. Invited Talk, POD-Galerkin Workshop, Cornell, Ithaca, October 1997
156. Model Reduction for Control of Distributed Parameter Sstems, AIChE annual meeting, Los Angeles, November 1997 (with S. Shvartsman and M. Baer)
157. Simulations of 2-D polyelectrolyte swelling, AIChE annual meeting, Los Angeles, November 1997, with E. Achilleos, R. Prudhomme and K. Christodoulou
158. Invited Talk in Alpha Chi Sigma Symposium in honor of L. S. Fan, AIChE annual meeting, Los Angeles, November 1997 (presented by S. Sundaresan, co-authored with B. Glasser).
159. Invited Talk, 80th Statistical Mechanics meeting, Rutgers, Decemember 1998
160. Invited Talk, "The last conference on Nonlinear Science", CCCNLS, U. of California, Napa Valley, April 1999
161. Invited Talk, NSF Conference on Flow Control, UCSD, June 1999
162. Invited Talk, 12th NATO Summer School on Nonlinear Dynamics, Patras, Greece, July 1999

163. Invited Talk, Equadiff, Berlin, Germany, August 1999
164. Invited Talk, DANSE, Berlin, Germany, August 1999
165. Invited Talk, Pattern formation workshop at Ostharz, Germany, Nov. 1999
166. AIChE Annual Meeting, Dallas, November 1999. Three talks (by S. Shvartsman, by K. Theodoropoulos, by K. Sankaranarayanan).
167. 1999 CCA (two presentations in collaboration with UTRC and Pratt and Whitney) Hawaii, August 1999
168. Invited Talk, Workshop on PODs and its Applications, Graz, Austria May 2000
169. Invited Talk, Conference on the Engineering of Chemical Complexity, Fritz-Haber-Institut, Berlin, June 2000
170. SIAM Pacific Rim Dynamical Systems Meeting, Hawaii, August 2000
171. AFOSR Contractors/Grantees Meeting, Pasadena, August 2000
172. ECOSS19, 19th European conference in surface science, Madrid, September 5-8, 2000. (a) "Microcomposite Metal/Pt(110) Catalysts: CO oxidation reaction fronts", M. Pollmann (presenter), M. Kim, X. Li, I.G.K., H.H.Rotermund and G. Ertl. (b) "Pattern formation in addressable media: CO oxidation with locally controlled laser heating", J. Wolff (presenter), I.G.K., H.H.Rotermund and G. Ertl.
173. 2000 AIChE annual meeting. Plenary Lecture, Area 10D; also three presentations (by J. Krishnan, by X. Li, by C. Theodoropoulos).
174. SIAM Dynamical Systems meeting, Utah, May 2001: two presentations, one by B. B. Peckham and one by A. Khibnik
175. 2001 AIChE annual meeting - nine presentations.
176. Plenary Lecture, Fields Institute, December 2001
177. Invited Talk, Workshop on Algorithm Refinement, Los Alamos, April 2002
178. Invited Talk, AFOSR meeting on the Future of Control, Washington, DC, April 2002
179. Invited Talk, The Engineering of Chemical Complexity, FHI der MPG, Berlin, June 2002
180. Plenary Lecture, Dynamics Days Europe 2002, Heidelberg, July 2002
181. Invited Talk, 9th Panhellenic Analysis Mathematical Conference, Chania, September 2002
182. Twelve contributed presentations, AIChE annual meeting, Indianapolis, IN, November 2002
183. Invited Talk, Multiscale Workshop at the Institute for Advanced Study, Princeton, December 2002.
184. Invited Lecture, EMCC-3, Thessaloniki, Greece, May 2003
185. Invited minisymposum presentation, EMCC-3, Thessaloniki, Greece, May 2003
186. Invited Lecture, Interdisciplinary Symposium: Mathematical Modeling in Modern Technologies and Economics, NTU Athens, Greece, May 2003
187. Plenary Lecture, SIAM Dynamical Systems meeting, Snowbird, May 2003
188. Three invited minisymposium presentations, SIAM Dynamical Systems meeting, Snowbird, May 2003
189. Invited Talk, NSF/ACC Workshop on Control in Multiscale Systems, Denver, June 2003
190. Three contributed talks, ACC, Denver, June 2003.
191. Invited Talk, Med-2003 Control Conference, Rhodes, Greece, June 2003
192. Contributed Talk, Med-2003 Control Conference, Rhodes, Greece, June 2003
193. Four hours of invited lectures, ETH Summer school on Multiscale Science, Lugano, August 2003
194. Invited Lecture, Multiscale Conference in Biology, Notre Dame, August 2003
195. Plenary Lecture, IWNETCF03, Princeton, August 2003.
196. Invited Lecture, Advances in Integration, Brown University, August 2003
197. Plenary Lecture, PATT03, MPIPKS, Dresden, Germany, August 2003
198. Invited Lecture, Invariant Manifolds Conference, Zuerich, Switzerland, August 2003
199. AFOSR Contractors Meeting, Florida, September 2003
200. Invited Talk, Conference for the 100 years of John von Neumann, Budapest, Hungary, October 2003.

201. Invited Talk, Conference on Multiscale Modeling of Interfaces, CSCAMM, University of Maryland, October 2003.
202. Invited Talk, Computational Materials Science Workshop, AHPCRC, U. of Minnesota, Minneapolis, November 2003
203. Thirteen contributed and two invited presentations, AIChE annual meeting, San Francisco CA, November 2003.
204. Invited Lecture, Heidelberg Academy of Sciences, Heidelberg, Germany, December 2003
205. Invited Lecture, Dynamics Days 2004, Raleigh, North Carolina, January 2004
206. Invited Lecture, Multiscale Workshop, Lawrence Livermore National Laboratory, Livermore, California, January 2004
207. Invited Lecture, DARPA Workshop, UTRC, Hartford, Connecticut, January 2004
208. Invited presentation (and short contributed talk) - SAMSI Workshop on Multiscale Challenges in Soft Matter Materials, Research Triangle, North Carolina, February 2004.
209. Invited Lecture - Numerical Methods for Plasma Astrophysics, CSCAMM, Maryland, March 2004.
210. Invited Lecture - 2004 Copper Mountain Conference on Iterative Methods, March 2004
211. Invited Presentation, 3d NSF Cyberinfrastructure Workshop, Drexel University, Philadelphia, May 2003.
212. Invited Presentation, 3d conference on Engineering Chemical Complexity, Fritz Haber Institut der MPG, Berlin, Germany, May 2004.
213. Plenary Talk, SIAM annual meeting, Portland, OR, July 2004
214. Three invited presentations, SIAM annual meeting, Portland, OR, July 2004 (one presented by Dr. Dongbin Xiu)
215. Plenary lecture, Interdisciplinary Olympia Complexity Conference, Patras, Greece, July 2004
216. Plenary lecture, American Society of Civil Engineers, Albuquerque, NM, July 2004
217. Invited presentation, Frontiers of Engineering, National Academy of Engineering, Irvine, CA, September 2004
218. Two Invited Talks, Workshop on Differential Equations and its Applications Istanbul Technical University, Istanbul, Turkey, September 2004
219. Invited Talk, IPAM Workshop on multiscale computational geometry, UCLA, Los Angeles, October 2004
220. Invited Talk, Multiscale Mathematics meeting, IMA, Minneapolis, November 2004.
221. Contributed Talks (twelve); AIChE annual meeting, Austin, TX, November 2005
222. Invited Talk, American Geophyisical Union annual meeting, San Francisco, CA, December 2004
223. Invited Talk, 92nd Statistical Mechanics meeting, Rutgers, NJ, December 2004
224. Plenary Lecture, Conference on High Dimensional Dynamical Systems, Bristol, England, March 2005.
225. Invited Talk, Workshop on Multiscale Mathematics and Applications, CRM, Universite de Montreal, Montreal, CA, May 2005.
226. Invited talks (six); SIAM/Dynamical Systems meeting, Snowbird, UT, May 2005
227. Invited talk, 3d Israeli Applied Mathematics Workshop, Hebrew university, Jerusalem, Israel, June 2005
228. Invited presentations (three), European Mechanics conference, Eindhoven, the Netherlands, August 2005.
229. Invited presentations (two), Workshop on model reduction, Leicester, England, August 2005.
230. Invited Presentations (two) AFOSR contractors meeting, Long Beach, CA, Sept. 2005
231. Plenary Lecture, International Workshop on Meshfree Methods, Bonn, Germany, Sept. 2005
232. Invited Talk, IPAM Multiscale Workshop, UCLA, Los Angeles, CA, October 2005
233. Invited Talk, Biocomplexity Conference, Notre Dame, South Bend, IN, October 2005

234. Five contributed presentations, AIChE annual meeting, Cleveland, OH, November 2005
235. Invited Talk, IPAM/CIMMS Multiscale Workshop, Pasadena, CA, November 2005
236. Invited Talk, IPAM Multiscale Workshop, Lake Arrowhead, CA, December 2005
237. Contributed Talk (presented by S. J. Moon) and poster (presented by E. Kimball), Dynamics Days, Maryland, January 2006
238. Invited Talk, CPC 7, Lake Louise, CA, January 2006
239. Invited Talk, Emerging paradigms in nonlinear science, Los Alamos National Lab, Los Alamos, January 2006
240. Invited Talk, Texas-Wisconsin Modeling and Control Consortium, UT Austin, Austin, Texas, February 2006
241. Invited Talk, Workshop on Plasma Closures, ORNL, Oak Ridge, TN, March 2006
242. Contributed Talk, (S. Ahuja, C. Rowley, I. G. K.), 2006 ACC, Minneapolis, June 2006
243. Invited Talk, Engineering Chemical Complexity, Fritz-Haber-Institut, Berlin, June 2006
244. Two Invited Talks, "Which Mathematics for Biology? Summer School", Anogeia, Crete, July 2006
245. Plenary Talk, Joint SIAM/SMB meeting, Raleigh, North Carolina, August 2006
246. Three Invited Talks, Complex Systems School, Venice, October 2006
247. One invited and 11 contributed presentations, AIChE annual meeting, San Francisco, CA November 2006
248. Invited Talk, Mathematical Modeling and Analysis of Cancer Invasion of Tissues, ICMS, University of Dundee, March 2007
249. Invited Talk, Complex Fluid Modeling Workshop, CSCAMM, University of Maryland, April 2007
250. Invited Talk, Sherwood Plasma Physics Conference, Annapolis, Md, April 2007
251. Three contributed talks, SIAM-Dynamical Systems meeting, Snowbird, Utah, May 2007
252. Two Invited Lectures, Summer School on Multiscale Computation, KTH, Boson, Sweden, June 2007
253. Two Invited Lectures (8 hours), Summer School on Complex Systems, DTU, Copenhagen, Denmark, June 2007.
254. Four invited lectures, ICIAM 2007, Zuerich, Switzerland, July 2007
255. Plenary lecture, USNCCM-9, San Francisco, July 2007
256. Three invited presentations, Workshop on the Mathematics of Model Reduction, Department of Mathematics, University of Leicester, August 2007
257. Invited Talk, 2nd Toyota Workshop on Agent Based Modeling, Austria, October 2007
258. Invited Talk, NSF Workshop on Simulation Based Science and Engineering, Arlington, VA, October 2007
259. Invited Talk, Workshop on Numerical Analysis and Multiscale Mathematics, University of Bath, September 2007.
260. Ten contributed talks, AIChE annual meeting, Salt Lake City, Utah, November 2007
261. Invited Talk, AMS joint meetings, San Diego, January 2008
262. Invited Talk, Workshop on protein folding, IMA, Minneapolis, January 2008
263. Invited Talk, Engineering of Chemical Complexity, Berlin, May 2008
264. Plenary Lecture, 6th GRACM Computational Mechanics Conference, Thessaloniki, Greece, June 2008
265. Invited Talk, AFOSR workshop on agent-based modeling, Santa Barbara, September 2008
266. Invited Talk, 3d Toyota CRDL workshop on complex systems, Gemenos, France, October 2008
267. Invited Talk, Workshop "from surface science to short contact time reactors", University of Minnesota, Mplis, October 2008
268. Invited Presentation, NSF Working Group meeting on complex systems, Washington DC, October 2008.
269. One invited and three contributed talks, AIChE annual meeting, Philadelphia, November 2008

270. Invited Talk, AIChE CAST Awards meeting, Philadelphia, November 2008
271. Plenary Talk, Model Reduction in Reacting Flows, Notre Dame U., Indiana, March 2009
272. Two invited talks, SIAM Dynamical Systems Meeting, Snowbird, Utah, May 2009
273. Invited Talk, Conference on Nonlocal Pattern Formation, the Technion, Haifa, Israel, June 2009
274. Invited Talk, MED 2009 Mediterranean Control Conference, Thessaloniki, Greece, June 2009
275. Keynote Talk, Conerence on Managing Complexity, Ambleside, England, August 2009
276. Invited Talk, Multiscale-Multiphysics Conference, University of Leuven, Leuven, Belgium, September 2009.
277. Keynote Lecture, 5th Sino-US Chemical Engineering Conference, Beijing, October 2009
278. Seven contibuted talks, AIChE annual meeting, Nashville, TN, November 2009
279. Contributed talk, SIAM Materials Science meeting, Philadelphia, May 2010
280. Contributed talk (presented by AZP), ACS meeting, Boston, August 2010
281. Six (Five contributed, one invited) talks, AIChE annual meeting, SLC, Utah, Nov. 2010
282. Invited talk, Workshop in memory of A. C.Payatakes, Patras, Greece, Dec. 2010
283. Invited Lectures, Mathematics Summer School, Raglan, NZ, February 2011
284. Invited Talk, Multiscale Mathematics, Conference, ACMAC, University of Crete, June 2011
285. Four invited talks, SIAM Dynamical Systems Meeting, Snowbird, Utah, May 2011
286. Contributed talk (presented by M. Kavousanakis), GRACM, June 2011, Athens, Greece
287. Invited Talk, Conference on Chemical Complexity, Berlin, July 2011
288. Plenary Lecture, SIAM Conference on Control, Baltimore, MD, July 2011
289. Invited Talk, Soft Condensed Matter Conference, Kyoto University, September 2011
290. Three plenary lectures (one presented by Prof. Bill Gear, one by Prof. Edriss Titi), ICNAAM 2011, Chalkidiki, Greece, September 2011
291. Three contributed presentations, 2011 AIChE annual meeting, Minneapolis, October 2011
292. One contributed talk, APS Fluid Mechanics meeting, Baltimore, December 2011
293. Two invited talks, MAPCON12, MPIPKS Dresden, May 2012
294. Invited talk, Conference on Molecular Simulation, Brown University Mathematics Institute, Providence, RI, August 2012
295. Contributed presentation, NANO 2012, Rhodes, Greece, August 2012
296. Invited talk, Mediterranean Statistical Mechanics conference, Marmaris, Turkey, August 2012
297. Invited Talk, CECAM meeting on machine learning in molecular simulations, Lugano, Switzerland, September 2012
298. Contributed Talk, AIChE annual meeting, Pittsburgh, PA, October 2012
299. Contributed Talk, SIAM Computational Science Meeting, Boston, MA, February 2013
300. Four contributed talks, SIAM Dynamical Systems meeting, Snowbird, Utah, May 2013
301. Invited Talk, Conference on Encounters between Continuum and Discrete Mathematics, Eotvos Lorand University, Budapest, May 2013
302. Invited Talk, Workshop on Slow-Fast Dynamics, Center for Mathematics Research, Universita Autonoma de Barcelona, Barcelona, June 2013
303. Contributed Talk, ICCS 2013, Barcelona, Spain, June 2013
304. Invited Talk, SIAM annual meeting, San Diego, CA, July 2013
305. Invited Talk, Oxford Conference in Applied Mathematics, July 2013
306. Two Invited Talks, Workshop on Active Soft Matter, Newton Institute, University of Cambridge, England, August 2013
307. Plenary lecture, SOSA IEEE Conference, Philaldephia, PA, September 2013
308. Invited Talk, Sustainability Conference, MBI, Ohio State, Columbus, October 2013
309. One invited and five contributed talks, AIChE annual meeting, San Francisco, November 2013

310. One invited talk, Statistical Mechanics meeting, Rutgers, May 2014
311. Invited talk, Conference on Coarse Graining in Statistical Mechanics, Santa Fe, June 2014
312. Contributed talk, Tissue Engineering Conference, Kos, Greece, June 2014
313. Invited talk, ENOC, Vienna, July 2014
314. Invited talk, Nonlinear Vibrations conference, Istanbul, June 2014
315. Invited talk, Statistical Mechanics conference, Athens, Greece, July 2014
316. Invited talk, Complexity conference in honor of A. Gorban, Leicester, England, August 2014.
317. Invited talk, CECAM multiscale modeling workshop, Mainz, Germany, October 2014.
318. 4 Contributed Talks, AIChE annual meeting, Atlanta, GA, November 2014
319. Invited Talk, Dynamics on and of Networks, Santa Fe Institute, December 2015
320. Invited Talk, Discrete Networks, University of Pittsburgh, December 2015
321. Invited Talk, Agent-Based Modeling, Tucson, AZ, April 2015
322. Three invited talks, SIAM Dynamical Systems meeting, Snowbird, Utah, May 2015
323. Invited talk, Mathworks Annual Meeting, Boston MA, June 2015
324. Invited talk, Engineering of Chemical Complexity, Muenchen, Germany, June 2015
325. Invited talk, ICERM, conference on numerical algorithms, Providence, September 2015
326. Invited talk, CECAM Woskshop on collective coordinates, Schroedinger Institute, Vienna, September 2015
327. Two contributed talks, SciCADE mathematics conference, Postdam, Germany, September 2015
328. Plenary lecture (presented by Prof. C. W. Gear), Rhodes, Greece, September 2015
329. Plenary lecture, 2016 Set Oriented Numerics Conference, Imperial College, London, September 2015
330. Invited talk, Workshop on Machine Learning, Santa Fe Institute, Jan. 2016
331. Keynote Lecture, The Digital Future, ZIB and TU Berlin, May 2016
332. Induction Lecture, Greek Academy, May 2016
333. Invited talk, FU Berlin Applied Math PhD Retreat, June 2016
334. Invited Talk, worksop on multiscale algorithms, ICERM, Brown University, summer 2016
335. Plenary Talk, FU Conference on Patterns in Dynamics, Berlin, August 2016
336. Plenary Talk, SIAM Annual Meeting, Boston ,July 2016
337. Rothschild Lecture, Newton Institute, Cambridge, June 2016
338. Invited talk, IPAM Multiscale meeting, October 2016
339. Invited talk, Workshop on Topology, University of Pennsylvania, October 2016
340. One invited and four contributed lectures, AIChE annual meeting, San Francisco, November 2016
341. Invited Talk, Data Science Workshop, IAS-TUM, Munich, January 2017
342. Invited Talk, ICERM, June 2018, Providence
343. Invited Talk, LlaveFet, University of Barcelona, Barcelona, June 2017
344. Invited Talk, MIT Future of Process Systems Symposium, June 2017 Boston
345. Invited Talk, Reaction Engineering Summer School, U. of Thessaloniki, September 2017 Porto Karas, Greece
346. Invited Talk, IPAM, Workshop on complex landscapes, UCLA, October 2017
347. One invited and seven contributed talks, AIChE annual meeting, Minneapolis, November 2017
348. Norbert Wiener Distinguished Lecture, Mathematics, University of Maryland, February 2018
349. Invited Talk, IUTAM, Cornell University, September 2018
350. Invited Talk, NIST Conference, NIST, October 2018
351. Invited Panel Talk, US-Czech Artificial Intelligence Workshop, U. Maryland, September 2018
352. Invited Talk, Multiresolution Simulations of Intracellular Processes, The Royal Society, Chicheley Hall, UK, September 2018
353. Invited Talk, IPAM Workshop on High Performance Computation, UCLA, Los Angeles, October 2018
354. Plenary Talk, Conference on Chemical Complexity, NIST, Gaithersburg, MD, October 2018

355. Six Contributed Presentations, AIChE Annual Meeting, Pittsburgh, PA, November 2018
356. Invited Talk, PDE Conference, University of Massachusetts, November 2018
357. Invited Talk, Midwest Dynamics Days, Minneapolis, MN, November 2018
358. Invited Talk, NASCRE 2019, Houston, Texas, March 2019
359. Keynote Public Talk, Data Science Day, University of Maryland, March 2019
360. Invited Talk, NASCRE 4, Houston, Texas, March 2019
361. Five invited presentations, SIAM Dynamical Systems Meeting, Snowbird, May 2019
362. Invited Poster Presentation, Data for Dynamics and Control, MIT, Boston, May 2019
363. Plenary Lecture, Engineering of Chemical Complexity, Postdam, Germany, June 2019
364. Invited Lecture, Data Science Conference, Georgia Tech, Atlanta, GA, June 2019
365. Contributed Lecture, Traffic and Granular Flow (TGF) in Pamplona, Spain, July 2019
366. Invited Lecture, Workshop on Machine Learning, IPAM, UCLA, October 2019
367. Invited Talk, Workshop on Soft Matter, University of Florida, Gainesville, FL, October 2019
368. Seven contributed papers, AIChE annual meeting, Orlando, November 2019
369. Invited Talk, Searching for Simplicity, Center for the Physics of Biological Sciences, Princeton/CUNY, New York, NY, November 2019
370. Invited Talk, Data-Centric Engineering, Massachusetts Institute of Technology, Boston, MA, December 2019
371. Invited Talk, 3d Physics Informed Machine Learning Conference, Santa Fe, NM, January 2020
372. Nine contributed papers. Virtual AIChE annual meeting, November 2020.
373. Invited Talk, Joint European Thermodynamics Conference, June 2021
374. Invited Talk, Machine Learning Conference, Newton Institute, Cambridge, August 2021
375. 6 hours of numerical analysis school lectures, University of Napoli, May 2021
376. Plenary Talk, DeepMath 2021, electronic conference, November 2021
377. Twelve contributed papers, AIChE annual meeting, Boston, November 2021
378. 6 hours of numerical analysis lectures, University of Napoli, December 2021
379. Invited Talk, RARE2020 (took place in 2021) IIT Kanpur, India, December 2021
380. Invited Talk, ICERM Institute, Providence, Rhode Island, December 2021

SEMINARS

1. Earth and Space Sciences Division, Los Alamos National Laboratory, March 1986
2. Department of Applied Mathematics, University of Utah, May 1986
3. Program in Applied and Computational Mathematics, Princeton University, November 1986 (two talks)
4. Departments of Chemical and Aerospace Engineering, University of Arizona, January 1987
5. Department of Chemical Engineering, New Jersey Institute of Technology, March 1987
6. Department of Applied Mathematics, Massachusetts Institute of Technology, April 1987
7. Department of Chemical Engineering, Massachusetts Institute of Technology, April 1987
8. Department of Chemical Engineering, University of Pennsylvania, September 1987
9. Department of Chemical Engineering, University of Patras, Greece, June 1988
10. Nonlinear Summer School on Dynamical Systems, organized by the University of the Aegean, Samos, Greece, July 1988 (series of two invited lectures)
11. Department of Applied Mathematics, Brown University, November 1988
12. Department of Chemical Engineering, University of Notre Dame, November 1988
13. Department of Chemical Engineering, Cornell University, January 1989
14. Central Jersey AIChE Section, February 1989
15. Department of Chemical Engineering, University of Houston, March 1989
16. Department of Applied Mathematics, SUNY at Buffalo, April 1989

17. Department of Mathematics, Boston University, May 1989
18. Shell Development Co., Houston, August 1989
19. Department of Physics, University of Texas at Austin, January 1990
20. Program in Applied Mathematics, Univ. of Colorado/Boulder, March 1990
21. Department of Mathematics, Worcester Polytechnic Institute, March 1990
22. Department of Chemical Engineering, MIT, May 1990
23. Systems Development Department, Shell Development Co, Houston, July 1990
24. The Benjamin Levich Institute for Physicochemical Hydrodynamics, City College, CUNY , October 1990
25. Department of Chemical Engineering, University of Virginia, November 1990
26. Department of Chemical Engineering, Stevens, November 1990
27. Department of Chemical Engineering, University of Texas, Austin, January 1991
28. National Institutes of Health, Bethesda, Maryland, January 1991
29. Army High Performance Computing Center, University of Minnesota, April 1991
30. Mobil Research and Development Co., Paulsboro, N.J., September 1991
31. Department of Applied Mathematics, University of Colorado, September 1991
32. Department of Chemical Engineering, U. C. San Diego, October 1991
33. Department of Chemical Engineering, U. C. Santa Barbara, October 1991
34. Department of Chemical Engineering, U. C. Berkeley, October 1991
35. Department of Chemical Engineering, Caltech, October 1991
36. Department of Mathematics, University of Indiana, Bloomimgton, October 1991
37. Department of Chemical Engineering, U. Mass. (Amherst), November 1991
38. Department of Chemical Engineering, University of Maryland, November 1991
39. Department of Chemical Engineering, University of Colorado, December 1991
40. Department of Chemical Engineering, Northwestern University, May 1992
41. Exxon Research and Engineering Co., Florham Park, NJ, May 1992
42. ALCOA Technical Center, Pittsburgh, PA, September 1992
43. Department of Applied Mathematics, Northwestern University, December 1992
44. Department of Chemical Engineering, University of Minnesota, December 1992
45. Exxon Research and Engineering Co., Florham Park, NJ, January 1993
46. Fritz-Haber Institut der Max-Planck Gesellschaft, Berlin, January 1993
47. Laboratoire d'Analyse Numerique, Universite de Paris XI, Orsay, France, January 1993
48. Department of Chemical Engineering, City College of CUNY, March 1993
49. Foundation for Research and Technology (Forth) / University of Crete, Greece, June 1993
50. Department of Chemical Engineering, University of Patras, Greece, June 1993
51. Department of Mathematics and Center for Nonlinear Dynamics, University of Texas, Austin, October 1993
52. Departments of Mathematics and Chemistry, Bryn Mawr College, Philadelphia, Nov. 1993
53. Department of Chemistry, Southern Methodist U., Dallas, April 1994
54. Department of Chemical Engineering, Georgia Inst. of Technology, Atlanta, GA May 1994
55. Department of Mathematics, Georgia Inst. of Technology, Atlanta, GA, May 1994
56. Department of Mathematics, Arizona State U., Phoenix, AZ, October 1994
57. Department of Chemical Engineering, Purdue U., West Lafayette, IN, November 1994
58. Department of Mathematics, Stanford U., Stanford, CA, November 1994
59. Department of Applied Mathematics, Brown University, Providence, RI, December 1994
60. Department of Chemical Engineering, U. of Delaware, Newark, DE, December 1994
61. Department of Chemical Engineering, Istituto Tecnologico de Celaya, Celaya, Mexico, January 1995 (a minicourse of 12 hours lectures)

62. Department of Mathematics, Penn State University, College Station, PA, January 1995
63. Department of Chemical Engineering, Massachusetts Institute of Technology (Chemical Engineering Science Symposium) March 1995
64. Department of Chemical and Nuclear Engineering, University of New Mexico, Albuquerque, NM, April 1995
65. Courant Institute of Mathematical Sciences, NYU, New York, May 1995
66. Department of Chemical Engineering, New Jersey Institute of Technology, Newark, NJ, May 1995
67. Department of Chemical Engineering, University of Minnesota, Minneapolis, MN, May 1995
68. Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM July 1995
69. Siemens Co., Princeton, NJ., June 1995
70. DuPont CR&D, Neural Networks group, Wilmington, DE, June 1995
71. DuPont CR&D, Control group, Wilmington, DE, June 1995
72. Ecole d'ete d'automatique de Grenoble, ENSIEG-INPG, Grenoble, France (three hours of lectures), Grenoble, France, September 1995.
73. Department of Chemical Engineering, Carnegie-Mellon University, Pittsburgh, PA, October 1995
74. IBM Thomas Watson Research Center, NY, December 1995
75. Department of Chemical Engineering, Lehigh University, Bethlehem, PA, March 1996
76. Courant Institute of Mathematical Sciences, NYU, New York, March 1996
77. Department of Mathematics, University of Chicago, May 1996
78. Department of Chemical Engineering, UC Santa Barbara, May 1996
79. Department of Chemical Engineering, University of Patras, July 1996 (two talks)
80. Laboratory for Energy Technology, ETH, Zurich, Switzerland, August 1996
81. Department of Chemical Engineering, Penn State University, October 1996
82. Department of Chemical Engineering, Drexel University, November 1996
83. Department of Physical Chemistry, University of Hannover, Germany, January 1997
84. Max Planck Institute for Complex Systems, Dresden, Germany, January 1997
85. Department of Physiology, McGill University, Montreal, Canada, January 1997
86. CRM/ISM Colloquium, University of Montreal, Montreal, Canada, January 1997
87. Deaprtemnt of Mathematics, University of Arizona, Tucson, January 1997
88. Department of Physics, Columbia University, New York, March 1997
89. Department of Chemical Engineering, SUNY at Buffalo, Buffalo, March 1997
90. Department of Chemical Engineering, Iowa State University, Ames, IA, September 1997
91. Department of Mathematics, Penn State University, College Station, PA, February 1998
92. Department of Chemical Engineering, UCLA, Los Angeles, CA, March 1998
93. NIST, Gaithersburg, MD, March 1998
94. Department of Chemical Engineering, University of Wisconsin, Madison, WI, January 1999
95. National Research Center "Democritos", Athens, Greece, April 1999
96. Department of Mechanical Engineering, ETH, Zuerich, Switzerland, May 1999
97. Exxon Corporate Research, Clinton, NJ, September 1999
98. Department of Chemistry, Free University, Brussels, October 1999
99. Department of Mathematics, University of Bielefeld, Bielefeld, Germany, October 1999
100. Institut fuer Theoretische Physik, Technische Universitaet, Berlin, Germany, November 1999
101. Mathematisches Forschungstinitut Oberwolfach, a series of 6 lectures on pattern formation in a DMV Seminar on Pattern Formation, Oberwolfach, Germany, November 1999
102. Department of Mathematics, Free University, Berlin, Germany, November 1999
103. Department of Mathematics, Marburg University, Marburg, Germany, December 1999
104. Department of Mathematics, University of Crete, Heraklion, Crete, Greece, June 2000
105. Courant Institute of Mathematica Sciences, Applied Math, New York, NY October 2000

106. Department of Mathematics, UC. Irvine, November 2000
107. Department of Applied Mathematics, Northwestern University, Evanston, November 2000
108. Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, December 2000
109. Exxonmobil corporate research, Clinton, NJ, March 2001
110. Department of Mathematics and Statistics, Simon Fraser University, Vancouver, BC, May 2001
111. UTRC Research Center, Hartford, CT., October 2001
112. Applied Mathematics, Caltech, Pasadena, CA, January 2002
113. Applied Mathematics, Univ. of Chicago, Chicago, IL, February 2002
114. Courant Institute, NYU, NY., NY., February 2002
115. Chemical Engineering, UCSB, Santa Barbara, CA, April 2002
116. Chemical Engineering, Penn State, State College, PA, April 2002
117. Chemical Engineering, Rutgers, New Brunswick, NJ, April 2002
118. Mathematics, Oxford-Princeton meeting, Oxford, UK, May 2002
119. Mathematics, University of Warwick, Warwick, UK, May 2002
120. Computer Science, University of Leuven, Belgium, May 2002
121. Princeton Plasma Physics Laboratory, Princeton, May 2002
122. Chemical Engineering, University of Stuttgart, June 2002
123. Applied Mathematics, University of Maryland, September 2002
124. Applied Mathematics, University of North Carolina, September 2002
125. Mathematics, University of Massachusetts, October 2002
126. CSCS, ETH, Manno, Switzerland, October 2002
127. Chemistry and Chemical Engineering, UC Berkeley, October 2002
128. Mathematics, Stanford University, Stanford, October 2002
129. PiCScie, Princeton University, November 2002
130. SRC, University of Maryland, November 2002
131. Mathematics, NC State University, Durham, November 2002
132. Applied Mathematics, University of Chicago, November 2002
133. Imperial College, London, England, December 2002
134. CNLS, Los Alamos National Laboratory, Los Alamos, January 2003
135. Chemical and Mechanical Engineering, WPI, Worcester, MA, Jan. 2003
136. Mechanical Engineering, Rutgers, New Brunswick, NJ, Feb. 2003
137. Applied Mathematics, Brown University, Providence, RI, March 2003.
138. Courant Institute (Computer Science), New York, NY, March 2003.
139. Chemical Engineering, UMass, Amherst, MA, April 2003.
140. Lawrence Livermore National Laboratory, Livermore, CA, June 2003
141. DARPA/DSRC meeting, San Diego, CA, June 2003
142. Control and Dynamical Systems, Caltech, July 2003
143. Mechanical Engineering, CCNY, New York, NY, September 2003
144. Chemical Engineering, Brooklyn Poly, New York, NY, September 2003
145. Mathematics, University of Pittsburgh,PA, October 2003
146. GFDL, Princeton University, NJ, October 2003.
147. Applied Mathematics, University of Arizona, October 2003.
148. Mathematics and Computer Science, Yale University, November 2003.
149. Civil Engineering, Johns Hopkins UNiversity, December 2003
150. Chemical Engineering, RPI, December 2003
151. Chemical Engineering, University of Pennsylvania, December 2003.
152. ExxonMobil Research, Paulsboro, New Jersey, January 2004.

153. Mathematics, University of Maryland Baltimore County, Maryland, January 2004
154. Chemical Engineering, NJIT, Newark, NJ, March 2004
155. Applied Math/Physics, Columbia University, New York, NY, March 2004.
156. Chemical Engineering, Univ. of California-Davis, Davis, CA, March 2004.
157. Applied Mathematics, Rice University, Houston, TX, March 2004.
158. Materials Science, Lawrence Livermore National Lab, Livermore, CA, May 2004
159. Argonne National Laboratories, Chicago, IL, September 2004
160. Chemical and Biomolecular Engineering, U. of Illinois, Urbana, IL, October 2004
161. Department of Mathematics, NJIT, Newark, NJ, January 2005
162. Department of Mathematics, WPI, Worcester, MA, January 2005
163. Department of Mathematics, University of Bristol, Bristol, UK, February 2005
164. Department of Mathematics, Vanderbilt University, Nashville, TN, April 2005
165. Department of Chemical Engineering, NTUA Athens, Greece, April 2005
166. Department of Applied Mathematics, NTUA Athens, Greece, April 2005
167. Distinguished Lecture Series, Department of Applied Mathematics and Computer Science, the Weizmann Institute, Rehovot, Israel, June 2005
168. Applied Mathematics, Caltech, Pasadena, CA, October 2005
169. Mechanical Engineering, Caltech, Pasadena, CA, October 2005
170. Control and Dynamical Systems, three lectures, Caltech, Pasadena CA, October 2005
171. Department of Biomathematical Science, Mount Sinai School of Medicine, NY, October 2005
172. Department of Chemical Engineering, UCLA, Los Angeles, CA, October 2005
173. Department of Mechanical Engineering, UCSB, Santa Barbara, CA, October 2005
174. Department of Mathematics, Purdue University, West Lafayette, IN, October 2005
175. Applied Mathematics, University of Montreal, Montreal, CA, November 2005
176. Department of Mathematics, Ecole Normale Superieure, Paris, France, November 2005
177. Department Terre-Atmosphere-Ocean, Ecole Normale Superieure, Paris, France, November 2005
178. Applied Mathematics (OCIAM), Oxford University, Oxford, England, November 2005
179. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN, December 2005
180. Department of Chemical and Biomolecular Engineering, Rice University, Houston, TX, January 2006
181. Courant Institute, NYU, New York, February 2006
182. Department of Chemical Engineering, U. of Texas, Austin, TX, February 2006
183. Department of Chemical Engineering, U. of California-Berkeley, Berkeley, CA, March 2006
184. Applied Mathematics, MIT, Boston, MA, April 2006
185. Ecole Centrale, Paris, France, June 2006
186. Neuroscience, Weill Medical Center of Cornell University, New York, June 2006
187. Institute for Electronic Structure and Laser, FORTH, Heraklion, Greece, July 2006
188. Mathematics Department, Arizona State University, Tempe, AZ, September 2006
189. DAMTP, Cambridge University, Cambridge, England, March 2006
190. PPPL, Princeton, NJ, March 2006
191. Department of Applied Mathematics, University of Crete, August 2007
192. Department of Chemical Engineering, University of Rhode Island, November 2007
193. Civil and Environmental Engineering, USC, Los Angeles, January 2008
194. AFOSR, Washington D.C., March 2008
195. Mechanical Engineering, University of Illinois, April 2008
196. Theoretical and Applied Mechanics, Cornell University, April 2008
197. Computer Science, Carnegie Mellon University, May 2008
198. Physics, Dalhousie University, Halifax, Canada, May 2008

199. OCIAM, Oxford University, Oxford, England, May 2008
200. Mechanical Engineering, Princeton University, October 2008
201. Mathematics, Physics and Astronomy, Michigan State U., November 2008
202. Mathematics, Iowa State University, Ames, December 2008
203. Electrical Engineering, University of Pennsylvania, Philadelphia, April 2009
204. Physics Department, PCTS, Princeton University, November 2009
205. Theoretical Division, Los Alamos National Lab, December 2009
206. Renyi Institute, Hungarian Academy of Sciences, Budapest, March 2010
207. Department of Chemical Engineering, Johns Hopkins, March 2010
208. Pacific Northwest National Laboratory, Washington State, May 2010
209. Inaugural invited talk, Center for Dynamical Systems,Department of Mathematics, TU Dresden, Dresden, Germany, November 2010
210. National Science Foundation, Washington DC, April 2011
211. Numerica, Fort Collins, Colorado, April 2011
212. Department of Mathematics, University of Paderborn, Germany, June 2011
213. Department of Chemical Engineering, Kyoto University, September 2011
214. Department of Chemical Engineering, NJIT, Newark, NJ, November 2011
215. Bristol-Myers-Squibb, New Brunswick, NJ, December 2011
216. Gutzwiller Colloquium, MPIPKS, Dresden, December 2011
217. PTB, Berlin, December 2011
218. PICScie, Princeton University, March 2012
219. Mathematics Department, University of Delaware, April 2012
220. Applied Mathematics, University of Washington, May 2012
221. Pacific Northwest National Lab, May 2012
222. Physical Sciences in Oncology Center (PSOC), USC, Los Angeles, September 2012
223. Department of Chemical Engineering, University of Virginia, Charllottesville, October 2012
224. Department of Sociology, Princeton University, Princeton, NJ, December 2012
225. Isaac Newton Institute, Unversity of Cambridge, England, June 2013
226. Microsoft Research Center, Cambridge, England, August 2013
227. Department of Computer Science, U. Leuven, December 2013
228. Department of Chemistry, ULB, Brussels, December 2013
229. Department of Mechanical Engineering, MIT, April 2014
230. Department of Mechanical Engineering, UCSB, April 2014
231. Department of Mathematics, Koc University, Istanbul, July 2014
232. Department of Applied Mathematics, Brown University, October 2014
233. Department of Chemical Engineering, University of Pennsylvania, February 2015
234. School of Mathematics, University of Patras, Summer School on Complex Systems, Four hours of lectures, July 2015
235. Institute for Advance Study, Technical University, Munich, October 2015
236. University of Connecticut, Storrs, CT, February 2016
237. University of Houston, Payatakes lecture, Houston TX April 2016
238. Annual Meeting, Institute for Advance Study, Technical University of Munich, Munich, April 2016
239. Departmental Seminar, Applied Mathematics, Brown University, Spring 2016
240. Departmental Seminar, Applied Mathematics, Duke University, December 2016
241. Seminar, AIMDYN, Darpa meeting, Santa Barbara, November 2016
242. Seminar, Chemical Engineering, Carnegie Mellon University, April 2017
243. Seminar, Siemens, Munich, Germany, July 2017
244. Seminar, Engineering, Georgia Tech, September 2017

245. Seminar, IPST, University of Maryland, September 2017
246. Seminar, Chemical Engineering, Johns Hopkins, October 2017
247. Seminar, Data Science Program, Johns Hopkins, October 2017
248. Seminar, Applied Mathematics, Northwestern University, November 2017
249. Seminar, Sendyne Co., New York, NY, December 2017
250. Seminar, Mathematics, Clarkson University, March 2018
251. Seminar, Applied Physics Laboratory, Johns Hopkins, April 2018
252. Seminar, School of Chemical Engineering, Athens, Greece, August 2018
253. Seminar, Applied Mathematics, Cornell University, September 2018
254. Seminar, Mechanical Engineering, Johns Hopkins, October 2018
255. Seminar, Condensed Matter/Physics Department, Johns Hopkins, November 2018
256. Seminar, Department of Chemical Engineering, NTU Athens, Greece, November 2018
257. Seminar, Physics Department, T. U. Munich, Germany, December 2018
258. Seminar, Sandia National Laboratory, Livermore, California, April 2019
259. Seminar, Department of Chemical Engineering, NTU Athens, Athens, Greece, July 2019
260. Department of Mechanical Engineering, Notre Dame University, South Bend, IN, October 2019
261. Lindsay Lecture, Department of Chemical Engineering, Texas A&M University, College Station, TX, November 2019
262. Seminar, Department of Chemical Engineering, Stony Brook University, NY, November 2019
263. Seminar, School of Applied Mathematics, Brown University, Providence, RI, December 2019
264. Seminar, Department of Chemical Engineering, University of Aachen, December 2019
265. Seminar, Department of Mathematics, University of Arizona, Spring 2020
266. Seminar, Department of Physics, University of Leipzig, April 2021
267. Seminar, Department of Electrical Engineering, University of California/Irvine, May 2021
268. Seminar, Applied Mathematics and Numerical Analysis, University of Napoli, Napoli, Italy, May 2021
269. Seminar, Department of Chemical Engineering, University of Pennsylvania, Philadelphia, PA September 2021
270. Seminar, Department of Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT, December 2021
271. Seminar, PREMIERE project, Imperial College, London, England, December 2021
272. Keller Colloquium, Applied Mathematics, Caltech, January 2022