## **Published Papers**

- **"What Trends in Social Media: Persistence and Decay",** (with L. Yu and S. Asur), *Proceedings of the 5<sup>th</sup> International Conference on Weblogs and Social Media (ICWSM)* (2011).
- **"What Trends in Chinese Social Media",** (with L. Yu and S. Asur), *Proceedings of the 5<sup>th</sup> Workshop on Social Network Mining and Analysis, 17<sup>th</sup> ACM SIGKDD* (2011).
- "Influence and Passivity in Social Media", (with D. M. Romero, W. Galuba and S. Asur), Proceedings of the 20<sup>th</sup> Internatinal Conference on World Wide Web \*(WWW) (2011).
- "Human Speed-Accuracy Tradeoffs in Search", (with C. Aperjis and F. Wu), Proceedings of the 44th Hawaii International Conference on System Sciences (2011).
- "Everything as a Service: Powering the New Information Economy", (with P. Banerjee, C. Bash, P. Goldsack, J. Manley, C. Patel, P. Ranganathan and A. Vetich), *IEEE Computer, Article 1, March* (2011).
- "Opinion Formation under Costly Expression", (with F. Wu), ACM Transactions on Intelligent Systems and Technology, Vol. 1,No. 1,Article 5 (2010).
- "Predicting the Future with Social Media", (with S. Asur), *Proceedings of the ACM Conference on Web Intelligence* (2010).
- "Fluctuating Efforts and Interdependencies in Collaborative Work" (with D. Wilkinson), *Group Decision and Negotiation* Vol. 19, 169-191 (2010).
- "Global Budgets for Local Recommendations" (with T. Sandholm, H. Ung and C. Aperjis), *Proceedings of the ACM*, *RecSys 2010*, 13-20 (2010).
- "Predicting the Popularity of Online Content" (with G. Szabo), Communications of the ACM, Vol. 53, Number 8, 80-88 (2010).
- "A Persistence Paradox" (with F. Wu), First Monday, [Online], Vol. 15, Number 1-4, (January 4, 2010). http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2776/2427
- "Hierarchical Structure and Search in Complex Organizations" (with J. Mihm, C. Loch, and D. Wilkinson), *Management Science*, Vol. 56, 831-848 (2010).
- "Feeback Loops of Attention in Peer Production" (with F. Wu and D. Wilkinson), *Proceedings of SocialCom-09: The 2009 International Conference on Social Computing*, (2009).

- "Crowdsourcing, Attention and Productivity" (with D. Romero and Fang Wu), *Journal of Information Science*, Vol. 35, 758-765 (2009).
- "Social Networks that Matter: Twitter under the Microscope" (with D. Romero and Fang Wu), First Monday, [Online], Vol. 14, Number 1, (January 5, 2009). http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2317/2063
- "How Public Opinion Forms" (with Fang Wu), *Internet and Network Economics*, C. Papadimitriou and S. Zhang (Eds). Springer. 334-341, (2008).
- "Crowdsourcing and Attention", IEEE Computer, Vol. 41. 103-405, (2008).
- "Message from the heavens may be that there is no message", *Nature*, Vol. 455, 27 (2008).
- "The Economics of Attention: Maximizing User Value in Information-Rich Environments" (with F. Wu), Advances in Complex Systems, Vol. 11. 487-496, (2008)
- "Popularity, Novelty and Attention" (with F. Wu), *Proceedings of the 2008 ACM Conference on Electronic Commerce*, 240-245, (2008).
- "Truth-Telling Reservations" (with F.Wu and L. Zhang), *Algorithmica*, Vol. 52, 65-79, (2008).
- "Comparative Advantage and Efficient Advertising in the Attention Economy" (with Fang Wu). Proceedings of the 22nd European Conference on Operational Research (EURO XXII) (2007).
- "Novelty and Collective Attention" (with F. Wu), *Proc. Natl. Acad. Sci (USA)*, Vol. 104, 17599-17601, (2007).
- "Assessing the Value of Cooperation in Wikipedia" (with D. Wilkinson), *First Monday*, April (2007).
- "Rhythms of Social Interaction: Messaging within a Massive Online Network" (with S. Golder and D. Wilkinson), *3rd International Conference on Communities and Technologies (CT2007).* East Lansing, MI. June 28-30, (2007).
- "The Dynamics of Viral Marketing" (with J. Leskovec and L. Adamic), ACM Transactions on the Web, Vol. 1, 5 (2007).
- "Usage Patterns of Collaborative Tagging Systems" (with S. Golder), *Journal of Information Science*. Vol. 32. 198-208, (2006).
- "Ensuring Trust in One Time Exchanges: solving the QoS Problem" (with F. Wu and L. Zhang), *Netnomics*. Vol. 7. 27-37, (2005).

- "Scalable Online Discussions as Listening Technology" (with B. Faieta and P. Verhaeghe), *Proceedings of the 39<sup>th</sup> Annual Hawaii International Conference on System Sciences (HICSS'06)* Track 1. P. 15c. (2006).
- "Tycoon: an implementation of a distributed, market-based resource allocation system" (with K. Lai, L. Rasmusson, E. Adar and L. Zhang), in *Multiagent and Grid Systems*, Vol. 1, 169-182 (2005).
- "Performance Variability and Project Dynamics" (with D. Wilkinson), Computational and Mathematical Organization Theory, Vol. 11, 307-332 (2005).
- "Valuating Privacy" (with E. Adar and L. Fine), *IEEE Security and Privacy*, Sept/Oct. issue, 22-25 (2005).
- "Protecting Privacy of Human Subjects" (with T. Hogg), Science Vol. 307, pp. 1200-1201 (2005).
- "Information Dynamics in the Networked world" (with L.Adamic), in *Complex Networks*, E. Ben-Naim, H. Frauenfelder and Z. Toroczkai eds. 371-395, Springer (2004).
- "Internet congestion: a laboratory experiment" (with D. Friedman), *Proceedings of the ACM SIGCOMM 2004 Workshops*, ACM Press, NY 177-182 (2004).
- "Quantum Solution of Coordination Problems" (with Tad Hogg), *Quantum Information Processing*, **2**, 421-432 (2004).
- "Eliminating Public Knowledge Biases in Information-Aggregation Mechanisms" (with Kay-Yut Chen and Leslie R. Fine), *Management Science* **50**, 983-994 (2004).
- "Finding Communities in Linear Time: a Physics Approach" (with Fang Wu), Eur. Phys. Journal **B38**, 331-338 (2004).
- "Information Flow in Social Groups" (with Fang Wu and Lada Adamic), *Physica A*, Vol 337, 327-335 (2004).
- **"A Method for Finding Communities of Related Genes"** (with D. Wilkinson), *Proc. Natl. Acad. Sci. USA*, Vol 10, 1073 (2004).
- "Status as a Valued Resource" (with C. Loch and A. Onculer). Social Psychology Quarterly, Vol 67(1), 103-114 (2004).
- "The Dynamics of Reputations" (with F. Wu), Computing in Economics and Finance, Vol. 18, (2003).

- "Email as Spectroscopy: Automated Discovery of Community Structure within Organizations" (with J. Tyler and D. Wilkinson), in *Communities and Technologies*, M. Huysman, E. Wegner and V. Wulf, eds/ Kluwer Academic. (2003).
- "Competitive Dynamics of Web Sites" (with Sebastian Maurer), *Journal of Economic Dynamics and Control*, Vol. 27, 2195-2206 (2003).
- "Predicting the Future" (with Kay-Yut Chen and Leslie Fine), *Information Systems Frontiers*, Vol. 5, 47-61 (2003).
- "Local Search in Unstructured Networks" (with L. Adamic and R. Lukose) in *Handbook of Graphs and Networks: From the Genome to the Internet*. Edited by Stefan Bornholdt and Heinz G. Schuster. Wiley 2002.
- "Zipf's Law and the Internet", (with L. Adamic), Glottometrics, Vol. 3, 143 (2002).
- "Protecting Privacy while Revealing Data", (with T. Hogg), *Nature Biotech*, Vol. 20, 332 (2002).
- "A literature based method for Identifying Gene-Disease Connections" (with L . Adamic, D. Wilkinson and E. Adar), *IEEE Computer Society Bioinformatics Conference*, August, 2002.
- "The Web's Hidden Order", (with L. Adamic), Communications of the ACM, Vol. 44, 55 (2001).
- "Portfolios of Quantum Algorithms", (with S. Maurer, and T. Hogg), *Physical Review Letters* **87**, 257901 (2001).
- "Search in Power Law Networks", (with L. A. Adamic, R. Lukose, and A. Puniyani). *Phys. Rev.* **E64**, 46135-46143 (2001).
- "A Market for Secrets" (with E. Adar), *First Monday*, Vol. 6, October 2001, http://www.firstmonday.org/issues/issue6 8/adar/index.html
- "Forecasting Uncertain Events with Small Groups", (with Kay-Yut Chen and Leslie Fine), *Proceedings of the*  $3^{rd}$  *ACM Conference on e-commerce*, 58-64 (2001).
- "Using Unsuccessful Auction Bids to Identify Latent Demand" (with T. Hogg and A. Swami), *Proceedings of the IEEE 2001 Conf. on Systems, Man and Cybernetics*, 2911-2916 (2001).
- "Restart Strategies and Internet Congestion", (with S. Maurer), *Journal of Economic Dynamics and Control*, **25**, 641 (2001).
- "The Instability of Markets", (with T. Hogg and M. Youssefmir), in *Cycles, Growth and Structural Change: Theories and Empirical Evidence*, L. F. Punzo, editor, 219-228

Routledge (2001).

- "The Dynamics of Organizational Learning", Computational and Mathematical Organization Theory 7, 145-153 (2001).
- "Multi-Dimensional Status Competition and Group Performance", (with C. Loch and S. Ulku), in *Dynamics of Organizations*, A. Lomi and E.R. Larsen editors, 119-140, MIT Press (2001).
- "Multiagent Cooperative Search for Portfolio Selection", (with D. Parkes), *Games and Economic Behavior*. Vol. 35, 124-165, (2001).
- "A Methodology for Managing Risk in Electronic Transactions over the Internet", (with R. M. Lukose), *Netnomics* **2**, 25-36 (2000).
- "Status Competition and the Performance of Work Groups", (with C. Loch, S. Stout), *Journal of Economic Behavior and Organizations*, Vol. 43, 35-55 (2000).
- "Power-Law Distribution of the World Wide Web". (with L. A. Adamic), *Science*, **287**: 2115 (2000).
- "Optimizing Traffic in Virtual and Real Space", (with D. Helbing and S. M. Maurer), in *Traffic Flow and Granular Flow* '99, D. Helbing, H. J. Herrmann, M. Schreckenberg and D. E. Wolf, Editors, 193-204 Springer, (2000).
- "Economic Modeling and the World Wide Web", (with R. M. Lukose) in *Artificial Societies and Computational Markets* (MIT Press), ed. Karakoulas, G., in press.
- "The Nature of Markets in the World Wide Web", (with L. A. Adamic), *Quarterly Journal of Electronic Commerce* 1, 5-12 (2000).
- "Free Riding on Gnutella", (with E. Adar), *FirstMonday*, October, (2000). <a href="http://www.firstmonday.dk">http://www.firstmonday.dk</a>
- "The Economics of Surfing", (with E. Adar), *Quarterly Journal of Electronic Commerce*, Vol. 1, 203-214 (2000).
- "Enhancing Privacy and Trust in Electronic Communities", (with M.Franklin and T. Hogg), *Proceedings of the ACM Conference on Electronic Commerce*, 78-80 (1999).
- "A Punctuated Equilibrium Model of Technology Diffusion", (with C. Loch), *Management Science*, 45, 160-177 (1999).
- "Economics-Based Optimization of Unstable Flow", (with D. Helbing), *Europhys. Lett.* 47, 196-202 (1999).

- "Evolutionary Dynamics of the World Wide Web", (with L. A. Adamic), *Nature* 401, 131 (1999).
- "Coherent Moving States in Highway Traffic", (with D. Helbing), *Nature*, 396, 738-740 (1998).
- "Traffic Jams on the Internet", (with R. M. Lukose), Science 280, 179f (1998).
- "Computation as Economics", J. Economic Dynamics and Control, 22, 1169-1186 (1998).
- "Strong Regularities in World Wide Web Surfing", (with P. Pirolli, J. Pitkow and R. M. Lukose), *Science*, 280, 95 (1998).
- "Bubbles and Market Crashes", (with M. Youssefmir, and T. Hogg), *Computational Economics*, 12, 97-114 (1998).
- "Controlling Smart Matter", (with T. Hogg), Smart Mater. Struct. 7, R1-R14 (1998).
- "Pattern Control in Unstable Structures" (with O. Guenther and T. Hogg), *Proc. of SPIE Conf. on Smart Structures and Materials*, V. V. Varadan editor, 436--445, (1998).
- "Clustered Volatility in Multiagent Dynamics", (with M. Youssefmir), *Journal of Economic Behavior and Organization*, 914, 1 (1997).
- "Social Dilemmas and Internet Congestion", (with R. M. Lukose), *Science*, 277, 535, (1997).
- "Market Organizations for Controlling Smart Matter", (with O. Guenther and T. Hogg), in Simulating Social Phenomena, R. Conte, R. Hegselmann and P. Terna, Eds. Lecture Notes in Economics and Mathematical Systems, Springer 241--257. (1997).
- "Controls for Unstable Structures", (with O. Guenther and T. Hogg), *Proceedings of the SPIE Conference on Smart Structures and Materials*, Volume 3039, 754--763 (1997).
- "Expectations and Social Outcomes", (with N. Glance), in *Time, Process and Structured Transformations*, edited by Sander van der Leew and James McGlade, Routledge Publishing, London, 118--141, (1997).
- "Training and Turnover in Evolving Organizations", (with N. S. Glance and T. Hogg), *Org. Science* 8, 84 (1997)
- "An Economics Approach to Hard Computational Problems", (with R. Lukose and T. Hogg), *Science*, 275, 51--54 (1997).

- "Beehive: A System for Cooperative Filtering and Sharing of Information", (with M. Kaminski). *PARC Report* (1997).
- "The Power of Cooperation", in *Granada Lectures in Computational Physics*, edited by P. L. Garrido, Springer (1996), 55-81.
- "Beliefs and Cooperation", (with.N. S. Glance), in: *Modelling Rational and Moral Agents*, edited by Peter Danielson, Oxford University Press, (1996), 210-235.
- "Collaboration, Motivation and the Size of Organizations", (with C. H. Loch), *Journal of Organizational Computing*, 6, 109--130 (1996).
- "The Social Mind", in *Origins of the Human Brain*, J-P. Changeux and J. Chavaillon, editors. Oxford University Press, 1995.
- "The Dynamics of Collective Action", (with N. S. Glance), *Computational Economics*, 8, 27 (1995).
- "Distributed Computation as an Economic System", (with T. Hogg), *Journal of Economic Perspectives*, 9, 141 (1995).
- "Formation en entreprise et debauchage de main-d'oeuvre aus Etats-Unis: Un modele dynamique d'action collective", (with E. Caroli and N. Glance). *Revue Economique*, 46, No. 3, 807 (1995).
- **"Phase Transitions and the Search Problem",** (with T. Hogg and C. Willams). *Artificial Intelligence Journal*, 81, 101--115 (1995).
- "Communities of Practice: Performance and Evolution", (with T. Hogg), Computational and Mathematical Organization Theory, Vol. 1, 73-92 (1995).
- "Training and Turnover in Organizations", (with N. Glance and T. Hogg), *AAAI Workshop on Computational Organization Design*, Stanford, (1994).
- "Thermal Markets for Controlling Building Environments", (with S. Clearwater), *Energy Engineering*, 91, 26--56 (1994)
- "**Dynamics of Social Dilemmas**", (with N. Glance), *Scientific American*, pp. 76--84, March (1994).
- "Social Dilemmas and Fluid Organizations", (with N. Glance), in *Computational Organization Theory*, M Prietula and K. Carley, eds. Erlsbaum Publishing, 217--240, (1994).
- "The Outbreak of Cooperation", (with N. Glance), *Journal of Mathematical Sociology*, 17, 281 (1993).

- "Evolutionary Games and Computer Simulations", (with N. Glance), *Proc. Natl. Acad. Sci.* (USA), 90, 7716 (1993).
- "Diversity and Collective Action", (with N. S. Glance), in *Interdisciplinary Approaches to Nonlinear Systems*, Eds. H. Haken and A. Mikhailov, Springer, 1993
- "Better than the Best: The Power of Cooperation", (with T. Hogg), in: 1992 Lectures in Complex Systems, L. Nadel and D. L. Stein editors, 163, Addison Wesley (1993).
- "The Emergence of Computational Ecologies", (with T. Hogg), in: 1992 Lectures in Complex Systems, L. Nadel and D. L. Stein editors, 185, Addison Wesley (1993).
- "The Control of Chaos", in *Condensed Matter Theories*, Vol. 7, A. N. Proto and J. L. Aliaga, editors, 23, Plenum N. Y. (1992).
- "Binding Hierarchies: A Basis for Dynamical Perceptual Groupings", (with E. Lumer), *Neural Computation* 4, 341,(1992).
- "An Associationist Model of the Paranoid Process: Application of Phase Transitions in Spreading Activation Networks", (with S. Vinogradov and R. J. King), *Psychiatry* 55, 79 (1992).
- "Josephson Junctions with Delayed Feedback", (with N. Gronbech-Jensen, J. A. Blackburn and H. J. T. Smith), *Phys. Lett.* A172, 131 (1992)
- "Spawn: A Distributed Computational Economy", (with C. A. Waldspurger, T. Hogg, J. O. Kephart and W. S. Stornetta), *IEEE Transactions on Software Engineering* 18, 103, (1992).
- "Can Predictive Agents Prevent Chaos?" (with J. O. Kephart, and T. Hogg), in Economics and Cognitive Science, P. Bourgine and B. Walliser, eds. pp. 41--55, Pergamon Press, Oxford (1992)
- "Chaos, Qualitative Reasoning, and the Predictability Problem, in Recent Advances in Qualitative Physics", (with B. Faltings and P. Struss, editors), MIT press (1992), pages 119--136.
- "Computation: the Micro and the Macro View". World Scientific Publishing (1992).
- "The Value of Cooperation", in *Artificial Intelligence in Organization and Management Theory*, M. Masuch and M. Warglien, editors, North-Holland, 1992, pages 235--245.
- "Cooperative Problem Solving", (with S. H. Clearwater and T. Hogg), in: *Computation: the Micro and the Macro View*, B. A. Huberman,

- editor, 33, World Scientific Publishing (1992).
- "Dynamics with Expectations", (with N. Glance), *Physics Letters* A165, 432 (1992).
- "Cooperative Solution of Constraint Satisfaction Problems", (with S. H. Clearwater and T. Hogg), *Science*, 254, 1181 (1991).
- "Hierarchical Dynamics in Large Assemblies of Interacting Oscillators", (with E. Lumer), *Physics Letters* A160, 227 (1991)
- "Achieving Global Stability Through Local Controls", (with T. Hogg), *Proceedings* of the 1991 IEEE International Symposium on Intelligent Control, IEEE Control Systems Society 91CH3019--7, 67 (1991).
- "Predicting Sunspots and Exchange Rates with Connectionist Networks", (with A. S. Weigend and D. E. Rumelhart), in *Nonlinear Modelling and Forecasting, SFI Studies in the Sciences of Complexity*, Proc. Vol. XII, Eds. M. Casdagli and S. Eubank, Addison-Wesley, 1991, 1--37.
- "Controlling Chaos in Distributed Systems", (with T. Hogg), *IEEE Transactions on Systems, Man and Cybernetics*, 21, 1325 (1991)
- "Computational Ecosystems in a Changing Environment", (with N. Glance, and T. Hogg), *International Journal of Modern Physics* C2, 735. (1991).
- "Scaling Theory for Fault Stealing Algorithms in Large Systolic Arrays", (with W. S. Stornetta and T. Hogg), *IEEE Transactions on Computer-Aided Design*, 9, 290 (1990).
- "The Performance of Cooperative Processes", *Physica* D42, 38 (1990).
- "Collective Behavior of Predictive Agents", (with J. O. Kephart and T. Hogg), *Physica* D42, 48 (1990).
- "Phase Transitions in Spreading Activation Networks: an application to an associationist model of paranoia", (with S. Vinogradov, R. J. King and J. D. Cohen), *Actualites Psychiatriques*, No. 5, 44, (1990).
- "Predicting the Future: A Connectionist Approach", (with A. Weigend and D. Rumelhart), *Intl. Journal of Neural Systems*, 1, 193 (1990).
- "Back-Propagation, Weight-Elimination and Time Series Prediction", (with A S. Weigend and D. E. Rumelhart), *Proceedings of the 1990 Connectionist Models Summer School*, edited by D. S. Touretzky, J. L. Elman, T. J. Sejnowski, and G. E. Hinton, Morgan Kaufman (1990).

- "Dynamics of Adaptive Systems", (with E. Lumer), *IEEE Transactions on Circuits and Systems* 37, 547. (1990).
- "Parallel Computation", Computer Phys. Comm. 56, 25 (1989).
- "Persistence of Non-optimal Strategies" (with H. A. Ceccatto), *Proc. Natl Acad. Sci.* (USA), 86, 3443 (1989).
- "Dynamics of Computational Ecosystems", (with J. O. Kephart and T. Hogg), Phys. Rev. A40, 404 (1989).
- "The Stability of Ecosystems", (with T. Hogg and J. M. McGlade), Proc. Roy. Lond. B237, 43-51 (1989).
- "The Collective Brain", Intl. Journal of Neural Systems 1, 41 (1989).
- "The Adaptation of Complex Systems", in: *Theoretical Biology: Epigenetic and Evolutionary Order from Complex Systems*: B. Goodwin and P. Saunders, eds. Edinburgh University Press, 124 (1989).
- "Dynamics of Computational Ecosystems: Implications for Distributed Artificial Intelligence", (with J. O. Kephart and T. Hogg), in *Distributed Artificial Intelligence*: Volume II; Les Gasser and Michael N. Huhns, eds. Morgan Kauffman Publishers, 79 (1989).
- "Dynamics and Phase Transitions in Artificial Intelligence Systems", in: *Structure, Coherence and Chaos in Dynamical Systems*, P. L. Christiansen and R. D. Parmentier, eds. Manchester University Press, 199 (1989).
- "Sudden Insights During Learning", (with T. Hogg), in *Proceedings of AAAI Symposium on Parallel Models of Intelligence*, 22-24 March (1989), pp. 139-140.
- "The Complexity of Hierarchical Systems", (with H. A. Ceccatto), *Physica Scripta* 37, 145 (1988).
- "A Dynamical Approach to Temporal Pattern Processing", (with W. S. Stornetta and T. Hogg), in *Neural Information Processing Systems*, Dana Z. Anderson, ed. AIP, 750 (1988).
- "The Behavior of Computational Ecologies", (with T. Hogg), in: *The Ecology of Computation*, B. A. Huberman, Ed. p. 77 North-Holland (1988).
- "The Ecology of Computation", in: *The Ecology of Computation* B. A. Huberman (Ed), p1, North-Holland, (1988).

- "Asynchrony and Concurrency", in: *Neural Computers*, R. Eckmiller and C. v. d. Malsburg, Eds. 455, Springer (1988).
- "Vibrational Spectra of Hierarchical Systems", (with W. P. Keirstead and H. A. Ceccatto), J. Stat. Phys. 53, 733 (1988).
- "Lyapunov Exponent for Quantum Dissipative Systems", (with H. A. Cerdeira and K. Furuya), Physical Review Letters, 61, 2511 (1988).
- "Dynamical Singularities in Ultradiffusion", (with W. P. Keirstead), Phys. Rev A36, 5392 (1987).
- "An Improved Three Layer, Back Propagation Algorithm", (with W. S. Stornetta), *IEEE Proceedings International Conference on Neural Networks*, II-637 (1987).
- "Quantum States of Hierarchical Systems", (with H. A. Ceccatto and W. P. Keirstead), Phys. Rev. A37, 87 (1987).
- "Phase Transitions in Artificial Intelligence Systems", (with T. Hogg), *Artificial Intelligence* 33, 155 (1987).
- "Observation of Phase Transitions in Spreading Activation Networks", (with J. Shrager and T. Hogg), *Science* 236, 1092 (1987).
- "Complexity and Ultradiffusion" (with C. P. Bachas), J. Phys. A20, 4995 (1987).
- "Apparent Randomness in Quantum Dynamics", (with H. A. Cerdeira), Phys. Rev. A36, 1382 (1987).
- "Artificial Intelligence and Large Scale Computation: a Physics Perspective", (with T. Hogg), Physics Reports 156, 227 (1987).
- "Concurrent, Fault-Tolerant Detection of 2D-Motion", (with S. Singer), *PARC GSL report* (1986).
- "Collective Detection of Motion in the Presence of Noise", (with W. Keirstead), Phys. Rev. Lett. 56, 1094 (1986).
- "Transients and Asymptotics in Granular Phase Space", (with W. F. Wolff), Z. Phys. B63, 397 (1986).
- "Order, Complexity and Disorder", (with T. Hogg), in Laws of Nature and Human Conduct, Solvay Institute Symposium, 175 (1986).
- "Complexity and Adaptation", (with T. Hogg), *Physica* 22D, 376 (1986).

- "A Model for Dysfunctions in Smooth Pursuit Eye Movement", Annals of the New York Academy of Science, 504, 260 (1986).
- "Complexity and the Relaxation of Hierarchical Structures", (with C. Bachas), Phys. Rev. Lett. 57, 1965 (1986).
- "Probabilistic Cellular Automata", in *Nonlinear Phenomena in Physics*, F. Claro, (ed.) pp. 129 Springer Proceedings in Physics 3, (1985).
- "Collective Excitations and Retarded Interactions", (with M. Y. Choi), Phys. Rev. B31, 2862 (1985).
- "Ultradiffusion: the Relaxation of Hierarchical Systems", (with M. Kerszberg), J. Phys. A18, L331 (1985).
- "Computing with Attractors", in Emerging Syntheses in Science, Proc. of the Founding Workshops of the Santa Fe Institute, D. Pines (Ed.) (1985).
- "Collective Computation and Self-Repair", Proc. of the Cognitiva 85 Conference, 395, Paris (1985).
- "Dynamics of Computing Structures", *Proc. of the Nobel Symposium on the Physics of Chaos and Related Topics*, Phys. Scripta, T9, 165 (1985).
- "Dynamic Associations in Nonlinear Computing Arrays", (T. Hogg), *Physica Scripta*, 32, 271 (1985).
- "Parallel Computing Structures Capable of Flexible Associations and Recognition of Fuzzy Inputs", (with T. Hogg), J. Stat. Phys. 41, 115 (1985).
- "Attractors on Finite Sets: The Dissipative Dynamics of Computing Structures", (with T. Hogg), Phys. Rev. A32, 2338 (1985).
- "Finite Precision and Transient Behavior", (with W. F. Wolff), Phys. Rev. A32, 3768 (1985).
- "Dynamics of Self-Organization in Complex Adaptive Networks", (with D. d'Humieres), in *Dynamical Systems and Cellular Automata*, J. Demongeot Ed. 187, Pergamon (1985).
- "Exact Results for Multiple State Cellular Automata", (with M. Y. Choi), J. Phys. A17, L765 (1984).
- "Chaotic Behavior in Dopamine Neurodynamics", (with R. King and J Barchas), Proc. Natl. Acad. Sci. 81, 1244 (1984).

- "Generic Behavior of Coupled Oscillators", (with T. Hogg), Phys. Rev. A29, 275 (1984).
- "Dynamics of Self-Organization in Complex Adaptive Networks", (with D. d'Humieres), J. Stat. Phys. 34, 361 (1984).
- "The Nature of Time in Monte Carlo Processes", (with M. Y. Choi), Phys. Rev. B29, 2796 (1984).
- "Adaptation and Self-Repair in Parallel Computing Structures", (with T. Hogg), Phys. Rev. Lett. 52, 1048 (1984).
- "Chaos and the Classical Limit of Quantum Systems", (with T. Hogg), Physica Scripta, 30, 225 (1984).
- "Understanding Biological Computation: Reliable Learning and Recognition", (with T. Hogg), Proc. Natl. Acad. Sci. (USA) 81, 6871 (1984).
- "Chaotic Behavior in Dopamine Neurodynamics" (with R. King, J. Barchas), Proc. Natl. Acad. Sci. (USA) 81, 1244 (1984).
- "A Dynamical Model for the Stick-Slip Behavior of Faults", (with M. Y. Choi), J. Phys. C17, L673 (1984).
- "Quasienergy Spectra of Quantum Dynamical Systems", (with H. A. Cerdeira and E. Z. da Silva), Phys. Rev. A30, 1752 (1984).
- "Digital Dynamics and the Simulation of Magnetic Systems", (with M.Y. Choi), Phys. Rev. A28, 2547 (1983).
- "Theoretical Psycopathology: An Application of Dynamical Systems Theory to Human Behavior", *Synergetics of the Brain*, E. Basar, H. Flohr and A. J. Mandell, eds. Springer pp.352-364 (1983).
- "Mostly Chaos", *Physica* 118A, 323 (1983).
- "Comment on Hopping Mechanism Generating 1/f Noise in Nonlinear Systems", *Physical Review Letters* 50, 1328 (1983).
- "Quantum Dynamics and Nonintegrability", (with T. Hogg), Phys. Rev. A28, 22 (1983).
- "Dynamic Behavior of Nonlinear Networks", (with M. Y. Choi), Phys. Rev. A28, 1204 (1983)

- "Chaotic Phases in Statistical Mechanisms", (with E. Fradkin), Nuclear Physics B215, FS7 (1983) p.137.
- "Quantum Dynamics", in Lecture Notes in Physics, 179, 79 (1982) Springer N.Y.
- "Intermittency: Another route to Chaos", (with D. Scalapino and J. Hirsch), in "Melting, Localization and Chaos", R. K. Kalia and P. Vashishta, ed., Elsevier (1982) p. 243.
- "Recurrence Phenomena in Quantum Dynamics", (with T. Hogg), Phys. Rev. Lett. 48, 711 (1982).
- "Chaos in Josephson Junctions", (with M. Beasley), *Comments in Solid State Physics*, x 155 (1982).
- "Chaotic States and Routes to Chaos in the Forced Pendulum", (with D. d'Humieres, M. R. Beasley and A. Libchaber), *Physical Review* A26, 3483 (1982).
- "Fluctuations and Simple Chaotic Dynamics", (with H.P. Crutchfield and D Farmer), Physics Reports 92, 45 (1982).
- "A Theory of Intermittency", (with S. Hirsch and D. J. Scalapino), Phys. Rev. A25, 519 (1982).
- "Turbulence and Scaling in Solid State Physics", in *Chaos and Order in Nature*, H. Haken, ed., Springer (1981).
- "Power Spectra of Strange Attractors", (with A. Zisook), Phys. Rev. Lett 46, 626 (1981).
- "Long-Time Behavior of Ginsburg-Landau Systems far from Equilibrium", (with E. Coutsias), Phys. Rev. B24, 2592 (1981).
- "Fluctuations and the Onset of Chaos", (with J. Crutchfield), Phys. Lett 77A, 407 (1980).
- "Scaling Behavior of Chaotic Flows", (with J. Rudnick), Phys. Rev. Lett 45, 154 (1980).
- "Noise Phenomena in Jospehson Junctions", (with J. P. Crutchfield and N. Packard), Appl. Phys. Lett. 37, 750 (1980).
- "Theory of Capillary Condensation", (with J. Chalupa), J. Chem. Phys. 72, 5276 (1980).

- "Dislocation Motion and Solid State Turbulence", (with C. Herring), Appl. Phys. Lett. 36, 975 (1980).
- "Superfluid Solitons in Helium Films", Phys. Rev. Lett. 41, 1389 (1980).
- "Superionic Conductors: A Review", (with J. B. Boyce), Physics Reports 51, 189 (1979).
- "Are the Prefactor Anomalies in Superionic Conductors Due to 1-D Effects?" (with J. B. Boyce and J. C. Mikkelsen), *Solid State Commun.* 29, 507 (1979).
- "Topological Excitations in Two-Dimensional Superconductors", (with S. Doniach), Phys. Rev. Lett. 42, 1169 (1979).
- "Surface Rate Processes and Vapor Pressure of Magnetic Solids", (with E. Galleani d'Agliano), Solid State Commun. 32, 1255 (1979).
- "Melting of Two-Dimensional Vortex Lattices", (with S. Doniach), Phys. Rev. Lett. 43, 950 (1979).
- "Chaotic States of Anharmonic Systems in Periodic Fields", (with J. P. Crutchfield), Phys. Rev. Lett. 43, 1743 (1979).
- "Topological Excitations in Thin Film Superconductors: A Review", (with S. Doniach), *AIP Proceedings of the Homogeneous Superconductors Conference*, Berkeley, Springs, W. Va, 58, 87 (1979).
- "Gauge Symmetries in Random Magnetic Systems", (with E. Fradkin and S. Shenker), Phys. Rev. B18, 4789 (1978).
- "Limit Cycles in Double Diffusive Convection", (with W. Streifer), *PARC report* (1979).
- "The Peierls State Far from Equilibrium". (with K. F. Berggren), Phys. Rev. B18, 3369 (1978).
- "Dissipation Near the Critical Point of a Two-Dimensional Superfluid", (with R. J. Myerson, and S. Doniach), Phys. Rev. Lett 40, 780 (1978).
- "Breakdown of Absolute Rate Theory and Prefactor Anomalies in Superionic conductors", (with J. B. Boyce), *Solid State Commun.* 25, 759 (1978).
- "Onset of Superflow in Thin Helium Films", (with J. G. Dash), Phys. Rev. B17, 398 (1978).

- "Onset of an Inhomogeneous State in a Non-Equilibrium Superconducting Film", (with D. J. Scalapino), Phys. Rev. Lett. 39, 1365 (1977).
- "Dynamic Long-Range Forces and Z Branches at Phase Transitions", (with R. M. Martin), Phys. Rev. Lett. 39, 478 (1977).
- "Hydrodynamic Instabilities in Coulomb Fluids", (with W. Streifer), Phys. Rev. Lett. 38, 599 (1977).
- "Screening in the Classical Two-Dimensional Coulomb Gases and the One-Dimensional Fermion Problem", (with H. Gutfreund), J. Phys. C110, L225 (1977).
- "Dielectric Response of the Two-Dimensional Coulomb Gas" (with J. Zittartz), Solid State Comm. 18, 1373 (1976)
- "From Spin Glass to Spin Liquid: Dynamics of a Simple Model", (with A. Aharony), J. Phys. C., Solid State Phys. 9, L465 (1976).
- "Remarks on Phase Transitions and Dynamics in Superionic Conductors", *Superionic Conductors*, G. D. Mahan and W. Roth, eds., Plenum (N.Y.) (1976) 151.
- "Dressed Ion Diffusions and Shake-Off Processes in Superionic Conductors", (with H. Hinkelmann), *Solid State Commun.* 19, 365 (1976).
- "Striations in Chemical Reactions", J. Chem. Phys. 65, 2013 (1976).
- "Low Frequency Response of Superionic Conductors", (with P. N. Sen), Phys. Rev. Lett. 34, 1059 (1975).
- "A Theory of Melting in Liquid Crystals", (with D. Lublin, and S. Doniach), Solid State Commun. 17, 485 (1975).
- "Dielectric Response of a Superionic Conductor", (with P. N. Sen), Phys. Rev. Lett. 33, 1379 (1974).
- "Cooperative Phenomena in Solid Electrolytes", (with P. N. Sen), Phys. Rev. Lett. 32, 1000 (1974).
- "Model for the First Order Phase Transition in MnBi", (with W. Streifer), Appl. Phys. Lett. 24, 147 (1974).
- "Lattice Disorder and Magnetic Phase Transitions", AIP Conference Proceedings 18, 351 (1973).
- "Disorder Induced Magnetic Phase Transititions", Phys. Rev. Lett. 31, 1251 (1973).

- "A New Scheme for Measuring Itinerant Spin Polarizations", (with D. R. Scifres, R. M. White, and R. S. Bauer), *Solid State Commun.* 13, 1615 (1973).
- "Electron Spin Relaxation Measurements by Optical Pumping Techniques", (with D. R. Scifres, and R. D. Burnham), Appl. Phys. Lett. 23, 314 (1973).
- "Properties of an Optically Magnetized Semiconductor", Solid State Commun. 12, 259 (1973).
- "Optically Induced Magnetism in Semiconductors", Proceedings of the 11th Conference on the Physics of Semiconductors 2, 1346 (1972), Warsaw, Poland.
- "Metal Insulator and Magnetic Phase Transitions: A Thermodynamic Model", (with L. M. Falicov and C. E. T. Goncalves de Silva), *Solid State Commun.* 10, 455 (1972).
- "Nature of Coupled Modes in a Ferromagnetic Insulator", (with E. Burstein, and R. Ito), Phys. Rev. B5, 168 (1972).
- "Inelastic Scattering of Acoustic Phonons by Magnons", (with E. Burstein), AIP Conference Proceedings 5, 1350 (1971).
- "Macroscopic Quantum Effects in a Liquid Helium Drop", Phys. Lett. 37A, 225, (1971).
- "Energy of a Tachyon in a Magnetic Field", Phys. Lett.36B, 573 (1971).
- "The Propagation and Attenuation of Acoustic Waves in Ferromagnetic Metals", (with R. Ito, and E. Burstein), J. Phys. Chem. Solids 31, 1719 (1970).