Curriculum Vitae

Stephen D.H. Hsu

Address		Department of Physics University of Oregon Eugene, OR 97403 Phone: (541)-346-5128 Email: hsu@uoregon.edu
Citizenship		United States
Birthdate		July 1966

Education	1991	PhD, Physics, UC Berkeley Thesis advisor: Lawrence J. Hall Thesis: Topics in Particle Physics and Cosmology
	1989	MA, Physics, UC Berkeley
	1986	BS, Physics, California Institute of Technology
Awards and Experience	2011-present	Scientific Advisor, BGI (formerly Beijing Genomics Institute)
	2011-present	Director, Institute of Theoretical Science, U Oregon
	2010-11	Visiting Professor, Academia Sinica (Taiwan) National Science Council Fellow
	1998-present	Professor of Physics, University of Oregon
	2005-2011	Co-founder and Chairman, Robot Genius, Inc.
	2000-2003	Co-founder, CEO and Chairman, SafeWeb, Inc.
	1999	JSPS (Japan Soc. Promotion Science) Visiting Fellow
	1995-1997	Assistant Professor, Yale University
	1993	SSC Fellowship (Dept. of Energy)
	1991-1994	Junior Fellow, Harvard Society of Fellows
	1990	Ettore Majorana, School of Subnuclear physics: 'Best Student' Prize, Dirac Prize
	1988-1991	U.S. DOE Graduate Fellowship
	1988-1991	Victor E. Lenzen Scholarship, Dept. of Physics, UC Berkeley
	1985-1986	Carnation Prize Fellowship, California Institute of Technology

Research Interests

Theoretical physics: I am interested in applications of quantum field theory to problems which are either accessible to experimental tests in the foreseeable future, or help to illuminate qualitative features of physically motivated models.

Specific topics of recent interest: quantum chromodynamics, dark energy, black holes, entropy bounds and quantum information, particle physics beyond the standard model. (See publications list below.)

Information technology: I am interested in encryption and internet security technologies. In 2000 I co-founded SafeWeb, a pioneer in SSL VPN appliances, acquired by Symantec in 2003. I was also co-founder and Chairman of the board of directors of Robot Genius, Inc., an Oakland-based information security startup.

I also occasionally work in the theory of modern finance. I am interested in options pricing, volatility, behavioral finance, market efficiency.

Grant Support: I am a co-PI with professors Deshpande and Soper on the US Department of Energy grant supporting high energy physics research at the University of Oregon (Task A, Theoretical Physics). This grant is funded at approximately $400k per annum. During my time at Oregon our total DOE funding has been about $4 million dollars. I have also received smaller grants from NSF and private foundations.

Outside Activities: information technology, internet security, encryption and finance

Presentation on Internet security, encryption and packet routing, U.S. Central Intelligence Agency, Langley, VA, 2000.

Presentation on Internet censorship in China, U.S. Voice of America and International Broadcasting Bureau, Washington, DC, June 2001.

Testimony before Committee on Energy and Commerce, U.S. House of Representatives, hearings on Information Privacy: Industry Best Practices and Technological Solutions, Subcommittee on Commerce, Trade, and Consumer Protection, June 21, 2001.

DEFCON 9 invited talk. DEFCON is the world's largest hacker and computer security convention. **IP Spoofing and Strong Encryption in Service of a Free Internet**. Las Vegas, NV, July 13, 2001.

Testimony before U.S.-China Security Review Commission (USCC), a permanent Congressional commission established to study strategic and technological aspects of U.S.-China relations, January 18, 2002.

Invited talk at the conference Information Dynamics in the Networked Society, sponsored by HP Labs, Palo Alto. **Internet Privacy and Security: A Startup's Perspective**, April 5, 2002. Published in the journal *Information Systems Frontiers*.

Presentation on the Internet and China, PIMCO (Pacific Investment Management Corporation, the world's largest manager of fixed income investments and a division of Allianz financial group), May 17, 2002.

Guest editorial on the Internet and China, South China Morning Post, October 2, 2002.

Invited talk at Tsinghua University, Beijing, Center for Advanced Studies, **Internet Security for Physicists**, September 17, 2003.

Invited talk to Caltech Entrepreneurs Club, **Insider's Guide to Startups**, Caltech, May 14, 2004.

Invited talk to Society of Physics Students, UC Berkeley, **Physicists' Guide to Startups**, Berkeley, Sept. 15, 2004.

Lecture on entrepreneurship and technology startups, Lundquist School of Business, University of Oregon, 2006.

Colloquium on technology startups, Department of Computer Science, McGill University, Canada.

Foo Camp, O'Reilly Media, Sebastapol CA, June 2007, 2008, 2010, 2011. Invitation-only meeting of technology leaders.

Lecture on entrepreneurship and technology startups, Lab2Market workshop, Portland OR (NSF-sponsored entrepreneurship program), August 2007.

SciFoo, Googleplex, Mountain View CA, 2008 and 2010. Invitation-only science and technology meeting, sponsored by Google, Nature and O'Reilly Media.

Podcast interview on the financial crisis, IBM Building a Smarter Planet series January 2009.

Media interviews: The Wall Street Journal, The New York Times, The Economist, Time Magazine, CNN, BBC, CNBC, Business2.0, WIRED, San Francisco Chronicle, Los Angeles Times, Washington Post, Fortune Magazine, Far Eastern Economic Review, South China Morning Post, Fox News, InfoWorld, NetworkWorld, Chronicle of Higher Education, New Scientist, BBC Science, Science, Sky and Telescope, Marketplace (public radio).

Technical presentations (information security, networks): CheckPoint Security, Cisco Systems, Symantec, McAfee, Google, Microsoft, AOL, ATT, British Telecom, Sprint, Juniper Networks, Yahoo, US Central Intelligence Agency, Earthlink.

Venture Capital presentations: Accel Ventures, Alloy Ventures, Crescendo Ventures, Light-Speed Ventures, Polaris Ventures, Sierra Ventures, Trinity Ventures, Morgan Stanley Ventures, Goldman-Sachs Ventures, Doll Capital Management, Morgenthaler Ventures, Maveron Ventures, In-Q-Tel Ventures, Kingdon Capital Management, Chilton Investments, Siemens Venture Capital, Venio Capital Management, Opus Capital, O'Reilly Advanced Technology Ventures.

Blogging: Since 2004 I have maintained a web log (blog) at http://infoproc.blogspot.com

Content from my blog has been syndicated on the financial news site SeekingAlpha.com, and most recently by MIT Technology Review, which pays me a monthly fee.

Each new post is read by thousands of readers around the world.

Media coverage of physics research

How to make a black hole that stands the test of time, New Scientist, 11 August 2010

Why Don't We See White Holes in Space? Discovery News, Aug 16, 2010

Mammoth black holes push universe to its doom, September 30, 2009, New Scientist

The Day the Universe Froze, May 8, 2009, Exploration, the Vanderbilt research magazine.

Fuzziness on the road to physics' grand unification theory, October 6, 2008, UO News.

'Monsters' blamed for extreme chaos in black holes 18 January 2008, New Scientist.

Universe explained by quantum randomness, October 3, 2007, New Scientist magazine.

Scientists Propose Looking for Big Bang Messages, Richard Harris, All Things Considered, NPR, October 7, 2006.

Creator's Message, 28 January 2006, New Scientist magazine

A Creator's Possible Calling Card, December 2005, Sky and Telescope magazine

Cosmic Bulletin Board, December 2005, Science

Message in the Sky, November 2005, Seed magazine

Wormhole wanderers face a deadly dilemma, 24 May 2005 NewScientist.com news service

Wormhole 'no use' for time travel, 23 May 2005, BBC Science

The smallest measurable length announced, 27 November 2004, New Scientist print edition

Invited physics research seminars and colloquia

U.S. universities: Harvard University, MIT, Columbia University, Yale University, Brown University, Cornell University, Carnegie-Mellon University, University of Pittsburgh, Boston University, Johns Hopkins University, Northeastern University, University of Michigan, Michigan State University, Duke University, UNC-Chapel Hill, University of Florida, LSU, University of Chicago, University of Wisconsin, University of Washington, University of Oregon, UCLA, Caltech (physics department), Caltech Institute of Quantum Information, UCSB, UC Berkeley, University of Kansas, Washington University, St. Louis, University of Illinois at Chicago, Vanderbilt University

U.S. institutes and laboratories: Fermi National Accelerator Laboratory (Fermilab), Stanford Linear Accelerator Center (SLAC), Lawrence Berkeley National Laboratory (LBNL), Brookhaven National Laboratory (BNL), NSF Institute for Nuclear Theory, Kavli Institute for Theoretical Physics, RIKEN Institute (BNL)

Foreign institutions: CERN (Conseil Europeen pour le Recherche Nucleaire), Niels Bohr Institute (Copenhagen), NORDITA (Copenhagen), McGill University (computer science and

physics departments, Canada), Tsinghua University (Beijing), Institute for High Energy Physics, Chinese Academy of Sciences (Beijing), Korea Institute of Advanced Study (Seoul), Hanyang University (Seoul), Pusan National University (Pusan, Korea), Kyoto University, National Laboratory of High Energy Physics (KEK, Japan), Tokyo Metropolitan University, National Taiwan University, Tsinghua University (Hsinchu, Taiwan), Asia Pacific Center for Theoretical Physics (APCTP, Seoul), Benasque Center for Physics (Spain), Isaac Newton Institute for Mathematical Sciences (Visiting Fellow, Cambridge, UK), Insitute Henri Poincare (Paris, France), ECT Trento (European Center for Nuclear Theory, Italy), Perimeter Institute (Canada), Academia Sinica Institute of Physics (Taiwan), Shanghai Jiao Tong University, Institute for Theoretical Physics, Chinese Academy of Sciences (Beijing), KITP Beijing, Zhejiang University (PRC), ECT Trento (Italy).

Technology Startups

In 2000 I co-founded SafeWeb, Inc., a software company that developed one of the first SSL VPN appliances. An SSL VPN creates an encrypted network layered over the public internet, to which a user can connect using an ordinary web browser. This product segment has grown to a nearly $1 billion per annum market in enterprise security. As CEO and Chairman of SafeWeb, I raised over $10 million in venture capital and supervised both business and technology development. I had responsibility for 35 engineers and business and sales professionals, including a dozen PhDs in physics and computer science from top universities such as Yale, Carnegie Mellon and Berkeley. I am also an inventor on all of SafeWeb's patent filings. SafeWeb has been covered by The New York Times, The Wall Street Journal, The Economist, Business 2.0, WIRED, Caltech News and CNN, among other publications. One of our investors was In-Q-Tel, the CIA venture fund, and our technologies have been licensed for use by the CIA in internal applications, as well as by the U.S. Voice of America agency to defeat foreign government censorship of the Internet. In 2001 SafeWeb servers delivered over 2 billion encrypted documents over the Internet. Other agencies using SafeWeb technology include the World Health Organization, the U.S. Navy and numerous private corporations such as Google and EMC.

SafeWeb was acquired by Symantec (Nasdaq: SYMC) on October 15, 2003 for $26 million in cash.

In 2005 I co-founded Robot Genius, Inc., an information security startup based in Oakland California. Robot Genius investors include Kingdon Capital, a leading hedge fund based in NYC, and Venio Capital Partners of Austin, TX. Robot Genius has developed unique technology for secure sandboxing, behavioral monitoring and state tracking on the Windows operating system. It has also developed a completely automated infrastructure which tests all Windows executables on the Web and determines which programs are malicious or comprise a security threat. Robot Genius' automated lab tests tens of thousands of executables per day and nearly all of the millions of unique executables on the Web have been tested by our system.

Patents

Issued: United States patent 7509490 (assigned to Symantec Corporation)

Method and apparatus for encrypted communications to a secure server

Pending:

20020184527 *Intelligent secure data manipulation apparatus and method* (assigned to Symantec Corporation)

20090077664 *Methods for combating malicious software* (assigned to Robot Genius Inc.)

Publications

[110] **Physical consequences of the QED theta angle**, arXiv:1012.2906

[109] **Asymptotic Safety, Singularities, and Gravitational Collapse**, with R. Casadio and B. Mirza, arXiv:1008.2768 [gr-qc]. To appear in Physics Letters B.

[108] **White holes and eternal black holes**, arXiv:1007.2934 [gr-qc].

[107] **Dark Energy, with Signatures**, with Sourish Dutta and Robert J. Scherrer. Honorable mention, Gravity Research Foundation essay competition, 2010. arXiv:1005.3038, to appear in IJMPD.

[106] **The Black hole information paradox and macroscopic superpositions**, Proceedings of 1st Mediterranean Conference in Classical and Quantum Gravity, Kolymbari, Crete, Greece, 14-18 Sep 2009, J.Phys.Conf.Ser.222:012037,2010, arXiv:1003.5382.

[105] **Grand unification through gravitational effects**, with Xavier Calmet and David Reeb, Phys.Rev.D81:035007,2010, arXiv:0911.0415.

[104] **Monsters, black holes and the statistical mechanics of gravity**, with David Reeb, (invited review) Mod.Phys.Lett.A24:1875-1887, 2009, arXiv:0908.126

[103] **Life on moduli space?** Phys.Rev.D80:086012, 2009, arXiv:0908.0943.

[102] **Black holes, information and decoherence**, with David Reeb, Phys.Rev.D79:124037, 2009, arXiv:0903.2258.

[101] **Dark radiation as a signature of dark energy**, with Sourish Dutta, David Reeb and Robert J. Scherrer, Phys.Rev.D79:103504, 2009, arXiv:0902.4699.

[100] **Invisible Higgs boson, continuous mass fields and unHiggs mechanism**, with X. Calmet, N.G. Deshpande and X.G. He, Phys.Rev.D79:055021, 2009, arXiv:0810.2155.

[99] **On the sign problem in QCD**, with D. Reeb, arXiv:0808.2987, Int.J.Mod.Phys.A25:53-67, 2010.

[98] **Colorful quantum black holes at the LHC**, with X. Calmet, and W. Gong, Phys.Lett.B668:20-23,2008, arXiv:0806.4605.

[97] **Grand unification and enhanced quantum gravitational effects**, with X. Calmet and D. Reeb, Phys.Rev.Lett.101:171802, 2008, arXiv:0805.0145.

[96] **Unitarity and the Hilbert space of quantum gravity**, with D. Reeb, Class.Quant.Grav. 25:235007, 2008, arXiv:0803.4212.

[95] **Quantum gravity at a TeV and the renormalization of Newton's constant**, with X. Calmet and D. Reeb, Phys.Rev.D77:125015, 2008, arXiv:0803.1836.

[94] **What is the entropy of the universe?**, with P. Frampton, T. Kephart and D. Reeb, Class.Quant.Grav.26:145005, 2009, arXiv:0801.1847.

[93] **TeV gravity in four dimensions?**, with X. Calmet, Phys.Lett.B663:95-98, 2008, arXiv:0711.2306.

[92] **Long range forces and limits on unparticle interactions**, with N. Deshpande and J. Jiang, Phys.Lett.B659:888, 2008, arXiv:0708.2735.

[91] **Black hole entropy, curved space and monsters**, with D. Reeb, Phys.Lett.B658:244-248, 2008, arXiv:0706.3239.

[90] **Information, information processing and gravity**, Int.J.Mod.Phys.A22: 2895, (2007), arXiv:0704.1154.

[89] **Precision cosmological measurements: Independent evidence for dark energy**, with G. Bothun and B. Murray, Phys.Lett.B660:133-137, 2008, astro-ph/0612106.

[88] **Does string theory predict an open universe?**, with R. Buniy and A. Zee, Phys.Lett.B660:382-385, 2008, hep-th/0610231.

[87] **Spacetime topology change and black hole information**, Phys.Lett.B644: 67 (2007), hep-th/0608175.

[86] **On the volatility of volatility** (mathematical finance and economics) with B. Murray, Physica A 380: 366 (2007), Social Science Research Network, SSRN abstract 926379.

[85] **Physical limits on information processing**, Phys. Lett. B **641**, 99 (2006), hep-th/0607082.

[84] **The null energy condition and instability**, with R. Buniy and B. Murray, Phys. Rev. D **74**, 063518 (2006), hep-th/0606091.

[83] **Discreteness and the origin of probability in quantum mechanics**, with R. Buniy and A. Zee, Phys. Lett. B **640**, 219 (2006), hep-th/0606062.

[82] **Thermal gravity, black holes and cosmological entropy**, with B. Murray, Phys. Rev. D **73**, 044017 (2006), hep-th/0512033.

[81] **Message in the Sky**, with A. Zee, Mod. Phys. Lett. A **21**, 1495 (2006), physics/0510102.

[80] **Entanglement entropy, black holes and holography**, with R. Buniy, Phys.Lett.B644:72 (2007), hep-th/0510021.

[79] **Is Hilbert space discrete?**, with R. Buniy and A. Zee, Phys.Lett.B630:68-72,2005, hep-th/0508039.

[78] **Minimum length from first principles**, with Xavier Calmet and Michael Graesser, hep-th/0505144. Honorable mention, 2005 Gravity Research Foundation competition.

[77] **Semi-classical wormholes and time machines are unstable**, with Roman V. Buniy, Phys.Lett.B632:127-130,2006, hep-th/0504003.

[76] **Instabilities and the Null Energy Condition**, with Roman V. Buniy, Phys.Lett.B632:543-546,2006, hep-th/0502203.

[75] **Opening the Window for Technicolor**, with Deog Ki Hong (MIT, LNS) and Francesco Sannino (Niels Bohr Institute), To appear in the proceedings of 10th International Symposium on Particles, Strings and Cosmology (PASCOS 04 and Pran Nath Fest), Boston, Massachusetts, 16-22 Aug 2004, hep-ph/0410310.

[74] **New Solutions to the Strong CP Problem**, with F. Sannino, Phys.Lett.B 605:369 (2005), hep-ph/0408319.

[73] **Lightsheets, Branes and the Covariant Entropy Bound**, with Deog Ki Hong, hep-th/0407241.

[72] **Anthropic Distribution for Cosmological Constant and Primordial Density Perturbations**, with Michael L. Graesser, Alejandro Jenkins and Mark B. Wise, hep-th/0407174, Phys.Lett.B 600:15 (2004).

[71] **Composite Higgs from Higher Representations**, with Deog Ki Hong and Francesco Sannino, Phys.Lett.B597:89 (2004) hep-ph/0406200.

[70] **A Speculative Relation Between the Cosmological Constant and the Planck Mass**, with A. Zee, Mod.Phys.Lett.A20:2699 (2005), hep-th/0406142.

[69] **Gradient Instability for w $<$ -1**, with A. Jenkins and M.B. Wise, Phys.Lett.B597:270-274,2004, astro-ph/0406043.

[68] **Minimum Length from Quantum Mechanics and General Relativity**, with X. Calmet and M. Graesser, Phys.Rev.Lett. 93:211101,2004, hep-th/0405033.

[67] **Entropy Bounds and Dark Energy**, Phys.Lett.B594:13-16,2004, hep-th/0403052.

[66] **Quintessence and Thermal Matter**, with B. Murray, Phys.Lett.B595:16-21,2004, astro-ph/0402541.

[65] **Brane World Confronts Holography**, with D.K. Hong, Talk given at 2nd International Conference on Flavor Physics (ICFP 2003), Seoul, Korea, 6-11 Oct 2003, hep-th/0401060.

[64] **The Fermion Sign Problem and High Density Effective Theory**, to appear in the Proceedings of the KIAS-APCTP Symposium on Astro-Hadron Physics (World Scientific), hep-ph/0402002.

[63] **Positivity and Fermionic Dense Matter**, with D.K. Hong, to appear in the proceedings of 21st International Symposium on Lattice Field Theory (LATTICE 2003), Tsukuba, Ibaraki, Japan, 15-19 Jul 2003, hep-lat/0309103.

[62] **Holography, Entropy and Extra Dimensions**, with D.K. Hong, Phys.Lett.B591:208-212,2004, hep-ph/0308290.

[61] **Global Spread of Infectious Diseases** (mathematical biology) with A. Zee, Journal of Biological Systems, Volume 12, No. 3, (2004) 289, cond-mat/0306628.

[60] **Cosmology of Nonlinear Oscillations**, Phys.Lett.B567:9-11,2003, astro-ph/0305096.

[59] **Positivity and Dense Matter**, with D.K. Hong, Phys.Rev.D68:034011,2003, hep-ph/0304156.

[58] **High Temperature Superfluid and Feshbach Resonance**, cond-mat/0302422, to appear in MPLA.

[57] **On the Intrinsic Parity of Black Holes**, Phys.Lett.B547:133,2002, gr-qc/0207078.

[56] **Quantum Production of Black Holes**, Phys.Lett.B555:92-98,2003, hep-ph/0203154.

[55] **Positivity of High Density Effective Theory**, with D.K. Hong, Phys.Rev.D66:071501, 2002 (Rapid Communication), hep-ph/0202236.

[54] **The QCD Phase Diagram and Explosive Astrophysics**, Invited talk at Compact Stars in the QCD Phase Diagram, Copenhagen, August 15-18, 2001, hep-ph/0111049.

[53] **Supernovae, Hypernovae and Color Superconductivity**, Deog Ki Hong, Stephen D.H. Hsu, Francesco Sannino, Phys.Lett.B516:362-366, 2001, hep-ph/0107017.

[52] **Anomaly Matching in Gauge Theories at Finite Matter Density**, Stephen D.H. Hsu, Francesco Sannino, Myck Schwetz, Mod. Phys. Lett. A16:1871, 2001, hep-ph/0006059.

[51] **Color Superconductivity in High Density Quark Matter**, Stephen D.H. Hsu, in the proceedings of TMU - Yale Symposium on Dynamics of Gauge Fields: An External Activity of APCTP, Tokyo, Japan, 13-15 Dec 1999, hep-ph/0003140.

[50] **Particle Multiplicities and Thermalization in High-Energy Collisions**, J. Hormuzdiar, Stephen D.H. Hsu, Gregory Mahlon, nucl-th/0001044, to appear in Int. Journal of Mod. Phys. E.

[49] **On the QCD Ground State at High Density**, with N. Evans et al., Nucl.Phys.B581:391-408,2000, hep-ph/9910313.

[48] **Magnetic Interactions, the Renormalization Group and Color Superconductivity in High Density QCD**, with M. Schwetz, Nucl.Phys.B572:211-226,2000, hep-ph/9908310.

[47] **On Spherically Symmetric Breathers in Scalar Theories**, with J. Hormuzdiar, hep-th/9906058.

[46] **Neutron Star Vortex Dynamics and Magnetic Field Decay: Implications for High Density Nuclear Matter**, Phys.Lett.B469:161-165,1999, nucl-th/9903039.

[45] **Effective Field Theory of Neutron Star Superfluidity**, with J. Hormuzdiar, nucl-th/9811017.

[44] **Nonperturbative Couplings and Color Superconductivity**, with N. Evans and M. Schwetz, hep-ph/9810514, Phys.Lett.B449, 281 (1999).

[43] **An Effective Field Theory Approach to Color Superconductivity at High Quark Density**, with N. Evans and M. Schwetz, hep-ph/9808444, Nucl.Phys.B551, 275 (1999).

[42] **Pion Breather States From QCD**, with J. Hormuzdiar, Phys.Rev.C59:889 (1999).

[41] **On the QCD Phase Transition at Finite Baryon Density**, with M. Schwetz, Phys.Lett. B432:203 (1998).

[40] **Isospin Fluctuations from Multiple Domains of Disoriented Chiral Condensate**, with J. Hormuzdiar, Phys.Rev.C58:1165 (1998).

[39] **Zero Energy Configurations in General Relativity**, gr-qc/9801106.

[38] **Anomaly Induced QCD potential and Quark Decoupling** with F. Sannino and J. Schecter, Phys.Lett.B427:300 (1998).

[37] **Lattice Tests of Supersymmetric Yang-Mills Theory?**, with N. Evans and M.

Schwetz, hep-th/9707260.

[36] **Gaugino Determinant in Supersymmetric Yang-Mills Theory**, Mod.Phys.Let.A, Vol.13, No.9 673 (1998)

[35] **A Note on Supersymmetry Breaking**, with M. Schwetz, hep-th/9703227, Phys.Lett. B405:287 (1997).

[34] **Controlled Soft-Breaking of N=1 SQCD**, with N. Evans and M. Schwetz, hep-th/9703197, Phys.Lett.B404:77 (1997).

[33] **QCD at Large θ-angle and Axion Cosmology**, with N. Evans, A. Nyffeler and M. Schwetz, Nucl.Phys.B494:200 (1997).

[32] **Phase Transitions in Softly Broken $N = 2$ SQCD at Non-zero θ-angle**, with N. Evans and M. Schwetz, Nucl.Phys.B484:124 (1997).

[31] **Chiral Perturbation Theory, Large-N_c and the η' Mass**, with N. Evans and M. Schwetz, Phys.Lett.B382:138 (1996).

[30] **Topological Charge and $U(1)_A$ Symmetry in the High Temperature Phase of QCD**, with N. Evans and M. Schwetz, hep-ph/9601361, Phys.Lett.B375:262 (1996).

[29] **Exact Results and Soft Breaking Masses in Supersymmetric Gauge Theory** with N. Evans, M. Schwetz and S. Selipsky, hep-th/9508002, Nucl.Phys.B456: 205 (1995).

[28] **Exact Results in Softly Broken Supersymmetric Models**, with N. Evans and M. Schwetz, Phys.Lett.B355:475 (1995).

[27] **Regularization of Chiral Gauge Theories**, hep-th/9503058.

[26] **Wavepacket Dynamics in Yang-Mills Theory**, with B. Muller et al., Phys.Rev.D52:2402 (1995).

[25] **Anomalous Violation of Conservations Laws in Minkowski Space: Spontaneously Broken Gauge Theories**, with T. Gould, Nucl.Phys.B446:65 (1995).

[24] **Anomalous Violation of Conservations Laws in Minkowski Space**, with T. Gould, hep-ph/9410407, Nucl.Phys.B446:35 (1995).

[23] **Quantum Scattering and Classical Solutions**, invited talk and contribution to proceedings of Sintra '94 NATO Workshop on Electroweak Interactions and the Early Universe.

[22] **Quantum Scattering from Classical Field Theory**, with T. Gould and E. Poppitz, Nucl.Phys.B437:83 (1995)

[21] **Nonperturbative Decoupling and Effective Field Theory**, Phys.Rev.D51:4963 (1995)

[20] **Spacetime Symmetries and Semiclassical Amplitudes**, with T. Gould, Mod.Phys.Lett. A9:1589 (1994)

[19] **A New Derivation of the Long Range Forces from Two Neutrino Exchange**, with P. Sikivie, Phys.Rev.D49:4951 (1994)

[18] **Resummation Methods at Finite Temperature: The Tadpole Way**, with C.G.

Boyd and D. Brahm, Phys.Rev.D48:4963 (1993)

[17] **Complementarity and Chiral Fermions in SU(2) Gauge theories**, Phys.Rev.D48:4458 (1993)

[16] **A New Anomaly Matching Condition?**, with V. Bhansali, Phys.Lett.B302:230 (1993)

[15] **Metastable Strings in Realistic Models**, with R. Holman, et al., Phys.Rev.D46:5352 (1992)

[14] **Finite Temperature Effective Actions**, invited talk and contribution to the proceedings of the Yale-Texas Workshop on Baryon Number Violation

[13] **Corrections to the Electroweak Effective Action at Finite Temperature**, with C.G. Boyd and D. Brahm, Phys.Rev.D:4952 (1993)

[12] **On Tunneling at Finite Energies and Temperatures**, Phys.Lett.B294:77 (1992)

[11] **Cosmological Texture and Planck scale physics**, with R. Holman, et al., Phys.Rev.Lett. 69:1489 (1992)

[10] **Solutions to the Strong-CP problem in a World with Gravity**, with R. Holman, et al., Phys.Lett. B282:132 (1992)

[9] **Infrared Divergences, Finite-Temperature Effective Actions and the Electroweak Phase Transition**, with D. Brahm, Harvard/Caltech preprint HUTP-91-A063

[8] **Electroweak Radiative Corrections from Walking Technicolor**, with Raman Sundrum, Nucl.Phys.B391:127 (1993)

[7] **Vacuum Tunneling via Particle Collisions**, Phys.Lett.B261:81 (1991)

[6] **Can a Particle have a Bag?**, with G. Anderson and L. Hall, Phys.Lett.B249:505 (1990)

[5] **Black Holes from Extended Inflation**, Phys.Lett.B251: 343 (1990)

[4] **Ruling Out Large Sneutrino Vacuum Expectation Values**, with D. Brahm and L. Hall, Rapid Communications of Phys.Rev.D42:1860 (1990)

[3] **Black Hole Nucleosynthesis and $\Omega_B = 1$**, with E. Carlson, R. Esmailzadeh, and L. Hall, Phys.Rev.Lett.65:2225 (1990)

[2] **Rare Z decays from R-parity Violation**, with R. Barbieri, D. Brahm and L. Hall, Phys. Lett.B238:86 (1990)

[1] **Cosmological Production of Black Holes**, with L. Hall, Phys.Rev.Lett.64:2848 (1990)