CURRICULUM VITAE

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US Citizen
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Goals

Current: Graduate Student, Ph.D. program in the Department of Computer Engineering, University of California, Santa Cruz, pursue applied research in the Autonomous Systems Lab (ASL)

Long term: Contribute to the field of dynamical autonomous systems, especially in aviation.

Employment

2009- Chief Technical Officer (CTO) and co-founder, NextGen AeroSciences, LLC, Williamsburg, VA. (www.NextGenAeroSciences.com). Company has research contracts with NASA, JPDO, FAA. Responsibilities: Leadership, strategy, and technical work in algorithm design and implementation on fast hardware (including GPUs) of autonomous dynamical flight path computational systems for decentralized air traffic control, Agent-Based Modeling (ABM) and simulation for use in transportation modeling, demographics, traffic physics, phase structure and phase transition analysis.

2003-2008 Senior Scientist and Co-Founder, DayJet Corporation, Boca Raton, FL. DayJet was the first per-seat on-demand airline, raised $200+M, flew 28 jets 1M miles. Responsibilities: Science and technology leadership, Agent-Based Modeling (ABM) and simulation for transportation modeling, demographic forecasting and modeling, dynamic scheduling, disruption analysis. See media articles below on my work there.

1998-2003 Vice President, Science, BiosGroup, Santa Fe, NM. My colleagues and I built BiosGroup into the world's largest complexity science consulting firm with customers including DARPA, Joint Chiefs, United Airlines, Southwest Airlines, NASDAQ, Boeing, Ford, Procter and Gamble. Responsibilities: Agent-based modeling and simulation, risk analysis, dynamic scheduling, public speaking, media interviews, testifying before the US Senate (committee). I served as a PI on a number of US Gov't contracts including Novel Intelligence Massive Data (NIMD), for automatically piecing together and drawing conclusions from millions of fragments of disparate data using computational agents, developing new techniques in the field of Evidence Marshalling.

1998 Fellow, Bios Group LP, Santa Fe, NM. Consulting and advising senior staff on complexity science, algorithm design, agent-based modeling. Bios Group Fellows included scientific leaders, Nobel laureates.

1998-2003 Senior Fellow, Institute for the Future, Palo Alto, CA. Consultant, advisor to top management, speaker at events.

1996-1997 Co-founder of Java Soft division of Sun Microsystems. Manager and world-wide keynote speaker for the Java language and associated projects/products, Internet technical directions, distributed computing, Sun Microsystems advanced technology.

1994-1996 Researcher at Sun Microsystems Laboratories. Strategist and world-wide speaker for the Spring distributed operating system project at Sun Labs, Internet technical directions, Sun Microsystems computer science advanced operating system technology.

1991-1994 Manager and leader of Unix Operating System (SunOS) products for Sun Microsystems, world-wide speaker.

1990-1998 World-wide public speaker for Sun Microsystems on Unix (SunOS), Java, conventional and distributed operating systems, computer networking. Gave more than 100 talks, dozens of keynote speeches, on 5 continents. Also did many press and analyst interviews. Served in this capacity as a Sun employee and consultant.

1988-1990 Manager at Anamartic Ltd., a Cambridge, England, based company pioneering Wafer-scale integration (WSI) for building very-large integrated circuit networks, using an entire silicon wafer to produce a single "super-chip".

1984-1988 Founder and Executive VP of Symmetric Computer Systems (early networked Unix computers). Wrote business plan, raised venture capital, managed operations, etc.

1973-1987 Computer Scientist, U.S. Geological Survey, researcher in geophysics and earthquake research. Early contributor to Unix internals. Wrote the first real-time earthquake predicting/forecasting system. Lead projects to implement some of these processes in Venezuela and China (see next paragraph on US-China earthquake project). Presented results at conferences of the American Geophysical Union (AGU).

1980-1986 Chief of US side of joint US-China earthquake project, pioneering China computer effort, obtained the first Unix license for China, managed exchanges of scientists, 3 trips to China to manage research and computer installations on site in Beijing, plus geophysics field work in the Yunnan province in the foothills of the Himalayas in southern China. Guest of honor at a meeting in Lassa, Tibet, in Chinese (no translator).

1998-2014 Served as an expert witness in 18 state, federal, and military courts.

1990- Founded Herriot Research Corporation, consulting practice in areas of complexity science, computer science, computer networking, etc.

1970-1990 Consultant in areas of complexity science, computer science, computer networking, etc.

Education

2014 Graduate Student, Ph.D. program in the Department of Computer Engineering, University of California, Santa Cruz – Autonomous Systems Lab (ASL)

1996 Ph.D., IASHS, San Francisco, CA, Social Sciences (human sexuality)
Doctoral dissertation: *Sexual Communication on the Internet*
Doctoral dissertation methodology: ethnography, anthropology methods, factor analysis
Dissertation advisor: Clark Taylor, Ph.D., UC Berkeley, Anthropology

1972-1973 Graduate work, Union Theological Seminary, New York City
Studied brain modeling with Peter Putnam, Ph.D., Physics, Princeton University

1967-1971 Graduate work (as an undergraduate) in Computer Science, Stanford University
Completed most course work for a Ph.D. in Computer Science
Informal advisor: Donald Knuth

1971 BS, Stanford University, Interdepartmental (Computer Science – Computer Design)
Extensive independent study in CS under the direction of Donald Knuth
Studied for 6 months at Stanford's "Overseas Campus" in Beutelsbach, Germany.

Honors and Projects

2001 Testified before US Senate Defense Appropriations subcommittee on new science.

2000- Co-founder of the Particle Economics Research Institute (PartEcon) with Stuart Kauffman, Mike Brown (Chairman, NASDAQ), Bruce Sawhill, Zoe-Vonna Palmrose. PartEcon uses Agent-Based Modeling (ABM) to simulate abstract economies with special attention to 'speciation' i.e. emergence of new inventions, new industries, etc.

Currently Funded Research

"Economic Modeling of NextGen Paradigms to 2050", funded by NASA and the JPDO (Joint Program Development Office)

Recent Papers

2012 Gawdiak, Holmes, B., Sawhill, B., **Herriot, J**., et al.: *Air Transportation Strategic Trade Space Modeling and Assessment Through Analysis of On-Demand Air Mobility with Electric Aircraft***,** Proceedings of the 12th Annual ATIO Conference, Indianapolis, IN.

2012 Gawdiak, Y., **Herriot, J**., Sawhill, B., et al.: *Modeling of Demand and Supply for Air Transportation in the U.S., 2025 – 2040***,** Proceedings of the 12th Annual ATIO Conference, Indianapolis, IN.

2012 Holmes, B., Sawhill, B., **Herriot, J**. and Seehart, K.: *Development of Complexity Science and Technology Tools for NextGen Airspace Research and Applications***,** NASA Technical Report NASA/CR–2012-217580

2011 Sawhill, B., **Herriot, J**., and Holmes, B.J.: *Complexity Science Tools for Interacting 4D Trajectories and Airspace Phase Transitions*, Proceedings of the 11th Annual ATIO Conference, Virginia Beach, VA

2011 Sawhill, B., **Herriot, J**., Holmes, B.J., and Seehart, K.: *Airspace Phase Transitions and the Traffic Physics of Interacting 4D Trajectories*, Proceedings of the Ninth USA/Europe Air Traffic Management Research and Development Seminar (ATM 2011), Berlin, Germany (best paper award)

Inventions and Patents

2010 A System for Continuous Replanning and Deconfliction of a multiuser Airspace (currently filed, NextGen AeroSciences, LLC)

2005 A Method for Optimizing Scheduled Maintenance on Unscheduled Transportation Assets (DayJet Corp)

2003 An Agent-Based Model for Total Cost of Travel (DayJet Corp)

2002 Agent-Based Evidence Marshaling, Reasoning with Incomplete Data with Petascale Data (BiosGroup)

1998-2003 Many patents/IP/applied-for as VP, Science, BiosGroup, on applied complexity science.

Media

2008 Fallows, J.: *Taxis in the Sky*, The Atlantic, May 2008: http://www.theatlantic.com/doc/200805/dayjet

2008 Maas, J.: *Ready When You Are*, Stanford Magazine April/May 2008: http://www.stanfordalumni.org/news/magazine/2008/marapr/pc/dayjet.html

2007 Lindsay, G.: *Flight Plan*, Fast Company, May 2007: http://www.fastcompany.com/magazine/115/open_features-flight-plan.html

Invited Talks

2009 *Innovation on the Edge of Chaos*, Silicon Valley Innovation Institute, Palo Alto, CA

2007 *DayJet and Applied Complexity Science*, Northwestern Institute on Complex Systems Annual Meeting, Kellogg School of Business, Northwestern University, IL

2002 *Particle Economics*, McCombs School of Business, UT Austin, TX

1990-1998 Over 100 talks, dozens of keynote speeches, on 5 continents as a world-wide public speaker for Sun Microsystems on Unix (SunOS), Java, conventional and distributed operating systems, computer networking.

Cultural Notes

Traveled to 100+ countries, studied 5 languages (English, French, German, Spanish, Chinese)

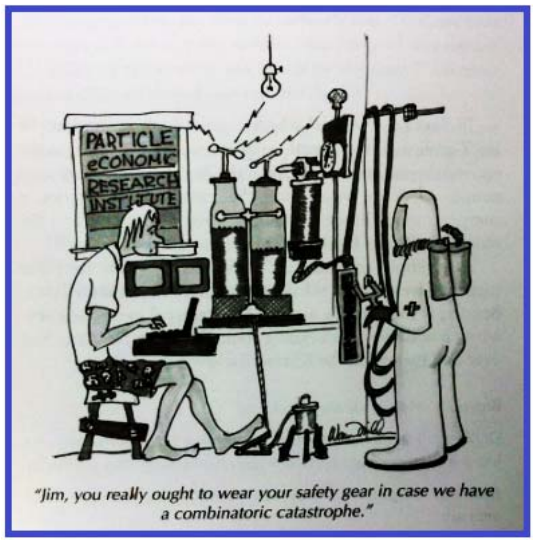
While an undergraduate at Stanford University, studied at Stanford's "Overseas Campus" in Beutelsbach, Germany. I served as cultural chair of the group.

Attended high school in Palo Alto, CA, and Grenoble, France. Immersive experience in French. Physical Education class in the winter was skiing in the French alps.

Enjoy acting, improvisational theater performing, bicycling (road and mountain), distance running, backpacking, skiing, scuba diving, languages, philosophy, literature.

Have a long-time interest in economics, especially computational modeling of the creation of new 'species' of products, new inventions, new industries, etc., arising out of the combinatorics of possible ways of making and doing things – as well as measuring their associated emergent statistical distributions (e.g. power laws).

Related to this work in modeling economic combinatorics, I am character in a book by Mike Brown, former CFO of Microsoft and former NASDAQ chairman, et. al., Thog's Guide to Quantum Economics, 50,000 Years of Accounting Basics for the Future.



Drawing by Warren Miller, in Thog book

Warren Miller (known for his ski movies, etc.), captured me and a central interest of mine in this drawing – namely, the exciting and wonderful challenge of designing, coding, and successfully running computational searches of vast combinatorial spaces.