

CURRICULUM VITAE

WAYNE W. WAKELAND

September 28, 2007

Systems Science Graduate Program, Portland State University
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Education

Ph.D.	1977	Systems Science, Portland State University, Portland, OR
Master of Engineering	1973	Harvey Mudd College, Claremont, CA
B.S.	1972	Engineering, Harvey Mudd College, Claremont, CA

Academic Employment

Fall 2003-present	Associate Professor, Systems Science Ph.D. Program, Portland State University, Portland, OR
Fall 2000- Spring 2003	Associate Professor, .75 FTE, Systems Science Ph.D. Program, Portland State University, Portland, OR
1997-2000	Adjunct Professor, Systems Science Ph.D. Program, Portland State University, Portland, OR
1993-1997	Adjunct Associate Professor, Systems Science Ph.D. Program, Portland State University, Portland, OR
1978-1993	Adjunct Assistant Professor, Systems Science Ph.D. Program, Portland State University, Portland, OR
1976-1977	Research Associate, NSF Grant, Systems Science Ph.D. Program, Portland State University, Portland, OR

Industry Employment

2001-present	Consultant, Leupold & Stevens, Inc., Beaverton, OR
1993-2000	Information Resources Manager, Leupold & Stevens, Inc., Beaverton, OR
1992-1993	MRP Project Manager, Epson Portland, Inc., Hillsboro, OR
1987-1991	Director of Manufacturing, Magni Systems, Inc., Beaverton, OR
1984-1987	MIS Director and Materials Manager, Photon Kinetics, Inc., Beaverton, OR
1978-1984	Planning and Scheduling Manager, Corporate Forecaster, Tektronix, Inc., Beaverton, OR
1975-1976	Resource Planning Analyst, Pacific Power and Light Company, Portland, OR

Dissertation

"CHANCE: A Probabilistic Model for Energy Resource Planning," 1977. Committee members: Richard Duncan (chair), George Lendaris, and Harold Linstone.

Refereed Publications

Book Chapters and Technical Reports

(in press) Raffo, D. and W. Wakeland, "Moving up the CMMI Capability and Maturity Levels Using Simulation," Software Engineering Institute Technical Report, Carnegie Mellon University, 2007.

Setamanit, S., W. Wakeland, D. Raffo, "Exploring the Impact of Task Allocation Strategies for Global Software Development Using Simulation," *Software Process Change*, Eds: Wang, Pfahl, Raffo, and Wernick, Lecture Notes in Computer Science, Number 3966, Springer 2006, pp 274-285.

Wakeland, W., J. Fusion, B. Goldstein, "Estimation of subject-specific ICP dynamic models using prospective clinical data," in M. Ursino, C. Brebbia, G. Pontrelli, E. Magosso (eds.) *Modelling in Medicine and Biology VI*, WIT Press, Southampton, Boston, 2005, pp 57-66.

Wakeland, W. and B. Goldstein, "A computer model of intracranial pressure dynamics during traumatic brain injury that explicitly models fluid flows and volumes," *Intracranial Pressure and Brain Monitoring, Acta Neurochirurgica Supplementum*, 2005, vol. 95, pp 321-326.

Aboy, M., J. McNames, W.W. Wakeland, M. Ellenby, D. Hollemon, S. Lai, R. Chesnut, S. Durham, B. Goldstein, "Pulse and mean intracranial pressure analysis in pediatric traumatic brain injury," *Intracranial Pressure and Brain Monitoring, Acta Neurochirurgica Supplementum*, 2005, vol. 95, pp 307-310.

Peer-Reviewed Journal Articles

(in press) Setamanit S., W. Wakeland, D. Raffo, "Using Simulation to Evaluate Global Software Development Task Allocation Strategies," *Software Process Improvement and Practice*, 2007.

Hornero R., M. Aboy, D. Abasolo, J. McNames, W. Wakeland, B. Goldstein, "Complex analysis of intracranial hypertension using approximate entropy," *Critical Care Medicine*, vol. 34, no. 1, 2006, pp 87-95.

Sommers, J.A., J.C. Cullen, R.R. Sinclair, W.W. Wakeland, "Dynamic Systems and Organizational Decision Making in Nonprofits," *Journal of Applied Behavioral Science*, vol. 41, no. 4, 2005, pp 482-502.

Wakeland, W.W., S. Shervais, D.M. Raffo. "Heuristic Optimization as a V and V Tool for Software Process Simulation Models," *Software Process Improvement and Practice*, vol. 10, no. 3, 2005, pp 301-309.

Liu, L. and W. Wakeland, "Combining optimizer and metamodelling for railcar structural optimization," *Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit*, vol. 219, no. 1, 2005, pp 1-10.

Wakeland, W.W., R.H. Martin, D.M. Raffo, "Using Design of Experiments, Sensitivity Analysis, and Hybrid Simulation to Evaluate Changes to a Software Development Process: A Case Study," *Software Process Improvement and Practice*, vol. 9, no. 2, 2004, pp 107-119.

Linstone, H., G. Lendaris, S. Rogers, W. Wakeland, M. Williams, "The Use of Structural Modeling for Technology Assessment," *Technological Forecasting and Social Change*, vol. 14, no. 4, 1979, pp 291-327.

Wakeland, W., "QSIM2: A Low-Budget, Heuristic Approach to Modeling and Forecasting," *Technological Forecasting and Social Change*, vol. 9, nos. 1 & 2, 1977, pp 213-229.

Journal Articles Currently Under Review

Wakeland W. and B. Goldstein, "Assessing the Prediction Potential of a Computer Model of Intracranial Pressure Dynamics," *Critical Care Medicine*, submitted September 2007.

Wakeland W. and B. Goldstein, "A review of physiological simulation models of intracranial pressure dynamics," *Computers in Biology and Medicine*, submitted September 2007.

Peer-Reviewed Conference Papers

(accepted) Jolly, R. and W. Wakeland, "Using Agent Based Simulation and Game Theory Analysis to Study Information Sharing in Organizations—the Infoscape," Hawaii International Conference on System Sciences, Waikoloa, HI, January 2008.

(accepted) Wakeland, W., L. Sears, K. Venkat, "Development of the Food Carbon Game and Determining its Effects on Consumer Knowledge, Transfer Intentions, and Environmental Self-Efficacy - A Progress Report," International Conference on Sustainability in the Supply Chain, Portland, OR, November 2007.

Setamanit, S., W. Wakeland, D.M. Raffo, "Improving Global Software Development Project Performance Using Simulation," Proceedings of PICMET '07 (Portland International Conference on Management of Engineering and Technology), Portland, OR, August 2007.

Wakeland, W., "Modeling Fishery Regulation and Compliance: A Case Study of the Yellowtail Rockfish," Proceedings of the 25th International Conference of the System Dynamics Society, Boston, MA, July 2007.

Wakeland, W., L. Macovsky, G. An, "A Hybrid Simulation Model for Studying Acute Inflammatory Response," Proceedings of Spring Simulation Multiconference 2007, Norfolk, VA, March 2007.

Venkat, K. and W. Wakeland, "An Agent-Based Model of Trade with Distance-Based Transaction Cost," 2006 Summer Computer Simulation Conference, Calgary, Canada, July 2006.

Venkat, K. and W. Wakeland, "Is Lean Necessarily Green?" 50th Anniversary Conference of the International Society for the Systems Sciences, Sonoma, CA, July 2006.

Venkat, K. and W. Wakeland, "Emergence of Networks in Distance-Constrained Trade," Proceedings of the Sixth International Conference on Complex Systems, Boston, MA, June 2006.

Setamanit, S., W. Wakeland, D. Raffo, "Planning and Improving Global Software Development Process Using Simulation," 28th International Conference on Software Engineering, Shanghai, China, May 2006.

Venkat, K. and W. Wakeland, "Using Simulation to Understand and Optimize a Lean Service Process," Proceedings of Spring Simulation Multiconference 2006, Business and Industry Symposium, Huntsville, AL, April 2006.

Liu, L. and W. Wakeland, "Does more uniformly distributed sampling generally lead to more accurate prediction in computer experiments?" 2005 Proceedings of the Winter Simulation Conference, Orlando, FL, December 2005, pp 2561-2571.

Wakeland, W., J. Fusion, B. Goldstein, "A Tale of Two Methods—Agent-Based Simulation and System Dynamics—Applied in a Biomedical Context: Acute Inflammatory Response," 6th European Congress of Systems Science, Paris, France, September 2005.

Cangur, O., B. Denouden, B. Reiff, W. Wakeland, "Using Discrete System Simulation to Model the Lane County Criminal Justice System," Proceedings of PICMET '05 (Portland International Conference on Management of Engineering and Technology), Portland, OR, August 2005.

Bulbul, A. and W. Wakeland, "Introducing a Holistic Project Management Tool: Project Management Simulation Model (PMSM)," Proceedings of PICMET '05 (Portland International Conference on Management of Engineering and Technology), Portland, OR, August 2005.

Chen, H. and W. Wakeland, "Applying System Dynamics Model in Technology Foresight: A Case Study of Wireless VoIP in China," Proceedings of PICMET 05 (Portland International Conference on Management of Engineering and Technology), Portland, OR, August 2005.

Wakeland W. and M. Hoarfrost, "The Case for Thoroughly Testing Complex System Dynamic Models," Proceedings of the 23rd International Conference of the System Dynamics Society, Boston, MA, July 2005.

Raffo D.M., U. Nayak, W. Wakeland, "Implementing Generic Process Simulation Models," Proceedings of the 6th International Workshop on Software Process Simulation and Modeling (ProSim 2005), St. Louis, MO, May 2005.

Wakeland, W., J. McNames, B. Goldstein, "Calibrating an intracranial pressure dynamics model with annotated clinical data—a progress report," Proceedings of the 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Francisco, CA, September 2004, pp 746-749.

Liu, L. and W. Wakeland, "Using a Sizing-Optimizer to Optimize Topology and Partial Ground Structure Approach," Proceedings of American Institute of Aeronautics and Astronautics 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, NY, August 2004, vol. 4, pp 2420-2429.

Raffo, D.M., U. Nayak, S. Setamanit, W. Wakeland, "Using a Software Process Simulation Model to Assess the Impact of IV&V Activities," Proceedings of the 5th International Workshop on Software Process Simulation and Modeling (ProSim 2004), Dublin, Ireland, May 2004.

Liu L. and W. Wakeland, "Combining Sizing Optimizer and Metamodel Optimization for Structural Topology Optimization," Optech04 Optimization Technology Meeting, Breckenridge, CO, May 2004.

Wakeland, W.W., E.J. Gallaher, L.M. Macovsky, C.A. Aktipis, "A Comparison of System Dynamics and Agent Based Simulation Applied to the Study of Cellular Receptor Dynamics," Proceedings of the 37th Annual Hawaii International Conference on System Sciences, January 2004, pp 1381-1390.

Raffo, D.M. and W.W. Wakeland, "Assessing IV & V Benefits Using Simulation," 28th Annual IEEE/NASA Software Engineering Workshop, Greenbelt, MD, December 2003.

Wakeland, W.W., J. McNames, M. Aboy, D. Hollemon, B. Goldstein, "Modeling intracranial fluid flows and volumes during traumatic brain injury to better understand pressure dynamics," Proceedings of the 25th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Cancun, Mexico, September 2003, vol. 1, pp 402-405.

Aboy M., J. McNames, D. Cesta-Frau, W.W. Wakeland, T. Thong, S. Lai, B. Goldstein, "Significance of intracranial pressure pulse morphology in pediatric traumatic brain injury," Proceedings of the 25th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Cancun, Mexico, September 2003, vol. 3, pp 2491-2494.

Sommers, J.A., J.C. Cullen, R.R. Sinclair, W.W. Wakeland, "Using Systems Dynamics to Guide Organizational Change: A Case Study from the Non-Profit Sector," Proceedings of the National Academy of Management Conference, Seattle, WA, August 2003.

Wakeland, W.W., O. Cangur, G. Rueda, "A System Dynamics Model of the Pacific Coast Rockfish Fishery," Proceedings of the 21st International Conference of the System Dynamics Society, New York, NY, July 2003.

Forrester, J.L. and W.W. Wakeland, "Simulation as a Tool for Evaluating Strategic Policies for Flexible Supply Chain Systems," Proceedings of PICMET '03 (Portland International Conference on Management of Engineering and Technology), Portland, OR, July 2003.

Raffo, D.M., S.O. Setamanit, W.W. Wakeland, "Towards a Software Process Simulation Model of Globally Distributed Software Development Projects," Proceedings of the 4th International Workshop on Software Process Simulation and Modeling (ProSim 2003), May 2003.

Wakeland, W.W., "How the Web is Transforming Technology Management Education," Proceedings of PICMET '01 (Portland International Conference on Management of Engineering and Technology), Portland, OR, July 2001, pg. 300.

Wakeland, W., "The Judging Process for SyM Bowl: A High School System Dynamics Modeling Competition," Proceedings of the 16th International Conference of the System Dynamics Society, Quebec, QC, July 1998.

Wakeland, W. and G. Lendaris, "Structural Modeling—A Classroom Experience," Proceedings of the International Conference on Cybernetics and Society, Seattle, WA, October 1982, pp 317-321.

Peer-Reviewed Abstracts

Wakeland, W., J. Fusion, B. Goldstein, "Reproducing published results from *in silico* computer models of the acute inflammatory response to severe sepsis," *J. of Critical Care* 2006; 21(4):346-7.

Wakeland, W., J. Fusion, B. Goldstein, "Creating clinically useful *in silico* models of intracranial pressure dynamics," *J. of Critical Care* 2005; 20(4):396-7.

Levitte, G., M. Aboy, J. McNames, W. Wakeland, S. Lai, B. Goldstein, "Response Analysis of Intracranial Pressure to Change in Respiratory Rate," *Critical Care Medicine* 2003; 31(12):A92.

Aboy, M., J. McNames, W. Wakeland, S. Lai, B. Goldstein, "Transient Pulse Morphology Analysis of the Intracranial Pressure Signal after Ventricular CSF Drainage," *Critical Care Medicine* 2003; 31(12):A92.

Abstracts Currently Under Peer Review

Goldstein, B., R. Agbeko, M. Peters, W. Wakeland, "Assessing the Prediction Potential of a Computer Model of Intracranial Pressure Dynamics in Severe Traumatic Brain Injury," *Critical Care Medicine*, submitted September 2007.

Honors, Grants, and Fellowships

Funded Research

Served as Principal Investigator or Co-Principal Investigator on seven research grants during the past five years totaling over \$1M in funding.

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| 2007-2008 | Co-Principal Investigator , "Food Delivery Footprint: Addressing Transportation, Packaging and Waste in the Food Supply Chain," (Principal Investigator: Mellie Pullman), OTREC, \$30,000. |
| 2007-2008 | Principal Investigator , "Supply Chain Sustainability," PSU Internal Sustainability Grant, \$10,000. |
| 2007 | Principal Investigator , "Modeling Fishery Regulation & Compliance," PSU Faculty Development Grant, \$1,000. |
| 2006-2007 | Principal Investigator , "Update PATT Model Variation," Quantel, Inc., \$10,000. |
| 2004-2005 | Principal Investigator , "ARENA Model of Criminal Justice System," Lane Council of Governments, \$24,000. |
| 2003-2007 | Co-Principal Investigator , "Modeling Intracranial Pressure Dynamics in Pediatric Traumatic Brain Injury," (Principal Investigator: Brahm Goldstein), Thrasher Research Fund, \$320,000. |
| 2003-2006 | Co-Principal Investigator , "Optimizing IV & V Costs and Benefits using Simulation," (Principal Investigator: David Raffo), NASA, \$624,000. |

- 2002 **Principal Investigator**, "Prototype Systems Model of Ecological, Fishery, and Socio-economic Dynamics in the Pacific Coast Groundfish Fishery," Ecotrust, \$3,000.
- 1976-1977 **Research Associate**, "The Use of Structural Modeling for Technology Assessment," (Principal Investigator: Harold Linstone), National Science Foundation.

Honors

- 2005 Received "Best Abstract" award for ICCAI 2005 conference submission.
- 1983 Certified as Fellow in the field of Production and Inventory Management, by the American Production and Inventory Control Society (APICS).
- 1973 Received Letter of Commendation and NASA Certificate of Achievement for masters thesis, "Development and Digital Computer Implementation of a First-Order Vector Markov Birth-Death Model."

Grant Proposal Submissions (not funded)

- 2007 Northwest Academic Computing Consortium, to use web technology to integrate remote students into face-to-face classroom discussions (PI: Wayne Wakeland)
- 2006 Laerdal Foundation for Acute Medicine, to study the influence of head elevation on traumatic brain injury patients (PI: Wayne Wakeland)
- 2005 NIH, to enhance intradepartmental doctoral training in bioengineering and biotechnology (PI: Sean Kohles)
- 2004 NSF, to research the dynamics of fishery management failure (PI: Richard Dudley)
- 2004 NSF, to develop a research instrument for global software development (PI: David Raffo)
- 2003 NIH, to research the therapeutic response dynamics in pediatric brain injury (PI: Brahm Goldstein)
- 2003 PSU, to support fisheries modeling research (PI: Wayne Wakeland)
- 2003 Northwest Academic Computer Consortium, to add streaming video to web courses (PI: Wayne Wakeland)
- 2002 AHRQ, to model transitions in cardiac care within an integrated delivery system (PI: Brian Hazelhurst)
- 2002 PSU, to support intracranial pressure modeling research (PI: Wayne Wakeland)
- 2002 Northwest Health Foundation, to study the effectiveness of using a computer model to manage drug administration (PI: Wayne Wakeland)
- 2002 NSF, to fund summer institutes for teaching system dynamics to biomedical researchers (PI: Ed Gallaher)
- 2002 US EPA, to build a systems model for electronics recovery, reuse, and recycling (PI: Wayne Rifer)

Presentations of Peer-Reviewed Work at Professional Meetings

Accepted for presentation: Wakeland, W., L. Sears, K. Venkat, "Development of the Food Carbon Game and Determining its Effects on Consumer Knowledge, Transfer Intentions, and Environmental Self-Efficacy -

A Progress Report," International Conference on Sustainability in the Supply Chain, Portland, OR, November 2007.

Accepted for Poster: Wakeland, W., "Measuring the Accuracy of Predictions from Patient-Specific Models of Intracranial Pressure Dynamics," 6th Annual International Conference on Complexity in Acute Illness, Orange, CA, October 2007.

Presented: Wakeland, W., "Modeling Fishery Regulation and Compliance: A Case Study of the Yellowtail Rockfish," 25th International Conference of the System Dynamics Society, Boston, MA, July 2007.

Poster: Wakeland, W., J. Fusion, B. Goldstein, "Reproducing published results from *in silico* computer models of the acute inflammatory response to severe sepsis," 5th Annual International Conference on Complexity in Acute Illness, Washington, DC, October 2006.

Presented: Fusion, J. and W. Wakeland, "Complexity and Sufficiency of Equations Used to Model Biomedical Phenomena," Society for Chaos Theory in Psychology & Life Sciences 16th Annual International Conference, August 2006.

Presented: Venkat, K. and W. Wakeland, "Is Lean Necessarily Green?" 50th Anniversary Conference of the International Society for the Systems Sciences, Sonoma, CA, July 2006.

Poster and Plenary Presentation: Wakeland, W., J. Fusion, B. Goldstein, "Creating clinically useful *in silico* models of intracranial pressure dynamics," 4th Annual International Conference on Complexity in Acute Illness, Cologne, Germany, October 2005.

Presented: Wakeland, W., J. Fusion, B. Goldstein, "A Tale of Two Methods—Agent-Based Simulation and System Dynamics—Applied in a Biomedical Context: Acute Inflammatory Response," 6th European Congress of Systems Science, Paris, France, September 2005.

Presented: Wakeland, W., J. Fusion, B. Goldstein, "Estimation of subject-specific ICP dynamics models using prospective clinical data," Biomedicine 2005 6th International Conference on Modelling in Medicine and Biology, Bologna, Italy, September 2005.

Poster: Wakeland W. and M. Hoarfrost, "The Case for Thoroughly Testing Complex System Dynamics Models," 23rd International Conference of the System Dynamics Society, Boston, MA, July 2005.

Presented: Wakeland, W., J. McNames, B. Goldstein, "Calibrating an intracranial pressure dynamics model with annotated clinical data—a progress report," 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Francisco, CA, September 2004.

Presented: Wakeland, W., B. Goldstein, L. Macovsky, J. McNames, "A computer model of intracranial pressure dynamics during traumatic brain injury that explicitly models fluid flows and volumes," 12th International Symposium on Intracranial Pressure and Brain Monitoring, Hong Kong, August 2004.

Presented: Aboy, M., J. McNames, W.W. Wakeland, M. Ellenby, D. Hollemon, S. Lai, R. Chesnut, S. Durham, B. Goldstein, "Pulse and mean intracranial pressure analysis in pediatric traumatic brain injury," 12th International Symposium on Intracranial Pressure and Brain Monitoring, Hong Kong, August 2004.

Poster: Wakeland, W., A. Bulbul, M. Aboy, J. McNames, B. Goldstein, "Using Optimization to Calibrate Models of ICP Dynamics to Patients with Intracranial Hypertension," 12th International Symposium on Intracranial Pressure and Brain Monitoring, Hong Kong, August 2004.

Presented: Wakeland, W.W., E.J. Gallaher, L.M. Macovsky, C.A. Aktipis, "A Comparison of System Dynamics and Agent Based Simulation Applied to the Study of Cellular Receptor Dynamics," 37th Annual Hawaii International Conference on System Sciences, January 2004.

Presented: Wakeland, W.W., O. Cangur, G. Rueda, "A System Dynamics Model of the Pacific Coast Rockfish Fishery," Proceedings of the 21st International Conference of the System Dynamics Society, New York, NY, July 2003

Presented: Wakeland, W.W., "How the Web is Transforming Technology Management Education," PICMET '01 (Portland International Conference on Management of Engineering and Technology), Portland, OR, July 2001.

Presented: Wakeland, W., "The Judging Process for SyM Bowl: A High School System Dynamics Modeling Competition," 16th International Conference of the System Dynamics Society, Quebec, QC, July 1998.

Non-Refereed Publications & Presentations

Non-Refereed Book Chapters

Gallaher, E.J., L.M. Macovsky, W.W. Wakeland, "The Need for System Dynamics in Biological Education: Examples from Pharmacodynamics," in J.L. Hargrove and C.D. Berdanier (eds.) *Mathematical Modeling in Nutrition and Toxicology*, Mathematical Biology Press, Athens, GA, 2005.

Non-Refereed Journal Articles

Wakeland, W., "Microcomputer MRP in Three Months: Photon Kinetics," *Production & Inventory Management Review*, vol. 5, no. 7, 1985, pp 48-52.

Non-Refereed Book Reviews

Wakeland, W., "Koen Frenken: Innovation, Evolution, and Complexity Theory," *Technological Forecasting and Social Change*, vol. 74, no. 8, 2007, pp 1515-1518.

Wakeland, W., "Patricia Wallace: The Internet in the Workplace," *Technological Forecasting and Social Change*, vol. 72, no. 6, 2005, pp 753-755.

Non-Peer Reviewed Conference Papers and Presentations

Wakeland, W.W., "High Definition Manufacturing Cell Model," 14th Annual ProModel Solutions Conference, Park City, UT, July 2002.

Wakeland, W.W., "Teaching Systems Science in High School Compared to Graduate School," World Congress of the Systems Sciences, Toronto, ON, July 2000.

Wakeland, W.W., "SyM Bowl Update: Encouraging and Recognizing Proficiency in System Dynamics Modeling," Annual Systems Thinking & Dynamic Modeling Conference, Stevenson, WA, June 2000.

Wakeland, W.W., "Meta-Modeling Aspects of the Model Conceptualization Process," 34th Annual Meeting of the International Society for Systems Sciences, Portland, OR, July 1990.

Wakeland, W.W. and M. Roberts, "The Trade-Offs Between Single and Two-Level Master Scheduling in a Build-to-Order Environment," Fourth Annual MANMAN Conference, San Jose, CA, 1987.

Teaching, Mentoring, and Curricular Achievements

Teaching

Teach 3-6 modeling and simulation courses per year at PSU, covering the full spectrum of simulation methodologies.

- 2007 Invited to adapt and teach one of my courses in the Sustainable MBA program at the Bainbridge Graduate Institute, Bainbridge, WA.
- 2004 Received an Outstanding Teaching Award from students of the College of Liberal Arts and Sciences.
- 2002 Received an Outstanding Teaching Award from students of the College of Liberal Arts and Sciences.
- 2001-present Generate over half of the curriculum-based Systems Science student credit hours, mostly via elective courses.
- 2000 & 2005 Provided sabbatical coverage by offering core courses that are normally taught by other faculty, including the Systems Approach course and the Systems Theory course.
- 2000-present Developed and administer a Graduate Certificate in Computer Modeling and Simulation that has attracted dozens of students, generated a significant increase in student credit hours, and served to feed the Systems Science Masters and Ph.D. programs. 30 students have earned this certificate to date.
- 2000 Received an Outstanding Teaching Award from students of the School of Engineering and Applied Sciences.
- 1978-present Encourage local business professionals and students from other disciplines to take my classes, by teaching at night and by emphasizing the practical application of systems concepts to a wide array of problems.

Mentoring

- 2006-present Serve as a Dissertation committee member for 3 Engineering and Technology Management students (Supachart, P. Gerdri, Rueda).
- 2006 Served on comprehensive exam committee for a College of Urban and Public Affairs student (Brown).
- 2003-present Chaired or chairing 7 Systems Science dissertation or masters thesis committees: 3 graduates (Bulbul M.S. 2005, Liu 2004, Marcus 2004), and 4 students with approved proposals (Cangur 3/07, Mist 12/04, J. Williams 11/04, Kudo 4/03).
- 1995-present Served as advisor or co-advisor for Systems Science graduate students; currently supporting over half of the approximately 75 active students.
- 1988-present Served or serving as member of (not chairing) 65 Systems Science Ph.D. Dissertation Committees:
- 45 Graduates
2007: Charles, Sudrajat, Chen, Setamanit. 2006: Leo, Abugharbieh, Fussell, Sahibzada. 2005: lewwongcharoen, Sommers, Srivannaboon, Eghtedari, Alvear, Cullen. 2004: Inman, Shafiro, Kuang, Gerdri, Patanakul, Ho, Srivannaboon. 2003: lewwongcharoen, Williams. 2002: Ewton, Brockwood, Roos, Forrester, Pandjepong. 2001: Lim, Martin, Kwik. 2000: Shervais, Yuang, Louise, Lii, Smith. 1999: Razak. 1998: Daim. 1997: Eden. 1996: Zeiber, Zhou, Morehead. 1994: Iyigun. 1993: Morrison. 1992: Al Kadri 1992
- 11 Students with Approved Proposals
Hall 4/07, Leavengood 1/07, Hansen 1/07, Yragui 12/06, Marchand 5/06, Chen 4/06, Borthwick 1/06, Zenobia 10/05, Setamanit 11/04, Jones 8/04, O'Connell 7/04, Paronto 7/04, Ozbay 11/03
- 9 Students with Proposals in Progress
Fusion, Holmstrom, Fayed, Fowke, Bloom, Newton-Curtis, Pedhiwala, Oliver, Gui
- 1980-present Served on approximately 112 Systems Science Comprehensive Exam Committees; recently: 7 in 2006-07, 11 in 2005-06, 11 in 2004-05, 8 in 2003-04, 12 in 2002-03.

Curricular Achievements

- 1998-2002 Reengineered courses for web delivery
- Developed learner-directed activities (asynchronous discussions, computer-based experiments, etc.) to replace or complement lectures and synchronous discussions
- 1980-present Revise courses regularly to keep pace with the rapidly evolving computer technology
- From mainframe computers running DYNAMO, GASP, and GPSS; to DOS PCs running DYNAMO, SLAM, and SIMAN
 - To Macs running STELLA and Extend
 - To Windows PCs running Arena, ProModel, Starlogo, Vensim, and Netlogo
- 1978-2002 Developed or co-developed 10 new PSU courses
- Agent-based Simulation
 - Organizational Theory & Dynamics (w/Bob Sinclair)
 - Manufacturing System Simulation (w/Tim Anderson)
 - Business Process Modeling & Simulation (w/David Raffo)
 - System Dynamics (required core course)
 - Model Conceptualization
 - Combined Simulation Projects
 - Discrete System Simulation
 - Continuous System Simulation
 - Structural Modeling

Community Outreach

- 2005 Served as science fair judge at Benson High School.
- 1996-2002 Served as judging coordinator for SyM Bowl, a system dynamics modeling fair for high school students sponsored by the Oregon Health and Science University.
- 1995 Taught a one-day course on System Dynamics to teachers at Centennial High School.
- 1994 Developed and delivered a computer modeling seminar to PSU faculty members who were developing courses for the "Science in the Liberal Arts" curriculum.
- 1988-present Co-founder and past President, Cascade Systems Society, dedicated to fostering systems education and promoting systems thinking among local educators and professionals.
- 1980-1984 Served as an advisor for Project Business, a volunteer program associated with Junior Achievement that teaches basic business concepts to 8th grade students.

Scholarly Works in Progress

Several journal articles regarding the following topics are in progress for submission during the next 12 months:

- Results of experiments to determine the effectiveness of a short training program that uses a food carbon calculator to educate consumers about the environmental impacts of their food choices.

- Results of using computer simulation models to predict fishery regulation and compliance.
- Results of using hybrid agent-based and system dynamic models of the medical condition of sepsis.
- Methods for model calibration and validation using a blend of published industry-wide data and locally collected, firm/project specific data.
- Results of using high fidelity simulation models of the complex scheduling and resource allocation logic associated with software development processes.
- Development and application of discrete and continuous simulation models of the Lane County criminal justice system.

Significant Professional Development Activities

1999	Attended three-day ProModel Simulation Class, ProModel Corporation, Portland, OR
1992	Participated in three-day MRPII Executive Overview Class, Oliver-Wight Education Associates, Portland, OR
1986	Participated in five-day management development program presented by Morton Organizational Development Laboratory, Napa Valley, CA
1983	Attended four-day Master Scheduling Class, Oliver-Wight Education Associates, San Francisco, CA
1981	Attended five-day MRPII Class, Oliver-Wight Education Associates, Portland, OR
1980	Participated in Stanford Advanced Management College, Stanford University, Fallen Leaf Lake, CA

Governance Activities for the University, College, Department

2006-2007	Served on ACAIT subcommittee for LMS evaluation.
2006-present	Serving as Graduate Office Representative for CS student (Price).
2004-present	Served or serving as Graduate Office Representative on 4 ECE masters thesis or dissertation committees (Gebauer, Zhang 2006, Giesecke 2006, Aboy 2004).
2004-2006	Chaired the PSU Graduate Council.
2003-2006	Served actively on the PSU committee evaluating course management system options, including teaching one of my courses using eCollege, Sakai, and WebCT 6.
2003	Initiated and led collaborative efforts with core Systems Science faculty and PSU library staff to substantially revise journal subscriptions in order to improve content coverage and reduce costs.
2002-2006	Served as a PSU Graduate Council member. Chaired two major proposal review subcommittees. Represented the Graduate Council on a PSU Senate-initiated subcommittee to evaluate the review process for proposed new academic programs.
2002	Initiated and coordinated efforts to substantially revise and improve the System Science catalog text and supplemental rules documents.

- 2001-present Compile and analyze data regarding Systems Science student admissions, advancement, and graduation. Developed and maintain computer models to predict future trends. Initiated monitoring of departmental student credit hours.
- 2001 Initiated and directed the creation of the Systems Science brochure used to promote the program; obtained the assistance of the PSU marketing group and coordinated the initial dissemination of the brochures.
- 2000-present Play an instrumental role recruiting students into both the Systems Science core program and the business option by serving as the primary faculty contact for prospective students.
- 2000 Revamped the Systems Science website and arranged for its ongoing maintenance to ensure that the contents are always up to date and accurate.

Professionally Related Service

- 2006 Doctoral exam committee, Oregon Health & Science University (Campbell)
- 2006 Doctoral exam committee, University of New Mexico (Medina); service acknowledged in a letter of appreciation
- 2006 External tenure-related reviewer, Penn State University
- 2005 Reviewer, Agent Directed Simulation conference
- 2005 Reviewer, Pharmaceutical Research journal
- 2004-present Editorial Advisory Board, Technological Forecasting & Social Change journal
- 2003-present Reviewer, Software Process Improvement & Practice journal
- 2003-present Reviewer, System Dynamics Review journal
- 2003-present Reviewer, International System Dynamics Society conference
- 1997-present Reviewer, Portland International Conference on Management of Engineering and Technology (PICMET)
- 1986 President, Pacific Northwest ASK Users Group
- 1977-present Reviewer, Technological Forecasting & Social Change journal

Memberships in Professional Societies

- 2006-present Society for Complexity in Acute Illness
- 2004-present IEEE Engineering in Medicine and Biology Society
- 2004-present IEEE Systems, Man, and Cybernetics Society
- 2003-present Society for Modeling and Simulation International
- 2003-present Society for Chaos Theory in Psychology and Life Sciences
- 2000-present International Society for the Systems Sciences
- 1998-present System Dynamics Society
- 1983-1998 American Production and Inventory Control Society (APICS)
- 1979-1986 Society for Computer Simulation

