

GERARD P. LEARMONTH SR.

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University of Virginia  
Frank Batten School of Leadership and Public Policy  
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#### EDUCATION

Ph.D.	The University of Michigan	1983
	Field: Statistics and Management Science	
M.S.	U. S. Naval Postgraduate School	1976
	Concentration: Operations Research	
M.B.A.	New York University	1972
	Concentration: Quantitative Analysis	
B.S.	New York University	1966
	Major: Management Minor: Statistics	

#### ACADEMIC EXPERIENCE

1999-present University of Virginia  
Frank Batten School of Leadership and Public Policy (2015–present)  
Research Professor  
Director, Center for Leadership Simulation and Gaming (2015–??)  
Data Science Institute (2015–present)  
Director, Center for Large-Scale Computational Modeling  
Office of the Vice President for Research (2013–2015)  
School of Medicine (2010–present)  
Associate Professor, Department of Public Health Sciences  
School of Engineering and Applied Science (1999–2015)  
Research Associate Professor, Systems and Information Engineering  
Academic Director, Executive Master’s Program in Systems  
Engineering (2000-2003)  
McIntire School of Commerce (2000)  
Professor of Commerce (Adjunct)

1992-1994 The George Washington University  
Administrative Sciences Program, Virginia Campus  
Associate Professor  
Academic Director, Executive Master’s Program in Information Systems

1988-1989 Boston College  
Visiting Assistant Professor of Computer Science

1980-1988 Dartmouth College  
Program in Computer and Information Systems  
Vice Chairman/Acting Chairman (1987–1988)  
Director, Executive Education Program (1984–1986)  
Assistant Professor (1983–1988)  
Instructor (1980–1983)  
Amos Tuck School of Business  
Adjunct Assistant Professor (1983)

1977-1980 Eastern Michigan University  
College of Business  
Instructor

## PUBLICATIONS

Works in progress and under review:

1. Anderson B, Coulter S, Orłowski R, Ruzich B, Smedley, R, Purvis M, Learmonth G, Gerling G. Designing User Experiences for Policymakers in Serious Games in the Domain of Global Food Security. Proceedings of the 2017 Systems and Information Engineering Design Symposium, April 28, 2017.
2. Learmonth G, Bobko R, and Gan C-C. Impact of Best Management Practices on Water Quality. To be submitted to Heliyon.
3. Gan C-C and Learmonth G. Tests of Randomness as a Measure of Complexity in Physiologic Time Series. <http://arxiv.org/abs/1512.00725> [stat.ME] May 2016.
4. Gan C-C and Learmonth G. Developing an ICU Scoring System with Interaction Terms Using a Genetic Algorithm. <http://arXiv:1604.06730v1> [cs.NE] May 2016.
5. Netshikweta R, Garira W, and Learmonth G. A General Model for Diarrheal Disease with Water, Sanitation, and Hygiene (WASH) Interventions. In preparation.
6. Oyama K, Learmonth G, and Chao R. On Modeling Co-Evolutionary Dynamics in New Product Development. In preparation.
7. Learmonth G, Colosi Peterson L, and Brownlee E. Sustainable Supply Chain Innovation: A Participatory Simulation. In preparation.

Book Chapter:

1. Learmonth G and Plank J. Participatory Simulation as a Tool of Policy Informatics. Book chapter in: Governance in the Information Era: Theory and Practice of Policy Informatics, E. Johnston, Ed., Routledge Press, 2015.

Refereed journals and conference proceedings:

1. Oyama K, Learmonth G, and Chao R. Applying Complexity Science to New Product Development: Modeling Considerations, Extensions, and Implications. Journal of Engineering and Technology Management. October 2014. (<http://www.sciencedirect.com/science/article/pii/S0923474814000423>)
2. Zhang Y, Huddleston S, Brown D, and Learmonth G. A Comparison of Evaluation Methods for Police Patrol District Designs. Proceedings of the 2013 Winter Simulation Conference, December 2013.
3. Paddrik M and Learmonth G. Regulator Management of Distressed Financial Markets. Proceedings of the 2013 Winter Simulation Conference, December 2013.
4. Demarest J, Pagsuyoin S, Learmonth G, Mellor J, and Dillingham R. Development of a Spatial and Temporal Agent-based Model for Studying Water and Health Relationships: the Case Study of Two Villages in Limpopo, South Africa. Journal of Artificial Societies and Social Simulation. Vol. 15, No. 4, October 2013.
5. Mellor J, Smith J, Learmonth G, Netshandama V, and Dillingham R. Modeling the Complexities of Water, Hygiene, and Health in Limpopo Province, South Africa. Environmental Science and Technology, 2012 December 18, Vol. 46, No.
6. Fox J, Learmonth G, and Brown D., Simulating Spatial-Temporal Pulse Events in Criminal Site Selection Problems. Proceedings of SpringSim 2012, Society for Modeling and Simulation International, 2012.
7. Moore G, Langford J, Ayre M, Learmonth G, Brizga S, and Wallis P. The Murray-Darling Basin Game—A model to explore water allocation decisions. MODSIM2011, Perth, Australia.
8. Learmonth G, Smith D, Sherman W, White, M, and Plank J. A Practical Approach to the Complex Problem of Environmental Sustainability: The UVa Bay Game®,

- The Innovation Journal: The Public Sector Innovation Journal, Vol. 16(1), 2011, Article 4.
9. Boissevain B, Botchwey N, Cunningham T, Louis G, Learmonth G, Firehock F, Terni C, Swap R, Spreen CA, Samie A, Netshandama V, Dillingham R. Water and Health in Limpopo Province, South Africa: A Community-Centered Collaborative Initiative of the University of Venda and the University of Virginia. Water and Health, 137th Meeting of the American Public Health Association, November 2009.
  10. Cunningham T, Bothchwey N, Netshandama V, Boissevain J, Firehock K, Learmonth G, Louis G, and Dillingham R. Understanding Water Perceptions in Limpopo Province: A Photovoice Community Assessment. Third International Conference on Bioinformatics and Biomedical Engineering, June 2009.
  11. DeMarco D, Kovala S, Smith L, Verella JT, Learmonth G, and Patek S. Agent-based Simulation Model for Predicting Adoption Rates of Electronic Medical Records, in: Proceedings of the 2009 Systems and Information Engineering Design Symposium, G. Louis and K. Crowther, Eds., Charlottesville, Virginia, April 2009.
  12. Becker G, Celik J, Hayes R, Learmonth G. Application of Service Oriented Architecture to Emulation of Onboard Satellite Processing Systems, in: Proceedings of the 2009 Systems and Information Engineering Design Symposium, G. Louis and K. Crowther, Eds., Charlottesville, Virginia, April 2009.
  13. Berbert T, Cleaves D, Im B, Yeung D, Learmonth G. Design of a Simulation Environment for Space-Based Information Management and Distribution, in: Proceedings of the 2008 Systems and Information Engineering Design Symposium, G. Louis and K. Crowther, Eds., Charlottesville, Virginia, April 2009.
  14. Huddleston S, Learmonth G, and Fox J. Changing Knives into Spoons, in: Proceedings of the 2008 Systems and Information Engineering Design Symposium, G. Louis and K. Crowther, Eds., Charlottesville, Virginia, April 2008. Best Paper in Track Award
  15. Chao D, Datt K, Rekhi J, Learmonth G. Human-in-the-loop Simulation Testbed for Wireless Sensor Networking, in: Proceedings of the 2007 Systems and Information Engineering Design Symposium, M. DeVore, Ed., Charlottesville, Virginia, April 2007.
  16. Learmonth G and Ives B. Information System Technology Can Improve Customer Service, Data Base, Vol. 18, No. 2, Winter 1987.
  17. Ives B and Learmonth G. The Information System as a Competitive Weapon, Communications of the ACM, Volume 27, Number 12, December 1984.
  18. Merten A and Learmonth G. Operation and Evolution of Information Systems, in: Information Systems Methodology, G. Bracchi and P. C. Lockemann, Eds., Springer-Verlag, Berlin, 1978.
  19. Learmonth G. Empirical Tests of Multipliers for the Prime-Modulus Random Number Generator  $X_{i+1} \equiv AX_i \pmod{2^{31}-1}$ , in: Proceedings of the Ninth Interface Symposium on Computer Science and Statistics, David C. Hoaglin and Roy E. Welsch, Eds., Harvard University, 1976.
  20. Lewis P and Learmonth G. Statistical Tests of Some Widely Used and Recently Proposed Random Number Generators in: Proceedings of Computer Science and Statistics: 7th Annual Symposium on the Interface, W.J. Kennedy, Ed., Iowa State University, 1973.

**Invited presentations:**

1. Learmonth G. Participatory Modeling and Simulation: The UVa Bay Game® and Global Sustainable Supply Chain Game. Meeting of the Commonwealth Center for Advanced Logistic Systems, November 2013.
2. Learmonth G and Bobko, R. Informing Water Policy with Large-scale High Fidelity Simulation. APPAM 2011 Fall Research Conference, November 2011.

3. Learmonth G, Dillingham R, Firehock K, Bessong P, Samie A, Maluleke M, Mamba G, Belcher R, Upchurch P, Crihfield A. Water and Health in Limpopo: A Mobile Phone-based Data Collection System. Poster presented at the mHealth Conference, Foundation for the National Institutes of Health, Washington, DC, November 2009.

## LARGE-SCALE SIMULATION MODEL AND SERIOUS GAME PRODUCTS

1. UVa Bay Game® (Launched 2009)
2. Global Sustainable Supply Chain (Launched 2013)
3. Louisiana Coastal Resilience Game (Launched 2016)
4. Global Food Security Game (Launched 2017)
5. US Health System Game (Launched 2017)

### GRADUATE STUDENTS (\* Advisor)

<b>Current:</b>	Ph.D.	Roy Hayes	Peter Wu
		Nicolas Napoli	Brian An
		Kamwoo Lee	Cheng Wang
		Rendani Netshikweta (University of Venda) *	
<b>2016</b>	Ph.D.	Chee Chun Gan*	Annamali Muthiah
		Rujira Chasiri	Yue Sun
		Andrew Todd	Shi Pu
<b>2015</b>	M.S.	Jin Li*	Osama Eschera*
		Samantha Vacik*	Armen Melikian
		Hui Boon Low	Siddharatha Pailla
		Michael Lukas	David Dunham
<b>2014</b>	Ph.D.	Michael Vedomske	Yue Zhang
	M.E.	James Burke*	Jack Crombie*
<b>2013</b>	Ph.D.	Kyle Oyama*	Mark Paddrik
		Edward Teague	Samuel Huddleston
		Eva Andrijic	Daine Lesniak
<b>2012</b>	M.S.	Patrick Harrison*	John Slovensky*
	Ph.D.	Junrui Xu	Yuting Wang
		Lei Chen	Jonathan Fox
		Jonathan Mellor (CEE)	
<b>2011</b>	M.S.	Ryan Bobko*	Thomas Warner
	Ph.D.	Colleen Hughes	Mingyi Hong
		Joseph Shen	Alice Chan
		Jennifer Holm (EnvSci)	
<b>2009</b>	M.S.	Jeffrey Demarest*	Jin Werner
	M.S.	Michael Purvis*	
<b>2008</b>	M.S.	Caroline Lebedinsky	Kristen Graham
		Byron Caswell	Mark Orsi
		Zhenyou Guo	Xiaofeng Wang
<b>2005</b>	M.S.	Patrick Hansen	
<b>2003</b>	Ph.D.	Enrique Campos-Nañez	
<b>2002</b>	Ph.D.	Caesar Ariel Pinto	
<b>2000-2003</b>	M.E.	103 non-research students in University of Virginia Executive Master's Program in Systems Engineering	
<b>1993-1994</b>	M.S.	56 non-research students in George Washington University's Executive Master's Program in Information Systems	
<b>1982-1988</b>	M.S.	121 non-research students in Dartmouth College's Master's Program in Computer and Information Systems	

## SERVICE ACTIVITIES

### External:

Program Committee, Big Data Simulations and Decision Making, Winter Simulation Conference 2014, 2015  
External Reviewer, Chinese National Engineering Research Centres, Hong Kong Branch

### Internal:

Resilience Institute Proposal Member (2016–2017)  
Global Infectious Diseases Institute Proposal Member (2016–2017)  
Executive Committee- Synthetic Biology Institute Proposal  
Center for Global Health Faculty Mentor  
Cloud Scale Data Analytics Search Committee (2015–2016)  
Director, Center for Large-Scale Computational Modeling (2013–present)  
Director, Center for Leadership Simulation and Gaming (2015–2017)  
Cyber Security Search Committee (2016–2017)  
Simulation–Based Learning Committee (2016–2017)  
UVa President’s Interdisciplinary Committee on Sustainability

### Reviewer:

Journal of Artificial Societies and Social Simulation  
PLOS One  
Journal of Urban Technology

## HONORS AND AWARDS

2013–present	Fellow, University of Virginia Center for Global Health
2013	National Consortium for Continuous Improvement in Higher Education Leveraging Excellence Award for the UVa Bay Game® Team
2011–2012	IBM Faculty Fellowship

## OTHER PROFESSIONAL EXPERIENCE

1994–present	Broadband Network Services Incorporated Chairman of the Board, Chief Executive Officer
1990–1992	United States Office of Personnel Management The Federal Executive Institute Senior Faculty Member
1969–1975	United States Naval Postgraduate School W.R. Church Computer Center Mathematical Statistician
1962–1988	United States Navy Naval Security Group Command Lieutenant, Special Duty Officer (Cryptology)

## COURSES TAUGHT

### University of Virginia

#### Graduate courses:

- SYS6002: Systems Integration
- SYS6034: Discrete-event Stochastic Simulation
- SYS6035: Agent-based Modeling and Simulation of Complex Systems
- SYS582/682: Analysis and Design of Electronic Commerce Systems
- SYS681: Special Topics: Emerging Technologies
- SYS702: Information Technology Architecture
- SYS7063: Response Surface Methods
- SYS796: Seminar in Systems Engineering
- PHS5184/7184: Global Health Policy and Practice (School of Medicine)
- PHS7000: Biostatistics I (School of Medicine)
- PHS7001: Biostatistics II (School of Medicine)

#### Undergraduate courses:

- SYS202: Data and Information Engineering
- SYS321: Deterministic Decision Models
- SYS334: Systems Evaluation
- SYS421/621: Linear Statistical Models
- COMM424: Data Communications (McIntire School of Commerce)

### The George Washington University

#### Graduate courses:

- AdSc237: Strategic Planning and Executive Support Systems
- AdSc238: Seminar in Group Decision Support Systems
- AdSc211: Statistics in Management, Administration, and Public Policy

### Boston College:

#### Graduate courses:

- MBA core course in Management Information Systems
- Seminar in the Strategic Use of Information Technology

#### Undergraduate course:

- Introduction to Management Information Systems

### Dartmouth College:

#### Graduate courses:

- Organizations and Data
- Management of Information Systems
- Systems Analysis
- Competitive Uses of Information Systems Technology
- Database Systems
- Quantitative Analysis for Decision-Making
- Ethical and Social Implications of Computing