

Certified Modeling and Simulation Professional (CMSP) Examination Question Sources

All sources used for questions as of January 2013 are included; list subject to change and expansion as new questions are added.

E. Aleisa, M. Al-Ahmad, and A. M. Taha, “Design and management of a sewage pit through discrete-event simulation”, *SIMULATION: Transactions of the Society for Modeling and Simulation International*, Vol. 87, No. 11, November 2011, pp. 989-1001.

R. B. Allen, “Mental Models and User Models”, in M. G. Helander, T. K. Landauer, and P. V. Prabhu (Editors), *Handbook of Human-Computer Interaction, Second Edition*, Elsevier, Amsterdam Netherlands, 1997, pp. 49-63.

J. D. Anderson, *Modern Compressible Flow with Historical Perspective, Second Edition*, McGraw-Hill, Boston MA, 1990.

C. Anderson, P. Konoske, J. Davis, and R. Mitchell, “Determining How Functional Characteristics of a Dedicated Casualty Evacuation Aircraft Affect Patient Movement and Outcomes”, *Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, Vol. 7, No. 3, July 2010, pp. 167-177.

D. R. Anderson, D. J. Sweeney, and T. A. Williams, *Statistics for Business and Economics, Tenth Edition*, Thomson South-Western, Mason OH, 2008.

D. R. Anderson, D.J. Sweeney, and T. A. Williams, *Essentials of Statistics for Business and Economics, Tenth Edition*, Mason OH, Thomson South-Western, 2008.

A. Anglani, A. Grieco, M. Pacella and T. Tolio, “Object-Oriented Modeling and Simulation of Flexible Manufacturing Systems: a Rule-Based Procedure”, *Simulation Modelling Practice and Theory*, Vol. 10, pp. 209–234, 2002.

F. Babich, M. Comisso, A. Dorni, F. Barisi, M. Driusso, and A. Manià, “Discrete-time simulation of smart antenna systems in Network Simulator-2 using MATLAB and Octave”, *SIMULATION: Transactions of the Society for Modeling and Simulation International*, Vol. 87, No. 11, November 2011, pp. 932-946.

O. Balci, “Verification, Validation, and Testing”, in J. Banks, *Handbook of Simulation: Principles, Methodology, Advances, Applications, and Practice*, John Wiley & Sons, New York NY, 1998, pp. 335–393.

C. M. Banks, “Introduction to Modeling and Simulation”, in J. A. Sokolowski and C. A. Banks, *Modeling and Simulation Fundamentals: Theoretical Underpinnings and Practical Domains*, John Wiley & Sons, Hoboken NJ, 2010, pp. 1-24.

C. M. Banks, “What Is Modeling and Simulation?”, in J. A. Sokolowski and C. M. Banks, (Editors), *Principles of Modeling and Simulation: A Multidisciplinary Approach*, John Wiley & Sons, Hoboken NJ, 2009, pp. 3-24.

J. Banks, “Principles of Simulation”, in J. Banks (Editor), *Handbook of Simulation: Principles, Methodology, Advances, Applications, and Practice*, John Wiley & Sons, New York NY, 1998, pp. 3-30.

- J. Banks, J. S. Carson, B. L. Nelson, and D. M. Nicol, *Discrete-Event System Simulation, Fifth Edition*, Prentice Hall, Upper Saddle River NJ, 2010.
- J. Banks, J. S. Carson, B. L. Nelson and D. M. Nicol, *Discrete-Event System Simulation, Fifth Edition*, Prentice Hall, 2010.
- M. Bolas and I. McDowall, “Visual Displays: Head-Mounted Displays”, in D. Nicholson, D. Schmorow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 48-62.
- C. Bowers, J. Vogel-Walcutt, and J. Cannon-Bowers, “The Role of Individual Differences in Virtual Environment Based Training”, in D. Schmorow, J. Cohn, D. Nicholson (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 1: Learning, Requirements, and Metrics*, Praeger Security International, Westport CT, 2009, pp. 31-49.
- K. K. Boyer and R. Verm, *Operations & Supply Chain Management for the 21st Century*, South-Western, Mason OH, 2010.
- G. E. P. Box, J. S. Hunter, and W. G. Hunter, *Statistics for Experimenters: Design, Innovation and Discovery*, John Wiley & Sons, Hoboken NJ, 2005.
- E. F. Brigham and L. C. Gapenski, *Financial Management Theory and Practice, Sixth Edition*, The Dryden Press, Orlando FL, 1991.
- D. E. Brownlee, “The Origin and Early Evolution of the Earth”, in M. C. Jacobson, R. J. Charlson, H. Rodhe, and G. H. Orians (Editors), *Earth System Science*, Elsevier, London, 2000.
- P. E. Castro, E. Antonsson, D. T. Clements, J. E. Coolahan, Y. Ho, M. A. Horter, P. K. Khosla, J. Lee, J. L. Mitchiner, M. D. Petty, S. Starr, C. L. Wu, and B. P. Zeigler, *Modeling and Simulation in Manufacturing and Defense Systems Acquisition: Pathways to Success*, National Academy Press, Washington DC, 2002.
- P. D. Cha, J. J. Rosenberg and C. L. Dym, *Fundamentals of Modeling and Analyzing Engineering Systems*, Cambridge University Press, 2000.
- R. J. Charlson and S. Emerson, in M.C. Jacobson, R.J. Charlson, H. Rodhe, and G. H. Orians (Editors) *Earth System Science*, Elsevier, London, 2000.
- R. J. Charlson, “The Atmosphere”, in M.C. Jacobson, R.J. Charlson, H. Rodhe, and G. H. Orians (Editors) *Earth System Science*, Elsevier, London, 2000.
- D. G. Chernoguz, “The system dynamics of Brooks’ Law in term production”, *SIMULATION: Transactions of the Society for Modeling and Simulation International*, Vol. 87, No. 11, November 2011, pp. 947-975.
- J. K. Cochran, G. T. Mackulak, and P. A. Savory, “Simulation Project Characteristics in Industrial Settings”, *Interfaces*, Vol. 25, No. 4, July/August 1995, pp. 104-113.
- J. Cohn, “Building Virtual Environment Training Systems for Success”, in D. Schmorow, J. Cohn, D. Nicholson (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 1: Learning, Requirements, and Metrics*, Praeger Security International, Westport CT, 2009, pp. 193-207.

- W. N. Colley, “Modeling Continuous Systems”, in J. A. Sokolowski and C. M. Banks (Editors), *Modeling and Simulation: Theoretical Underpinnings and Practical Domains*, Wiley & Sons, Hoboken, 2010, pp. 99-129.
- R. D. Cook, *Finite Element Modeling for Stress Analysis*, John Wiley & Sons, Hoboken NJ, 1995.
- S. R. Covey, *Principle-Centered Leadership*, Simon & Schuster, New York NY, 1991.
- M. E. Davis, *Numerical Methods & Modeling for Chemical Engineers*, John Wiley & Sons, Hoboken NJ, 1984.
- P. K. Davis and J. H. Bigelow, *Experiments in Multiresolution Modeling*, RAND National Defense Research Institute, Santa Monica CA, 1988.
- B. Diamond, et al., *Extend v6 Developer's Reference*, Imagine That, Inc., San Jose CA, 2002.
- J. W. Diem, J. S. Smith, and L. A. Butler, “United States Army Operational Test Command (USAOTC) Integrated Technologies Evolving to Meet New Challenges—A Study in Cross Command Collaboration”, *Proceedings of the International Test and Evaluation Association Annual Symposium*, Baltimore MD, September 29-October 1 2009.
- R. C. Dorf and R. H. Bishop, *Modern Control Systems, Tenth Edition*, Pearson Prentice Hall, Upper Saddle River NJ, 2005.
- DSEEP Product Development Group, *IEEE P1730/Dv3.0 Draft Recommended Practice for Distributed Simulation Engineering and Execution Process (DSEEP)*, The Institute for Electrical and Electronics Engineers, New York NY, 2008.
- C. L. Dym, *Principles of Mathematical Modeling, Second Edition*, Elsevier Academic Press, Burlington MA, 2004.
- R. E. Eberts, “Computer-Based Instruction”, in M. G. Helander, T. K. Landauer, and P. V. Prabhu (Editors), *Handbook of Human-Computer Interaction, Second Edition*, Elsevier, Amsterdam, Netherlands, 1997, pp. 825-846.
- M. Eisenberg, “End-User Programming”, in M. G. Helander, T. K. Landauer, and P. V. Prabhu (Editors), *Handbook of Human-Computer Interaction, Second Edition*, Elsevier, Amsterdam Netherlands, 1997, pp. 1127-1146.
- C. E. Farrell, S. F. Sichi, and K. N. Vu, “Spacecraft Design and Development”, in L. B. Rainey (Editor), *Space Modeling and Simulation: Roles and Applications Throughout the System Life Cycle*, The Aerospace Press, El Segundo CA, 2004, pp. 225-287.
- G. S. Fishman, “Discrete-Event Simulation: Modeling, Programming, and Analysis”, Springer-Verlag, New York NY, 2001.
- P. A. Fishwick and H. Park, “Queue Modeling and Simulation”, in J. A. Sokolowski and C. M. Banks (Editors), *Principles of Modeling and Simulation: A Multidisciplinary Approach*, John Wiley & Sons, Hoboken NJ, 2009, pp. 71-90.
- P. A. Fishwick, *Simulation Model Design and Execution*, Prentice Hall, Upper Saddle NJ, 1995.
- M. D. Fontaine, D. P. Cook, C. D. Combs, J. A. Sokolowski, and C. M. Banks, “Modeling and Simulation: Real-World Examples”, in J. A. Sokolowski and C. M. Banks (Editors), *Principles*

of Modeling and Simulation: A Multidisciplinary Approach, Hoboken, Wiley & Sons, 2009, pp. 181–198

T. Forester and P. Morrison, *Computer Ethics: Cautionary Tales and Ethical Dilemmas in Computing, Second Edition*, The MIT Press, Cambridge MA, 1994.

J. Fowlkes, K. Neville, R. Nayeem, and S. E. Dean, “Training Advanced Skills in Simulation Based Training”, in D. Schmorow, J. Cohn, D. Nicholson (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 1: Learning, Requirements, and Metrics*, Praeger Security International, Westport CT, 2009, pp. 251-265.

D. Frost and G. F. Knapp, “The Joint National Training Capability Strategic Framework”, *Proceedings of the 2005 Interservice/Industry Training, Simulation and Education Conference*, Orlando FL, November 28-December 1 2005.

R. M. Fujimoto, “Parallel and Distributed Simulation”, in J. Banks (Editor), *Handbook of Simulation: Principles, Methodology, Advances, Applications, and Practice*, John Wiley & Sons, New York NY, 1998, pp. 429-464.

D. L. Giadrosich, *Operations Research Analysis in Test and Evaluation*, American Institute of Aeronautics and Astronautics, Washington DC, 1995.

A. Gordon, “Story Based Learning Environments”, in D. Nicholson, D. Schmorow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 378-392.

J. D. Gould, S. J. Boies, and J. Ukelson, “How to Design Usable Systems”, in M. Helander, T. K. Landauer, and P. V. Prabhu (Editors), *Handbook of Human-Computer Interaction, Second Edition*, Elsevier, 1997, pp. 231-254.

A. Greasley, *Enabling a Simulation Capability in the Organisation*, Springer-Verlag, London UK, 2008.

P. S. Greenlaw, L. W. Herron, and R. H. Rawdon, *Business Simulation in Industrial and University Education*, Prentice Hall, Englewood Cliffs NJ, 1962.

D. T. Greenwood, *Classical Dynamics*, Prentice Hall, Upper Saddle River NJ, 1977.

K. K. Gupta and J. L. Meek, *Finite Element Multidisciplinary Analysis*, AIAA, Reston VA, 2000.

D. Halliday, R. Resnick, and J. Walker, *Fundamentals of Physics, Sixth Edition*, John Wiley & Sons, New York NY, 2001.

P. E. Hart, N. J. Nilsson, and B. Raphael, “A Formal Basis for the Heuristic Determination of Minimum Cost Paths”, *IEEE Transactions on Systems Science and Cybernetics SSC4*, Vol. 4, No. 2, 1968, pp. 100–107.

A. Hartmann and H. Schwetman, “Discrete-Event Simulation of Computer and Communication Systems”, in J. Banks (Editor), *Handbook of Simulation: Principles, Methodology, Advances, Applications, and Practice*, John Wiley & Sons, New York NY, 1998, pp. 659-676.

S. Henderson and S. Feiner, “Mixed and Augmented Reality for Training”, in D. Nicholson, D. Schmorow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and*

- Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 135-156.
- F. S. Hiller, G. J. Lieberman, *Introduction to Operations Research, Sixth Edition*, McGraw-Hill, New York NY, 2005.
- C. Hirsch, *Numerical Computation of Internal and External Flows, Volume 1: Fundamentals of Computational Fluid Dynamics, Second Edition*, Elsevier, Amsterdam, 2007.
- J. D. Hollan, B. Bederson, and J. I. Helfman, "Information Visualization", in M. G. Helander, T. K. Landauer, and P. V. Prabhu (Editors), *Handbook of Human-Computer Interaction, Second Edition*, Elsevier, Amsterdam Netherlands, 1997, pp. 33-48.
- R. Illner, C. S. Bohun, S. McCollum and T. van Roode, *Mathematical Modelling: A Case Studies Approach*, American Mathematical Society, Providence RI, 2005.
- The Institute for Electrical and Electronics Engineers, *IEEE 1516.3 Recommended Practice for High Level Architecture (HLA) Federation Development and Execution Process (FEDEP)*, New York NY, 2003.
- The Institute for Electrical and Electronics Engineers, *IEEE Standard Glossary of Modeling and Simulation Terminology*, New York NY, 1989.
- J. Jackman, M. Richardson, P. Yuen, D. James, B. Butters, R. Walmsley, and N. Millwood, "The Effect of Pre-emptive Flare Deployment on First Generation Man-Portable Air-Defence (MANPAD) Systems", *Journal of Defense Modeling & Simulation*, Vol. 7 No. 3, July 2010, pp. 181-189.
- M. C. Jacobson, R. J. Charlson, and H. Rodhe, "Introduction", in M. C. Jacobson, R. J. Charlson, H. Rodhe, G. H. Orians (Editors), *Earth System Science*, London Elsevier, 2000.
- R. de Jonckheere and B. Preiss, "Using Simulations", in L. B. Rainey (Editor), *Space Modeling and Simulation: Roles and Applications Throughout the System Life Cycle*, The Aerospace Press, El Segundo CA, 2004, pp. 95-128.
- W. Kaplan, *Advanced Calculus, Fourth Edition*, Addison-Wesley, Redwood City CA, 1991.
- B. Knerr and S. Goldberg, "Dismounted Combatant Simulation Training Systems", in J. Cohn, D. Nicholson, and D. Schmorow, (Editors) *The PSI Handbook of Virtual Environments for Training and Education, Volume 3: Integrating Systems, Training Evaluations, and Future Operations*, Praeger Security International, Westport CT, 2009, pp. 232-242.
- A. Koochaki and S. M. Kouhsari, "Simulation of simultaneous unbalances in power system transient stability analysis", *SIMULATION: Transactions of the Society for Modeling and Simulation International*, Vol. 87, No. 11, November 2011, pp. 976-988.
- E. Kreyszig, *Advanced Engineering Mathematics, Seventh Edition*, John Wiley & Sons, Hoboken NJ, 1993.
- E. Kreyszig, *Advanced Engineering Mathematics, Ninth Edition*, John Wiley & Sons, Hoboken NJ, 2006.
- O. Labarthe, B. Espinasse, A. Ferrarini and B. Montreuil, "Toward a Methodological Framework for Agent-Based Modelling and Simulation of Supply Chains in a Mass Customization Context", *Simulation Modelling Practice and Theory*, Vol. 15, Iss. 2, February 2007, pp. 113-136.

- H. C. Lane and L. Johnson, “Intelligent Tutoring and Pedagogical Experience Manipulation in Virtual Learning Environments”, in D. Nicholson, D. Schmorow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 393-406.
- A. M. Law and W. D. Kelton, *Simulation Modeling and Analysis, Second Edition*, McGraw-Hill, New York NY, 1991.
- K. Lin, “Dead Reckoning and Distributed Interactive Simulation”, in T. L. Clarke (Editor), *Distributed Interactive Simulation Systems for Simulation and Training in the Aerospace Environment*, SPIE Critical Reviews of Optical Science and Technology, Vol. CR58, SPIE Press, 1995.
- L. M. Leemis and S. K. Park, *Discrete-Event Simulation: A First Course*, Pearson Prentice Hall, Upper Saddle River NJ, 2006.
- R. Lockhart and C. Ferguson, “Joint Mission Environment Test Capability”, *ITEA Journal*, Vol. 29, 2008, 160–166.
- R. B. Loftin, “The Future of Simulation”, in J. A. Sokolowski and C. M Banks, (Editors), *Principles of Modeling and Simulation: A Multidisciplinary Approach*, John Wiley & Sons, Hoboken NJ, 2009, pp. 247-255.
- G. L. Lohse, “Models of Graphical Perception”, in M. G. Helander, T. K. Landauer, and P. V. Prabhu (Editors), *Handbook of Human-Computer Interaction, Second Edition*, Elsevier, Amsterdam, Netherlands, 1997, pp. 107-135.
- L. E. Malvern, *Introduction to the Mechanics of a Continuous Medium*, Prentice Hall, Englewood Cliffs NJ, 1969.
- M. S. Manivannan, “Simulation of Transportation and Logistics Systems”, in J. Banks (Editor) *Handbook of Simulation: Principles, Methodology, Advances, Applications, and Practice*, Wiley & Sons, New York NY, 1998, pp. 571–604.
- G. Marsaglia, “Random Number Generators”, *Journal of Modern Applied Statistical Methods*, Volume 2, 2003, pp. 2–13.
- M. Matsumoto and T. Nishimura. “Mersenne Twister: A 623-Dimensionally Equidistributed Uniform Pseudo-Random Number Generator”, *ACM Transactions on Modeling and Computer Simulation*, Volume 2, pp. 2–13, 1998.
- T. Mayfield and D. Boehm-Davis, “Applied Methods for Requirements Engineering”, in D. Schmorow, J. Cohn, and D. Nicholson, D. (Editors) *The PSI Handbook of Virtual Environments for Training and Education, Volume 1: Learning, Requirements, and Metrics*, Praeger Security International, Westport CT, 2009, pp. 131-147.
- P. McDowell, “Games and Gaming Technology for Training”, in D. Nicholson, D. Schmorow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 205-218.
- P. McDowell, M. Guerrero, D. McCue, and B. Hollister, “Rendering and Computing Requirements”, in D. Nicholson, D. Schmorow, and J. Cohn (Editors), *The PSI Handbook of*

Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies, Praeger Security International, Westport CT, 2009, pp. 173-189.

F. D. McKenzie, "System Modeling: Analysis and Operations Research", in J. A. Sokolowski and C. M. Banks (Editors), *Modeling and Simulation Fundamentals: Theoretical Underpinnings and Practical Domains*, John Wiley & Sons, Hoboken NJ, 2010, pp. 147-180.

P. McMurry, L. Fulton, M. Brooks, and J. Rogers, "Optimizing Army Medical Department Officer Accessions", *Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, Vol. 7, No. 3, 2010, pp. 133-143.

C. J. Metvier, C. Gaughan, S. Callant, L. E. McGlynn, J. McDonnell, G. Smith, and K. Snively, "Modeling Architecture for Technology Research and Experimentation (MATREX): M&S Tools and Resources Enabling Critical Analyses", *Modeling and Simulation Information Analysis Center*, 2009, pp. 4-10.

R. R. Mielke, "Statistical Concepts for Discrete Event Simulation", in J. S. Sokolowski and C. M. Banks (Editors), *Modeling and Simulation: Theoretical Underpinnings and Practical Domains*, John Wiley & Sons, Hoboken NJ, 2010, pp. 25-56.

R. Mitchell, J. Parker, M. Galarneau, and P. Konoske, "Statistical Modeling of Combat Mortality Events by Using Subject Matter Expert Opinions and Operation Iraqi Freedom Empirical Results from the Navy-Marine Corps Combat Trauma Registry", *Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, Vol. 7, No. 3, 2010, pp. 145-155.

M. Mujica, M. A. Piera and M. Narciso, "Revisiting State Space Exploration of Timed Coloured Petri Net Models to Optimize Manufacturing System's Performance", *Simulation Modelling Practice and Theory*, Vol. 18, Iss. 9, October 2010 pp. 1225-1241.

M A. Muqsith, H. S. Sarjoughian, D. Huang, and S. S. Yao, "Simulating adaptive service-oriented software systems", *SIMULATION: Transactions of the Society for Modeling and Simulation International*, Vol. 87, No. 11, November 2011, pp. 915-931.

K. J. Musselman, "Guidelines for Success", in J. Banks (Editor), *Handbook of Simulation: Principles, Methodology, Advances, Applications, and Practice*, John Wiley & Sons, New York NY, 1998, pp. 721-743.

M. Narciso, M. A. Piera, and A. Guasch, "A Methodology for Solving Logistic Optimization Problems through Simulation", *SIMULATION: Transactions of The Society for Modeling and Simulation International*, Vol. 86, Nos. 5-6, May-June 2010, pp. 369-389.

E. Ndefo, J. Encalada, W. Hallman, W. Wang, and P. Abbot, "Launch Vehicle Design and Development", in L. B. Rainey (Editor), *Space Modeling and Simulation: Roles and Applications Throughout the System Life Cycle*, The Aerospace Press, El Segundo CA, 2004, pp. 289-368.

R. S. Nickerson and T. K. Landauer, "Human-Computer Interaction: Background and Issues", in M. G. Helander, T. K. Landauer, and P. V. Prabhu (Editors), *Handbook of Human-Computer Interaction, Second Edition*, Elsevier, Amsterdam Netherlands, 1997, pp. 3-31.

J. R. Noseworthy, "The Test and Training Enabling Architecture (TENA) – Supporting the Decentralized Development of Distributed Applications and LVC Simulations", *Proceedings of*

- the Twelfth IEEE/ACM International Symposium on Distributed Simulation and Real-Time Applications*, Vancouver Canada, October 27-29 2008, pp. 259-268.
- H. T. Odum and E. C. Odum, *Modeling For All Scales: An Introduction to System Simulation*, Academic Press, San Diego CA, 2000.
- T. I. Ören, “Rationale for a Code of Professional Ethics for Simulationists”, in Society for Modeling & Simulation International, *Proceedings of the 2002 Summer Computer Simulation Conference*, San Diego CA, July 14-18 2002, pp. 428-433.
- T. I. Ören, “Uses of Simulation”, in J. A. Sokolowski and C. M. Banks, (Editors), *Principles of Modeling and Simulation: A Multidisciplinary Approach*, John Wiley & Sons, Hoboken NJ, 2009, pp. 153-179.
- T. I. Ören, M. S. Elzas, I. Smit, and L. G. Birt, “A Code of Professional Ethics for Simulationists”, in Society for Modeling & Simulation International, *Proceedings of the 2002 Summer Computer Simulation Conference*, San Diego CA, July 14-18 2002, pp. 434-435.
- W. J. Palm, *Introduction to Matlab 6 for Engineers*, McGraw-Hill, Boston MA, 2001.
- Y. Papelis and P. Madhavan, “Modeling Human Behavior”, in J. A. Sokolowski and C. M. Banks (Editors), *Modeling and Simulation Fundamentals: Theoretical Underpinnings and Practical Domains*, John Wiley & Sons, Hoboken NJ, 2010, pp. 271-324.
- E. P. Paulo, R. Jimenez, B. Rowden, and C. Causee, “Simulation Analysis of a System to Defeat Maritime Improvised Explosive Devices (MIED) in a US Port”, *Journal of Defense Modeling & Simulation*, 2010, pp.115–125.
- M. B. Pettitt, M. Mayo, and J. Norfleet, “Medical Simulation Training Systems”, in D. Cohn, J. Nicholson, and D. Schmorow (Editors) *The PSI Handbook of Virtual Environments for Training and Education, Volume 3: Integrating Systems, Training Evaluations, and Future Operations*, Praeger Security International, Westport CT, 2009, 99-106.
- M. D. Petty, “Behavior Generation in Semi-Automated Forces”, in D. Nicholson, D. Schmorow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education: Developments for the Military and Beyond, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 189-204
- M. D. Petty, “Benefits and Consequences of Automated Learning in Computer Generated Forces Systems”, *Information & Security*, Volume 12, Number 1, 2003, pp. 63-74.
- M. D. Petty, “Verification and Validation”, in J. A. Sokolowski and C. M Banks, (Editors), *Principles of Modeling and Simulation: A Multidisciplinary Approach*, John Wiley & Sons, Hoboken NJ, 2009, pp. 121-149.
- M. D. Petty, “Verification, Validation, and Accreditation”, in J. A. Sokolowski and C. M. Banks (Editors), *Modeling and Simulation Fundamentals: Theoretical Underpinnings and Practical Domains*, John Wiley & Sons, Hoboken NJ, 2010, pp. 325-372.
- M. D. Petty, R. W. Franceschini, and J. Panagos, "Multi-Resolution Combat Modeling", in A. Tolk (Editor), *Engineering Principles of Combat Modeling and Distributed Simulation*, John Wiley & Sons, Hoboken NJ, 2012, pp. 607-640.

- D. Popken and L. Cox, “A Simulation-Optimization Approach to Air Warfare Planning”, *Journal of Defense Modeling & Simulation: Applications, Methodology, Technology*, 2004, pp. 127–140.
- R. S. Pressman, *Software Engineering: A Practitioner’s Approach*, McGraw-Hill, New York NY, 2001.
- A. B. Pritsker, “Principles of Simulation Modeling”, in J. Banks (Editor), *Handbook of Simulation: Principles, Methodology, Advances, Applications, and Practice*, John Wiley & Sons, New York NY, 1998, pp. 31–51.
- T. Pulecchi, F. Casella and M. Lovera, “Object-Oriented Modelling for Spacecraft Dynamics: Tools and Applications”, *Simulation Modelling Practice and Theory*, Vol. 18, Iss. 1, January 2010, pp. 63–86.
- L. B. Rainey (Editor), *Space Modeling and Simulation: Roles and Applications Throughout the System Life Cycle*, The Aerospace Press, 2004.
- P. F. Reynolds, A. Natrajan, and S. Srinivasan, “Consistency Maintenance in Multiresolution Simulations”, *ACM Transactions on Modeling and Computer Simulation*, Vol. 7, No. 3, July 1997, pp. 386-392.
- I. Ridpath, *Norton's Star Atlas 2000.0*, Longman Scientific & Technical, London, 1989, p. 132
- P. F. Reynolds, “The Role of Modeling and Simulation”, in J. A. Sokolowski and C. M. Banks (Editors), *Principles of Modeling and Simulation: A Multidisciplinary Approach*, John Wiley & Sons, Hoboken NJ, 2009, pp. 25-43.
- M. W. Rohrer, “Simulation of Manufacturing and Material Handling Systems”, in J. Banks (Editor), *Handbook of Simulation: Principles, Methodology, Advances, Applications, and Practice*, John Wiley & Sons, 1998, pp. 519-545.
- K. Ross, J. Phillips, and J. Cohn, “Creating Expertise with Technology Based Training”, in D. Schmorow, J. Cohn, D. Nicholson (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 1: Learning, Requirements, and Metrics*, Praeger Security International, Westport CT, 2009, pp. 66-80.
- M. B. Rosson and J. M. Carroll, “Expertise and Instruction in Software Development”, in M. G. Helander, T. K. Landauer, and P. V. Prabhu (Editors), *Handbook of Human-Computer Interaction, Second Edition*, Elsevier, Amsterdam Netherlands, 1997, pp. 1105-1126.
- R. Y. Rubinstein and D. K. Kroese, *Simulation and the Monte Carlo Method*, John Wiley & Sons, Hoboken NJ, 2008.
- J. Rumbaugh, I. Jacobson, and G. Booch, *The Unified Modeling Language Reference Manual*, Addison-Wesley, Reading MA, 1999.
- R. Sadek, “Audio”, in D. Nicholson, D. Schmorow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 90-115.
- M. Schwartz, *Principles of Electrodynamics*, Dover, Mineola NY, 1987.
- J. Scott, *Social Network Analysis: A Handbook*, Sage, London UK, 2000.

- S. Sepahban, J. Aguilar, A. Dawdy, S. Paige, and J. Sercel, “Modeling and Simulation in Conceptual Design”, in L. B. Rainey (Editor), *Space Modeling and Simulation: Roles and Applications Throughout the System Life Cycle*, The Aerospace Press, El Segundo CA, 2004, pp. 197-223.
- M. A. Seeds, *Foundations of Astronomy*, Brooks/Cole–Thomson, Pacific Grove GA, 2003.
- L. A. Segel, *Mathematics Applied to Continuum Mechanics*, Dover, 1987.
- L. Setian, *Engineering Field Theory with Applications*, Cambridge University Press, Cambridge UK, 1992.
- T. B. Sheridan, “Task Analysis, Task Allocation and Supervisory Control”, in M. G. Helander, T. K. Landauer, and P. V. Prabhu (Editors), *Handbook of Human-Computer Interaction, Second Edition*, Elsevier, Amsterdam, Netherlands, 1997, pp. 87-105.
- R. Shumaker, “Technological Prospects for a Personal Virtual Environment”, in J. Cohn, D. Nicholson, and D. Schmorow (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 3: Integrating Systems, Training Evaluations, and Future Operations*, Praeger Security International, Westport CT, 2009, pp. 355-370.
- H. A. Simon, “Prediction and prescription in systems modeling”, *Operations Research*, Vol. 38, No. 1, 1990, pp. 7-14.
- R. Sinha, C. J. J. Paredis, V. C. Liang, and P. K. Khosla, “Modeling and Simulation Methods for Design of Engineering Systems”, *Journal of Computing and Information Science in Engineering*, Vol. 1, 2001, pp. 84–91.
- J. A. Sokolowski, “Enhanced Decision Modeling Using Multiagent System Simulation”, *SIMULATION*, Vol. 79, No. 4, pp. 232-242.
- J. A. Sokolowski and C. M Banks, *Modeling and Simulation for Analyzing Global Events*, John Wiley & Sons, Hoboken NJ, 2009.
- J. A. Sokolowski, “Monte Carlo Simulation”, in J. A. Sokolowski and C. M. Banks (Editors), *Modeling and Simulation: Theoretical Underpinnings and Practical Domains*, John Wiley & Sons, Hoboken NJ, 2010, pp. 131–145.
- L. Smith, *Chaos: A Very Short Introduction*, Oxford University Press, Oxford, 2007.
- R. D. Smith, *Military Simulations & Serious Games*, Modelbenders Press, Orlando FL, 2009.
- I. Ståhl, “New Product Development: When Discrete Simulation is Preferable to System Dynamics”, *Proceedings of the 1995 EUROSIM Conference*, Vienna Austria, September 11-15 1995, pp. 1089-1094.
- J. T. Staley and G. H. Orians, “Evolution and the Biosphere” in M.C. Jacobson, R.J. Charlson, H. Rodhe, and G. H. Orians (Editors), *Earth System Science*, Elsevier, London, 2000.
- J. Stewart, *Calculus, Early Transcendentals Single Variable, Fifth Edition*, Brooks/Cole, Belmont CA, 2003.
- S. K. Stein, *Calculus and Analytic Geometry*, McGraw-Hill, New York NY, 1988.

- K. Stanney, "Section Perspective", in D. Schmorrow, J. Cohn, D. Nicholson (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 1: Learning, Requirements, and Metrics*, Praeger Security International, Westport CT, 2009, pp. 115-130.
- D. Stefanovic, N. Stefanovic, and B. Radenkovic, "Supply Network Modelling and Simulation Methodology", *Simulation Modelling Practice and Theory*, Vol. 17, Iss. 4, 2009, pp. 743-766.
- R. Stout, C. Bowers, and D. Nicholson, "Guidelines for Using Simulations to Train Higher Level Cognitive and Teamwork Skills", in D. Nicholson, D. Schmorrow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 270-296.
- H. W. Thorp and G. F. Knapp, "The Joint National Training Capability: The Centerpiece of Training Transformation", *Proceedings of the 2003 Interservice/Industry Training, Simulation and Education Conference*, Orlando FL, December 1-4 2003, pp. 234-244.
- P. A. Tipler, *Physics*, Worth, New York NY, 1982.
- A. Tolk, "Interoperability and Composability", in J. A. Sokolowski and C. M. Banks (Editors), *Modeling and Simulation Fundamentals: Theoretical Underpinnings and Practical Domains*, John Wiley & Sons, Hoboken NJ, 2010, pp. 403-433.
- U. S. Department of Defense, DOD Instruction 5000.2, *Operation of the Defense Acquisition System*, 2008.
- J. C. Van Horne and J. M. Wachowicz, Jr., *Fundamentals of Financial Management, Seventh Edition*, Prentice Hall, Upper Saddle River NJ, 2001.
- G. A. Wainer and K. Al-Zoubi, "An Introduction to Distributed Simulation", in J. A. Sokolowski and C. M. Banks (Editors), *Modeling and Simulation Fundamentals: Theoretical Underpinnings and Practical Domains*, John Wiley & Sons, Hoboken NJ, 2010, pp. 373-402.
- L. Wall, T. Christiansen, and J. Orawnt, *Programming Perl Third Edition*, O'Reilly, Sebastopol CA, 2000.
- J. Weckert and D. Adeney, *Computer and Information Ethics*, Greenwood Press, Westport CT, 1997.
- R. Weinstock, *Calculus of Variations*, Dover, Mineola NY, 1974.
- G. Welch and L. Davis, "Tracking for Training in Virtual Environments: Estimating the Pose of People and Devices for Simulation and Assessment", in D. Nicholson, D. Schmorrow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 23-47.
- J. F. Wendt (Editor), *Computational Fluid Dynamics: An Introduction*, Springer-Verlag, Berlin, 1992.
- M. Whitton and J. Wendt, "Appendix A: Modeling and Rendering", in D. Nicholson, D. Schmorrow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 15-20.

M. Whitton and R. B. Loftin, "Section Perspective", in D. Nicholson, D. Schmorrow, and J. Cohn (Editors), *The PSI Handbook of Virtual Environments for Training and Education, Volume 2: VE Components and Training Technologies*, Praeger Security International, Westport CT, 2009, pp. 1-14.

Wolfram Research, *A Quick Tour of Mathematica 5*, Wolfram Media, Champaign IL, 2004.

O. C. Zienkiewicz, R. L. Taylor and J. Z. Zhu, *The Finite Element Method: Its Basis and Fundamentals, Sixth Edition*, Elsevier, Amsterdam, 2005.