

Curriculum Vitae of D. E. Stevenson

PERSONAL DATA

Associate Professor
School of Computing
Clemson University
Clemson, SC 29634-1906
864/656-5880
steve@cs.clemson.edu

EDUCATION

Ph.D., Clemson University, 1983, Mathematical Sciences.

M.S., Rutgers University, 1975, Computer Science.

A.B., Eastern Michigan University, 1965, Mathematics.

EXPERIENCE

ACADEMIC EXPERIENCE

Clemson University, School of Computing

Director, Insitute for Modeling and Simulation Applications Nov, 2003–present and
Associate Professor, 1985–present

Assistant Professor, 1983–1985.

Lecturer in Computer Science, 1980–1983.

Fairleigh-Dickinson University, Department of Mathematics and Computer Science Teaneck, N.J.

Adjunct Professor 1977-1979.

INDUSTRIAL EXPERIENCE

Member, Technical Staff, Bell Telephone Laboratories, Piscataway, N.J., 1969-1980.

Modeling. Developed various discrete event simulation and analytical models relating to computer system performance. Developed continuous simulation system for theoretical biophysics department.

Consultant. Served as a member of a trouble-shooting team within Bell System. Participated in or reviewed many system proposals and designs.

System Development. Helped implement secondary indices in IMS while on loan from BTL. Developed uniform randomization technique for databases. Involved in early Unix and C development.

MILITARY EXPERIENCE

Captain, Infantry, United States Army, 1965–1969. Combat duty in Viet Nam. Combat Infantrymen's Badge, Bronze Star, and Cross of Gallantry, Second Class (Vietnamese).

PROFESSIONAL MEMBERSHIPS

Association for Computing Machinery (ACM), 1969–present

Society for Computer Simulation (SCS), 2000–present

Society for Industrial and Applied Mathematics (SIAM), 1982–present

IEEE, 2007–present

PROFESSIONAL ACTIVITIES

Member, IEEE-SA P1516.4, Verification and Validation of Federated Simulations. 2007–present.

Member, Supercomputing 200x Conference Education Committee. 2007–present. Instructor at Supercomputing Conference.

Co-program chair with Dr. David C. Gross, Boeing, of Foundations '04.

Co-program Chair with Dr. Dale Pace, Johns Hopkins University, of FOUNDATIONS '02 workshop on the state of verification and validation of simulations, to be held at Johns Hopkins University, 22-23 October, 2002.

Chair, Education Track, Society for Computer Simulation Conference SCSC '02, 15-18 Aug, 2002, Society for Computer Simulation.

Member, Program Committee, Society for Computer Simulation Conference SCSC '01, Orlando FL. July, 2001, Society for Computer Simulation.

Presenter, Workshop Leader, NSF-CTEP funded workshop “Faculty Workshop on Computer Science, Math and Science Instructional Reform” at New Mexico Highlands University, April 6-7, 2001.

Advisor, Departmental Honors Program, 1998–present

Advisor, Student ACM Chapter, 1998–2007.

Coach, Student Programming Team, 1998–2007.

Advisor, Upsilon Pi Epsilon Honorary Program, 1999–2007, 2009–present.

Instructor, Shodor Computational Science Institute, June, 1998-2001.

Chief Instructor, National Computational Science Institute, May 2002–present.

Instructor, 5 Day Computational Science and Engineering Course for Associated Colleges of the South. Furman University. June, 1997.

Instructor, several one day Workshops for Teachers and Administrators in Pee Dee, Latta, SC. Fall, 1997–1998.

Member, Undergraduate Computational Engineering and Science Advisory Board, Department of Energy, 1994–1997.

Founder and first moderator, Parallel Processing News Group (comp.parallel), USENET, 1987–1994. Instituted the *Parlib* system reported in *IEEE Parallel & Distributed Technology Systems & Applications*, 1(1), February 1993.

Chairman, Special Interest Group for T-Series, Array User Group, Floating Point Systems, 1986-1990.

PUBLICATIONS

BOOKS

D. E. Stevenson. *Programming Language Principles by Example*. Boca Raton, FL: Auerbach Publications. October, 2006. 0-8493-7016-7.

PROCEEDINGS EDITED

David C. Gross, D. E. Stevenson, Simone Youngblood, and Bernard P. Zeigler. *V&V State of the Art: Proceedings of Foundations 2004, a Workshop on Model and Simulation Verification and Validation for the 21st Century, October 13–15, 2002, Tempe, AZ*. San Diego, CA: The Society for Modeling and Simulation, 2004. CD only.

Dale K. Pace, D. E. Stevenson, and Simone Youngblood, eds. *V&V State of the Art: Proceedings of Foundations '02, a Workshop on Model and Simulation Verification and Validation for the 21st Century, October 22-24, 2002, Laurel, MD*. San Diego, CA: The Society for Modeling and Simulation, 2002. ISBN 1-56555-256-3. CD only.

REFEREED JOURNAL PUBLICATIONS

D. E. Stevenson. “Scientific Computation.” *Physics Today*. Aug. 2010. 49–50.

D. E. Stevenson. “Models as Arguments: An Approach to Computational Science Education.” International Conference on Computational Science, Baton Rouge, LA. May 24-26, 2009.

Jennifer Parham, Donald Chinn, and D. E. Stevenson. “Using Bloom’s Taxonomy to Code Verbal Protocols of Students Solving a Data Structures Problem.” Proceedings of the Southeast ACM Conference, Clemson SC, March 19-21, 2009.

Lt. Col. Dean Bushey, USAF, and D. E. Stevenson. “Intermediate Results in Expertise in Computational Science.” FECS 2007.

D. E. Stevenson and Jennifer Parham. “Problem-Based and Case-Based Methods in Computer Science.” *The Creative College Teaching Journal*. Vol 3. No 1. 2006. 53–66.

D. E. Stevenson. “The Problem with Problems in Computational Science and Engineering Problem-Based Learning: The SQS Approach.” Accepted “International Conference in Computational Science Education.”, 2006.

D. E. Stevenson, “Free Programming”. *Journal of Computing Sciences in Colleges*. 16(2). Dec, 2002. 295–305.

D. E. Stevenson. “The Michelson-Morley Experiment as a Case Study in Validation.” *Computers in Science and Engineering*. Nov-Dec, 2002. 40–51

D. E. Stevenson, “A Critical Look at Quality in Large Scale Simulations,” *Computing in Science and Engineering*, May-Jun., 1999, 53–63.

D. E. Stevenson, review of *Great Ideas in Computer Science: A Gentle Introduction* in *International Journal of Scientific Programming*, 6(4), 1998. 399–400.

D. E. Stevenson, “Introducing Computational Science Methods Using Parallax”, *SIAM Review*. 40(1). Mar, 1998. 81–86.

Refereed Conference Presentations

“Problem Solving Principles and Free-Writing Techniques in A Computer Science Class”, ACMSE 2003, Savannah Georgia. April, 2003.

“Formal Methods in Validation.” Proc. of SCSC '02, San Diego, CA, 14–18. Jul. 2002. San Diego, CA: Society for Computer Simulation. CD version.

“How Do You Know Your Simulation is Right?”. First SIAM Conference on Computational Science and Engineering, Washington, DC, Sep 20–24, 2000.

“Computational Science and Engineering: Science in the 90s”, International Conf. on Mathematics and the Web, hosted by Department of Mathematics, Stockholm University, Stockholm, Sweden, Oct 22-27, 1995.

“A Computationalist Looks at the Web”, International Conf. on Mathematics and the Web, hosted by Department of Mathematics, Stockholm University, Stockholm, Sweden, Oct 22-27, 1995.

Reviewed Abstracts

D. E. Stevenson, “Developing a constructive theory of Euclidean geometry: the first twenty-eight theorems” *Bull. ASL*. 2(4). 1996. 463–464.

D. E. Stevenson, “Encapsulating Semantics: An approach to unifying semantic concepts,” *Conf. on the Mathematical Foundations of Programming Semantics*, Kansas State University, Apr. 11-12, 1985. 1 page. (Abstract only)

Reviewed Technical Papers, Bell Telephone Laboratories.

Eduardo D. Sontag and D. E. Stevenson, “Remarks on Multiserver Multipriority Queuing Models Related to MVS Job Scheduling,” Jan., 1981. 20 pages.

“Choosing Control Interval Size in VSAM,” Mar., 1980. 8 pages.

“ESCHER Physical Input-Output Subsystem,” Feb., 1980. 16 pages.

“Estimating Resource Requirements Via Steady State Probabilities,” Feb., 1980. 18 pages.

“The ESCHER System-Introduction,” Dec., 1979. 16 pages.

“The Number of Data Characters per Physical Device Record in Direct Access Files,” Sep., 1979. 3 pages.

“A Continuum of Buffer Replacement Strategies,” Jan., 1977. 12 pages.

“Database Management Primitives and the SLIPDISC System,” Mar., 1977. 24 pages.

“Database Management Primitives and their Relation to Operating Systems,” Jul., 1975. 17 pages.

“TESTBED - A Proposed Approach to Computer Software Development,” Jun., 1975.
23 pages.

PRESENTATIONS

INVITED PRESENTATIONS

R. M. Panoff and D. E. Stevenson, “The National Computational Science Institute” Consortium for Computing in Small Colleges Conference CCSC '01, David Lipscomb University, Nashville TN, Nov 1–2, 2001.

“An Evidence-Based Approach to Validation”. Sandia National laboratory. Apr. 6, 2001.

“A Unified Framework for VV&A Research”. Summer Computer Simulation Conference. The Society for Computer Simulation International, Vancouver, BC, Canada, Jul. 18, 2000.

“Validation and Verification: A CSE View”. Sandia National Laboratories, Jan. 23, 1998.

“Computational Science and Engineering for Computer Science,” Vanderbilt University, Mar. 15, 1996.

“Applications of Geometry at Clemson,” Geometry Center, University of Minnesota, Oct. 7, 1994.

“Computational Science and Engineering,” George Washington University, Mar. 15, 1995.

“Computational Science at Clemson,” Department of Energy Conf. on High Performance Computing Education, Albuquerque, NM, Feb 11, 1993.

“Research Frontiers for Computer Science in Computational Science,” Virginia Tech, Apr. 8, 1992.

CONTRIBUTED PRESENTATIONS

R. H. Nowaczyk, J. S. Greenstein, G. Fadel, D. E. Stevenson. “Assessing Collaborative Work in the Science and Engineering Disciplines.” South Carolina Higher Education Assessment Conf., Myrtle Beach, SC, Nov, 1996.

“Developing a Constructive Theory of Euclidean Geometry: The First 28 Theorems.” Ann. Meeting of the Association for Symbolic Logic, Mar. 8–12, 1996.

“1001 Reasons for Not Proving Your Programs Correct: a survey,” accepted by 5th Conf. in Philosophy and Computer Science, 8-12 Aug., 1990, Stanford University. (Proceedings never published.)

“Computational Science at Clemson,” Science and Technology Week, Benedict College, Apr. 6, 1990, Columbia, SC.

Tutorial on Distributed Processing, University of South Carolina Computer Science Symposium, Apr. 7-8, 1989.

“The nC Programming Language,” 35th Ann. Meeting of SIAM, Denver, CO, Oct. 12-15, 1987. (No Proceedings.)

“The nC Programming Language,” *Array Users Group*, Montreal, Canada, Apr. 27–29, 1987.

PANEL MEMBER

“Skills versus Concepts: Does Industry Know What is Best?”, ACM Southeast Conference, Mar. 17, 2001, University of Georgia.

Computational Science and Engineering, SIGCSE Meeting, Mar. 10, 2000.

Computational science and engineering, SIGCSE Meeting, Mar. 2, 1995.

Computational science education, Scalable High-Performance Computers Conf., Williamsburg, VA, Apr. 26–29, 1992.

Computational science education, ACM Regional Conf. Raleigh, NC, Apr. 9–10, 1992.

Education in Supercomputing, “Supercomputing ’91”, Albuquerque, NM, Nov 18–22, 1991.

TECHNICAL REPORTS, CLEMSON UNIVERSITY

D. E. Stevenson, “Principles for a Constructive Foundation to Euclidean Geometry.” TR number pending.

D. E. Stevenson and Mark. K. Smotherman, “Counting in Floating Point Considered Harmful,” submitted to *SIAM Review*. TR number pending.

D. E. Stevenson, “What Is Computational Knowledge and How Do We Acquire It?” submitted to the PreComet, the IFIPS Working Group on Programming Theory.

“A Constructive Theory of Euclidean Geometry: The first twenty-eight theorems,” TR 95-116. 1995. 15 pages.

“Challenging Computer Oriented High School Students with Non-Euclidean Geometry” TR 95-109. 1995. 6 pages.

“W2C: A WAM to C Assembler”. TR 95-102. 1995. 7 pages.

“Software Engineering Frontiers in Computational Science and Engineering.” TR 95-101. 1995. 7 pages.

Nadakumar Sankaran, H. Grossman, D. E. Stevenson, and J. B. Green, “Restricted Permutation Trees: Construction and Semantics”. TR 94-115. 1994. 16 pages.

“A Computational Science Manifesto”, TR 93-113, 1993. 32 pages.

“Computational Structures and Their Use in Modeling Systems,” Technical Report¹, Department of Computer Science, Clemson, SC. 1985.

“An Equivalence between Programs and Nets,” Technical Report², Department of Computer Science, Clemson, SC. 1985.

POSTERS AND MISCELLANEOUS PRESENTATIONS

D. E. Stevenson. “Formal Definition of Validation.” *SCSC '02, San Diego, CA, 14–18 Jul. 2002.*

D. E. Stevenson and Dale Pace, “Status of Foundations '02.” Jan. 19, 2001. Defense Modeling and Simulation Office.

“Multidisciplinary Programs at Clemson University,” SIAM National Conf., Charlotte, NC, Oct. 23–26, 1995. (Poster).

D. E. Stevenson and D. D. Warner conducted a two-day seminar on distributed computing at *FPS Corporation* in Portland, OR, Apr. 24-27, 1991.

James C. Hite and D. E. Stevenson, “Rural Development in Thunen Space: Formulation and Testing of a Baseline Model,” North American Meeting of the Regional Science Association, Boston, MA, Nov. 10, 1990.

“Computational Science at Clemson,” South Carolina Academy of Sciences Ann. Meeting, Mar. 30, 1990, Charleston, SC.

“A Distributed Kernel for Logic Programming,” SIAM Conf. on Parallel Processing, Chicago, Dec, 1989. (Poster).

“Issues in the Design of Languages for Parallel Scientific Computing,” Clemson University Workshop on Parallel Computing, Nov. 18-19, 1987,

¹During 1980-1990, technical reports were unnumbered

²During 1980-1990, technical reports were unnumbered

“Fortran 9y: Concepts for Parallel Processing,” *SIAM Scientific Computing Conf.*, Los Angeles, CA, Dec 1 - 4, 1987. (Poster.)

D. E. Stevenson and D. D. Warner, “The FPS T-Series Hypercube.” Supercomputer and Networking Conf., George Mason University, Jun. 9-11, 1987.

R. A. Rankin (presenter), J. D. Welsh, D. E. Stevenson, M. Q. Tran and W. R. Griffiths, “Site of Rebleeding in Patients with Liver Disease,” presented at *The Fourteenth Ann. William Beaumont Gastrointestinal Symposium for Federal Service Physicians*, William Beaumont Army Medical Center, El Paso, TX. Mar. 26-28, 1985.

R. Nowaczyk (presenter) and D. E. Stevenson, “Some Results in Predicting Success in Computer Science Courses,” *Southeastern Psychological Association*, Atlanta, GA, Mar., 1985.

HONORS AND AWARDS

Voted Professor of the Year in Computer Science by the Computer Science African-American Alliance, 2004-2005.

Voted Professor of the Year in Computer Science, 2002–2003.

Nominated for Excellence-In-Teaching award (Student Government), 1994.

Computational Science and Engineering Innovation Award, Undergraduate Computational Engineering and Science Group, Department of Energy, 1994.

SPONSORED RESEARCH

Barbara Speziale, PI. Bob Ballard, Biological Sciences; Calvin Williams, Mathematical Sciences; Jeff Appling, Chemistry; Matt Ohland, Freshman Engineering; D. E. Stevenson, Computer Sciences; John Wagner, Geology; Sue Lasser, PEER all Co-PI. CU-STEP: Enhancing the Undergraduate Experience Through Research and Curriculum Development \$1,989,621. 5 years. Commence 1 September 2005.

Robert M. Panoff, PI. David Joiner, Kean College; Marty McClelland, NCCU, Stephen I. Gordon, OSC. D. E. Stevenson *The Computational Science Reference Desk* DUE-0435187 \$2.8M. 1 Oct 2004 to 30 Sep 2008.

R. M. Panoff, H. P. Hirst, E. Jakobson, D. E. Stevenson. *National Computational Science Institute*. NSF DUE-0127488. 3 years. \$2.75M. 2001.

D. E. Stevenson. *Computational Science in the Biological and Chemical Sciences*. Provost Innovation Fund and OTEI. \$27,564. 2000.

D. E. Stevenson and Daniel D. Warner. *Clemson Computational Science and Engineering Fund*. Grant from Shodor Education Foundation, Inc. Initial Funding, \$25,000. Periodic donations for total of approximately \$167,000 (15 Sep 02). 1999–present.

D. E. Stevenson and David Chandler (student). *Spyglass Development*. Sandia National Laboratory BG5448, 1 year. \$18,564. 1999.

R. M. Panoff and C. Edge, *Shodor Computational Science Institute*. NSF DUE-9752815, 3 years. Award: \$155,114. 1997.

D. E. Stevenson. *Validation and Verification of Scientific Models*, PI, US Army, TACOM DAAE07-97-C-X130. 1 year. \$84,715. 1997.

D. E. Stevenson, S. Fones, J. Leudeman. *Development of Pre-Service Teacher Course in Science*, NASA, 2 years. \$22,000. 1996.

Symmetry in Education, University of Wisconsin-Madison, \$21,725. (Part of UW-M CCD grant). (CoES 96-414).

G. Fadel (Mechanical Engineering), Investigators: M. Bridgewood, (Electrical and Computer Engineering), Richard Figliola (Mechanical Engineering), J. Greenstein (Industrial Engineering), M. Kostreva (Mathematical Sciences), R. Nowaczyk (Psychology), D. E. Stevenson (Computer Science). *The Component Packaging Problem: a vehicle for the development of multidisciplinary design and analysis methodologies*, NASA. 3 years. \$600,000. 1994.

R. Panoff and C. Edge (North Carolina Supercomputing Center), Investigators: D. E. Stevenson, and D. D. Warner. *The Carolinas Summer Institute in Computational Science*, NSF, 2 years. \$181,879. 1992.

J. M. Westall and D. D. Warner. Investigator: D. E. Stevenson. *Development of Corps Level Combat Simulation Model*, DoD, summer investigator, Funded at \$660,000 for three years, DoD, \$660,000. (1983–1985).

OTHER SPONSORED ACTIVITY

Development of the *nC* programming language for Floating Point Systems in exchange for \$375,000 worth of hardware. (One of three projects in the deal.) (1 year) 1986.

Researcher, *Sisal Scientific Computing Initiative*. Presented by Cray Research and Lawrence Livermore National Laboratory. 1991. Free supercomputer time and software.

PROPOSAL ACTIVITY — SUBMITTED BUT NOT FUNDED

Felix Barron. "Protein Structure, Food Safety, and Bioinformatics." Submitted to FDA. \$33,182. Not Funded.

East Carolina Education Consortium. *Mathematical Thinking of Preschoolers in Technology Enhanced Settings*. NSF. \$380,038.

Michael Novak, Principal Investigator. *Lesson Weaver*. NSF ITR. \$138,725. 2000.

East Carolina Education Consortium. *Hand-In-Hand*, an exploration into the mathematical capability of pre-kindergarten children. \$1,706,568. 1999.

D. E. Stevenson. Clemson Multidisciplinary Education and Research Institute. \$1,633,167. NSF-IGERT. 1999.

Dale Linville and D. E. Stevenson, PI. "Implementing Weather Driven Crop Models for Soybean Production Strategies." \$13,500. 1999.

D. E. Stevenson, *Developing Validation and Verification Methodologies for Large Scale Simulations*, EPSCoR 98-02, \$158,000. Targeted to Sandia National Laboratory, Science-Based Storage Stewardship and Advanced Science Computing Initiative. 1998.

John Luedeman, D. E. Stevenson, D. D. Warner, Technology Innovation Challenge Grant, US Department of Education. \$5,000,000 over five years. 1998.

Applications of Computational Molecular Modeling, PI: D. E. Stevenson. Investigators: David Bruce (ChemE), Graham Jones (Chem), Robert Latour, Jr (BioE), Chris Cox (MTHSC), Vince Ervin (MTHSC), Terry Huntsberger (USC-CS), Mike Colvin (Sandia National Lab), \$499,302. 1997.

Interdisciplinary Design Laboratory, PI: G. Fadel (ME), Investigators: V. Anand (EG), V. Gharpuray (BioEng), Roger Gomes (Mkt), J. Greenstein (IE), D. E. Stevenson (CpSc), Lonny Thomposon (ME), \$192,730.

Center for Advanced Engineering Fibers and Films, NSF, investigator, 1996, \$9,500,000 (5 years).

Calhoun honors seminars: a multidisciplinary core curriculum for junior division honors students, PI: Stephen Wainscott, one investigator of many. NEH/NSF/FIPSE. \$216,889. 10/94-8/95.(9 mos academic at 30).

Virtual reality in mechanical engineering design, Co-PI. NSF. \$319,210. 10/94 (3 years. Effort: 3 mo academic, 3 mo summer).

The National Institute in Computational Science Education, submitted by North Carolina Supercomputing Center, Investigator. 5/93 \$908,433. (1994 start)

Undergraduate Research in Computational Science, P. I., NSF Office of Cross-Disciplinary Activities, \$86,869. (1993 start)

Undergraduate Faculty Enhancement in Computational Science, PI, SCUREF. \$58,958. (Approved, but funds never received.) 1992.

High School Involvement in Computational Science, PI, SCUREF. \$149,400. (Approved, but not funded). 1992.

Implications of the Thunen Paradigm for Rural Development, CoPI Southern Rural Development Center. \$19,950. 1992.

Development of a Introductory Level Course in Computational Science, PI, NSF, \$227,336, (1992)

A Research Focus on Computational Science, as part of the South Carolina EPSCoR grant proposal to NSF. \$628,000 over five years. (1991)

Language Development, PI, Concurrent Computer Corporation. (1990)

Center Proposal for Mathematical Biology, investigator, NSF. (1988).

Computability in Parallel Systems, PI, AFOSR, \$102,005. (1988).

ONR Block Grant to Computer and Mathematical Sciences departments under the University Research Initiative program, Investigator. (1986).

Cognitive Artificial Intelligence (AI) Program, investigator, Office of Naval Research and Oak Ridge Associated Universities. (1985).

Modelers' Workbench Development for the Supercomputing Environment, Co-PI. (1985).

Cell Ion Transport Modelers Workbench, NIH Application Number 1 R24 RR01774-01, proposed start date: July, 1983. Amount Requested \$538,121.

GRADUATE STUDENT ADVISING

CURRENT DOCTORAL STUDENTS

Andrea Campbell. New student interested in education.

Carl Martin. Natural Language Processing in Biblical Translations.

GRADUATED DOCTORAL STUDENTS

Rose Lowe. New Rule Generation for Genetic Algorithms. December, 2010.

Jennifer Parham-Mocello. "A Cognitive Model for Problem Solving in Computer Science". Dec, 2009.

Edward Doyle, “Two Categories of Refutation Decision Procedures for Classical and Intuitionistic Propositional Logic”, Dec, 2008.

Ken E. Kennedy, “CAPS: Concurrent Automatic Programming System”, May, 2008

Lt. Col. Dean E. Bushey, USAF. Critical Thinking Traits of Top-Tier Experts and Implications for Computer Science Education. 2007.

David A. Sykes, “ObjectCulture: Achieving Efficient Implementations and Effective Interactions in Object-Oriented Programs,” May, 1995.

W. L. George, “A Data Parallel Communications Library Design Based on Multi-Dimensional Vector Exchange Primitives,” Dec, 1995.

Abbas Youssefi, “An Independent Language and Machine Independent Optimization Issues in Automatic Code Generations for Vector Processors,” Aug, 1989.

MASTERS GRADUATES

1. James W. Norman, Bioanalyze tool for SBML applications.
2. Yu (Denis) Sun, Molecular dynamics. 2003.
3. Daniel Fasolino, Formal Methods. 2003.
4. Nicolaus Glover, Neural Nets. 2002.
5. Brian Corbin. CORBA implementation in ML. 2001.
6. Tilak Yalamanchili. Information in Computation. 2001.
7. Jeff Murdoch. Textile Spinning Simulation. 2000.

Prasad Koya. Performance of ATM Networks. 1998.

Jason Russ. Chaos in Science and Computer Science. 1997.

Don Owens. Neural Networks and Genetic Algorithms. 1997.

M. Shah. Human-computer Support Requirements and their Implications for Operating System Design. 1993.

M. S. Percy. “Distributed Databases in Logic Programming.” (Thesis) 1993.

Charles S. Summers. “Para-tiger fortran: Support for Scientific Applications on Distributed Computing Systems.” 1990.

Scott Applegate. “Data Dependency Graph Algorithms in Prolog.” 1989.

Karlyn Ammons. “Restructuring Compilers for Parallel Processors.” 1989.

G. Raj. "Parallel Programming in Logic: The concurrent Prolog approach." 1988).

J. Stamey. "Time Varying Cellular Automata." 1988.

Eugene Patton. "The DNA Sequencing Analysis Project." 1987.

G. Rangarajan. "Theoretical Developments on Communicating Sequential Processes." 1987.

Wayne Smith. "Linear-time computability of subgraph problems on series-parallel graphs." 1987.

Hubert Hickman. "Three dimensional Lindenmayer systems." 1986.

Thomas David Rivers. "A subset of TDR language." 1986.

Yen Hwa Lee. "Concurrent programming in ADA and Modula-2." 1984.

Randy Pafford. "Expert computer systems." 1984.

UNDERGRADUATE ADVISING AND RESEARCH

Head of Departmental Honors Program.

UNDERGRADUATE HONORS THESES

1. Sean Daugherty. Monte Carlo Integration, 2000.
 2. Warren Crawford, Language Knowledge in Programming. 1999.
- co-chair J. Kennedy, ME. Benjamin A. Lagrange, Visualization of materials processes. 1998
- Thomas Macklin, Computation Theory. 1997.

UNDERGRADUATE RESEARCH

Zackery Musgrave. Semantic Web. 2010.

Andrew Ouzts. Semantic Web. 2009-2010.

Creative Inquiry.

Michael Murphy. GIS-Meteorological Data Visualization. 2002.

David Chandler. Spyglass Development, funded research. 1999–2000.

David Chandler. Verification of Java Arithmetic. 1998–1999.

Ariel Wolfer. Verification of MAPLE Support for the Symbolic Solution of Differential Equations.

Benjamin Sangster. Support in Software Engineering for the Validation and Verification of Scientific Simulations.

Jennifer Ford, “A Computer Simulation of the Human Body’s Reaction to Microgravity.” Funded. by South Carolina Space Grant Consortium. In progress. 1997–1998.

EUREKA PROGRAM

James Vaughn, Parallel Processing, 2009.

Brian Bowers and Scott Mattison, Pandemic Modeling, 2008.

1. Ian Wood, Fuzzy Arithmetic, 2007.

GOVERNOR’S SCHOOL MENTOR

Paul Taylor. Prolog. 2005.

Granger Greene. Computational Biology. 2002.

David Chandler and Matt Michaud, in non-Euclidean geometry, 1996.

Kevin Backhurst and Andy Moise, in non-Euclidean geometry, 1995.

James Hollifield and Mike Aspel, in non-Euclidean geometry. 1994

Christina Billings in logic programming. 1990.

TEACHING

TAUGHT COURSES

CPSC 110, Introduction to Computer Science.

CPSC 111, Elementary Computer Programming in C/C++.

CPSC 210, Programming Methodology.

CPSC 241 (212), Computer Science IV.

CPSC 330, Computer System Organization.

CPSC 350, Introduction to the Theory of Computation.

CPSC 405/605, Introduction to Graphics.
CPSC 422/622, Introduction to Operating Systems.
CPSC 428/628, Design and Implementation of Programming Languages.
CPSC 450/650, Foundations of Theoretical Computer Science.
CPSC 455/655, Introduction to Computational Science.
CPSC 810, Introduction to Artificial Intelligence.
CPSC 827, Formal Languages.
CPSC 828, Theory of Programming Languages.
CPSC 881, Course titled “Visualization in N -Dimensions”.
CPSC 881, Fortran 95 in support to requests by professors
CPSC 951, Seminar in Algorithms: computational science. (overload).
CPSC 955, Seminar in Formal Methods (overload).

NEW COURSE DEVELOPMENT

CPSC 350, Introduction to the Theory of Computation.
CPSC 455, Introduction to Computational Science.
CPSC 810, Introduction to Artificial Intelligence.
CPSC 824, Principles of Parallel and Distributed Processing.
CPSC 827, Formal Languages.

HONORS COURSES DEVELOPED

Honors 102 - with R. H. Nowaczyk (Psychology) and S. Silvers (Philosophy). Cognitive and computational science.

SEMINARS LED

CPSC 950, Seminar in Education jointly held with Dr. Robert Horton (School of Education) and Dr. Kenneth Weaver (School of Computing)
CPSC 951 - Seminar in Computational Science.

CPSC 951 - Logic.

CPSC 955 - Seminar in Formal Methods.

UNIVERSITY SERVICE

DEPARTMENTAL COMMITTEES

Graduate Affairs (chairman, 1985–1986) member 1984–1986, 1987–1993.

Library Liaison (1984–1988).

Research (1985–1986).

Faculty Search Committee — (1986).

PhD Examination Committee (1989–1990, 1992–2000).

MS Examination Committee (1995).

Undergraduate Affairs Committee (1994–present).

Honors College Representative, (1999–present).

UNIVERSITY COMMITTEE APPOINTMENTS AND SERVICE

Strom Thurmond Institute, Academic Advisory Committee 1987 - 1991. Chairman, 1987-1990.

Search Committee for Assistant Director of Strom Thurmond Institute, 1988.

Environmental Scanning Subcommittee of the Long Range Strategic Planning Committee, 1989-1992, 1994-1995.

Budget and Funding Task Force, University Reorganization Task Force, 1994.

Faculty Senate, 1993–1996. Research Committee, Executive Committee.

College Curriculum Committee. 1999–present.

University Undergraduate Committee 2001.

Student Academic Grievance Committee for CoES. 2001–present

NATIONAL COMMITTEES

“NSF Workshop on the Role of High Performance Computing in Education,” October 28-30, 1990. October 1990.

Philanthropic Foundations.

Founding Director and Chairman of the Board, Shodor Educational Foundation, Incorporated. 1994–present.

PROFESSIONAL SERVICE

Associate Editor, Journal of Computational Science Education, 2009–present.

Member, InnoVenture Conference Planning Committee, 2006–present.

Member, IEEE Standards Activity P1516.1, Verification, Validation, and Accreditation of Federated Simulations. 2007–present.

Member, Supercomputing 200x Conference, education committee. 2007–present. Instructor at Supercomputing Conference.

Member, Board of Directors, The Society for Computer Simulation. 2004–present.

Member, Ad Hoc Committee on the Body of Knowledge in Simulation. Society for Computer Simulation. 2001–present.

Founding Member, Upstate Technology Innovation Award Committee, 1999–2000.

MISCELLANEOUS

Final Examiner for Research Report, University of the Witwatersrand, South Africa.

Reviewer, *International Conference on Parallel Processing, NECC, College Mathematics Journal, Simulation, IEEE Software, The Society for Computer Simulation, Bulletin of the Interest Group in Pure and Applied Logics, The Computer Journal.*

INTERNATIONAL SERVICE

Program Committee, “European Simulation Multiconference”, Warsaw, June 1999.

Moderator, mailing list on independent validation and verification of scientific simulations, mail to ivandv@cs.clemson.edu.

Last Update Date: January 22, 2011