

Curriculum Vitae

NAME: Kenneth C. Abernethy
ADDRESS: Director
Rushing Center for Teaching and Technology
Furman University
Greenville, SC 29613
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PERSONAL: Born in 1945 in North Carolina; married; 2 children

EDUCATION:

<u>Year</u>	<u>Degree</u>	<u>School</u>	<u>Subject</u>
1967	B.S.	U.N.C. - Charlotte	Mathematics
1968	A.M.	Duke University	Mathematics
1972	Ph.D.	Duke University	Mathematics

EXPERIENCE:

Current Position: Director of the Rushing Center for Teaching and Technology and the Institute for the Management of Information Technology, Herman N. Hipp Emeritus Professor of Computer Science, Visiting Professor of Computer Science, Furman University, Greenville, SC.

1983-present: Furman University, Greenville, SC; Herman N. Hipp Professor of Computer Science (2001), Director of the Rushing Center (1998), Chair, Computer Science Department (1991-97); Professor of Computer Science (1986); Associate Professor (1983).

1975-1983: Virginia Military Institute, Lexington, VA; Associate Professor of Mathematics (1979-83); Assistant Professor (1975-79); Department Chair, 1979-80.

1973-75: Waynesburg College, Waynesburg, PA; Assistant Professor of Mathematics.

1972-73: Georgetown College, Georgetown, KY; Assistant Professor of Mathematics (one-year appointment).

Summers of 1989, 1991, 1992, and 1994: California Institute of Technology/Jet Propulsion Laboratory, Pasadena, CA. Supported by NASA Summer Faculty Fellowships and NASA JOVE Grant—see Grants Section for research areas.

Summers of 1984, 1985, and 1986: Marshall Space Flight Center, AL. Supported by NASA Summer Faculty Fellowships—see Grants Section for research areas.

Summers of 1979 and 1980: Research Triangle Institute, Research Triangle Park, NC; Research Associate in Statistical Methodology and Analysis Center; NSF Professional Development Grant.

PUBLICATIONS:

Books/Theses Published

- Leading Picasso: The Art and Science of Managing Software Development, Part 2*, co-authored with Stephen K. Wiggins and Suzy Summers. CreateSpace Press (Amazon subsidiary), 2016.
- Managing Picasso: The Art and Science of Managing Software Development, Part 2*, co-authored with Stephen K. Wiggins. CreateSpace Press (Amazon subsidiary), 2014.
- Picasso on a Schedule: The Art and Science of Managing Software Development*, co-authored with Stephen K. Wiggins. CreateSpace Press (Amazon subsidiary), 2012.
- Brief Guide Series for the IT Professional*. CreateSpace Press (Amazon subsidiary), 2016-2018.
- Brief Guide to Project Management, 2016*
 - Brief Guide to Requirements, 2016*
 - Brief Guide to Assumptions, Constraints, and Risks, 2016*
 - Brief Guide to Business Principles for IT, 2017*
 - Brief Guide to Leadership, 2017*
 - Brief Guide to Quality Assurance, 2018*
- Exploring the Digital Domain*, Three Editions (with T. Allen):
- Second Edition, approx. 500 pages, Brooks/Cole Publishing Company, Monterey, CA, 2004.
 - First Edition, 788 pages, Brooks/Cole Publishing Company, Monterey, CA, 1999.
 - Beta Edition, 470 pages, PWS Publishing Company, Boston, 1998.
- The Practical Application of Formal Methods for Software Specification and Analysis for the Verification of Software Systems*, published by the NASA Office of Safety and Mission Assurance, 320 pp., 1998.
- Exploring the Science of Computing: A Laboratory Approach*, (with T. Allen), 619 pages, PWS Publishing Company, Boston, 1994.
- Accompanying Laboratory Manuals:
- Experiments in Computing: Laboratory Activities for Introductory Computer Science using Turbo Pascal*, (with T. Allen), 391 pages, PWS Publishing Company, Boston, 1993.
 - Experiments in Computing: Laboratory Activities for Introductory Computer Science using THINK Pascal*, (with T. Allen), 375 pages, Brooks/Cole Publishing Company, Monterey, CA, 1992.
- Exploring MS Works for the Macintosh*, (with T. R. Nanney and H. Porter), 528 pages, J. W. Wiley and Sons, New York, 1991.
- Exploring Macintosh: Concepts in Visually Oriented Computing*, (with T. R. Nanney and H. Porter), 591 pages, J. W. Wiley and Sons, New York, 1989.
- Accompanying Laboratory Manual:
- Exploring Macintosh: Projects and Applications*, (with T. R. Nanney and H. Porter), 336 pages, J. W. Wiley and Sons, New York, 1989.
- "Historical Perspectives and Exercises," for *Calculus and Analytic Geometry*, by Mizrahi and Sullivan, Wadsworth Publishing Co., 1982, pp. 90-95, 293-296, 562-563, 637-639, 748-750.
- Characterizations of Generalized Metric Spaces as Open Images of Metric Spaces*, Ph. D. Dissertation, Duke University, 1972.
- Sum Theorems for Metrizable Spaces*, A. M. Thesis, Duke University, 1968.

Research Articles

- "A Corporate/University Partnership for IT Professional Development," *The Journal of Computing Sciences in Colleges*, Vol. 26, Number 2, 2011.

- "A New Model for IT Professional Development," *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*, Quebec City, Quebec (published by AACE, Norfolk, VA), October 2007.
- "Educating the Computing Professional of the Future: The Specialization/Interdisciplinary Matrix," *Proceedings of IPSI-2006 Venice*, (with G. Piegari) October, 2006.
- "An Implementation Model for a Learning Object Repository," *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*, pp. 2-7, Vancouver, BC (published by AACE, Norfolk, VA), (with K. Treu, G. Piegari, and H. Reichgelt), October 2005.
- "A Learning Object Repository in Support of Introduction to Information Technology," *Proceedings of the 6th Annual LTSN Centre for Information and Computer Sciences Conference*, York, UK, (with K. Treu, G. Piegari, and H. Reichgelt), September 2005.
- "A Post-Graduate Diploma Program in IT Management: A University/Corporate Collaboration," *Proceedings of the 2005 BCBSA Training and Organizational Development Conference*, Orlando, FL, January 2005.
- "Global diffusion of the Internet II: National differences in Web site connectivity," *Communications of the Association for Information Systems*, Volume 12, pp. 739-751, 2003 (with Han Reichgelt).
- "Preliminary evaluation of an experimental model for tertiary information technology education," *Communications of the International Information Management Association*, Vol. 2, Issue 1, pp 8-14, 2002 (with Han Reichgelt).
- "A case study on establishing linkages between universities, private sector companies and governmental organizations", *Proceedings of the 2001 Conference on Emerging Issues in Business and Technology*, Myrtle Beach, SC, November 2001, pp. 82-90 (with Han Reichgelt).
- "The Caribbean Institute of Technology: A successful development project," presented at the ALO/USAID Synergy 2001 Conference, Washington, DC, August 2001 (with Han Reichgelt).
- "Information technology training in developing countries: A case study in Jamaica," *Proceedings of the IFIP 7th World Conference on Computers in Education, WCCE2001*, Copenhagen, Denmark, July, 2001, published by Kluwer Academic Publishers (with Paula Gabbert and Han Reichgelt)
- "Building a software development industry in Jamaica: Lessons learned", *Proceedings of the Fourth IASTED International Conference on Computers and Advanced Technology in Education*, Banff, Canada, June, 2001, pp. 189-192 (with Han Reichgelt).
- "Forming linkages between higher education and the private sector for international development," invited panel presentation at ALO Synergy 2000 Conference, Washington, DC, July, 2000 (with Han Reichgelt)
- "A software development workforce training program for Jamaica," presented at ALO/USAID Synergy 2000 Conference, Washington, DC, July, 2000 (with Han Reichgelt)
- "Technology transfer issues for formal methods of software specification," *Proceedings of Conference on Software Engineering Education and Training*, Austin Texas, March 2000 (with J. Kelly, J. Kiper, and A. Sobel)
- "Start-up materials for software formal methods/analytical verification on your next project," *2nd Annual Assurance Technology Conference*, NASA Glenn Research Center, Cleveland, Ohio, May 26-7, 1999 (with John Kelly)
- "Formal methods for software specification: A case study in PVS," *The Journal of Computing in Small Colleges*, Vol. 13, Number 3, 1997, (with M. Fletcher, A. Henderson, A. Hoffman, and K. Treu), pp. 23-30.
- "Formal methods for software specification: A case study," abstract published in JOVE Faculty Research Abstracts, NASA/JOVE Retreat, Pasadena, CA, July, 1997
- "Formal methods for software specification: Implications for the undergraduate computer science curriculum," *The Journal of Computing in Small Colleges*, Vol. 12, Number 3, 1996, pp 20-29.
- "Formal methods for software specification," abstract published in JOVE Faculty Research Abstracts, NASA/JOVE Retreat, Hampton, VA, May, 1996, p. 2.

- "Language choice dilemma for CS1 and CS2: Experiences from two universities," *Journal of Computer Science Education*, Vol. 7, No. 1, 1996, pp. 35-51 (with J. Kiper).
- "Comparing object-oriented and data flow models -- a case study," *Proceedings of the 20th Annual ACM Computer Science Conference*, Kansas City, MO, 1992 (with J. Kelly of Cal Tech/Jet Propulsion Lab).
- "Applications from software testing within discrete structures," *Journal of Computer Science Education*, Vol. 2, Number 1, 1991, pp. 1-30.
- "Object-oriented versus functional decomposition modeling viewed in a larger context," presented at the ACM Mid-South Chapter Fall Conference, Gatlinburg, TN, November, 1991.
- "A tailored object-oriented analysis method for critical real-time applications," *Proceedings of 14th Minnowbrook Workshop on Software Engineering*, Blue Mountain Lake, NY, 1991 (with J. Kelly and S. Barkataki, both of Cal Tech/Jet Propulsion Lab).
- "A hypertext data flow diagram system for structured analysis," *Journal of Computing in Small Colleges*, Vol. 6, Number 4, 1991, (with student C. Reed), pp. 18-23.
- "Converting failure propagation models to expert system rule bases," *Proceedings of 6th Annual University of South Carolina Symposium on Intelligent Systems*, Columbia, SC, 1990, pp. 33-35.
- "Converting predictive model calculations to expert system rule bases," *Proceedings of 27th Annual Meeting of the Southeast Region ACM*, Atlanta, GA, 1989, (with student T. Kerstetter), pp. 489-491.
- "Use of an expert system data analysis manager for Space Shuttle Main Engine test evaluation," *Proceedings of the Fourth Conference on Artificial Intelligence for Space Applications*, Huntsville, AL, 1988, pp. 451-456.
- "An approach to articulating expert system rule bases," *Proceedings of the First International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems*, Tullahoma, TN, 1988, pp. 814-821.
- "A Monte Carlo study of small sample Weibull reliability analysis," *Proceedings of 26th Annual Meeting of the Southeast Region ACM*, Mobile, AL, 1988, pp. 562-165.
- "A program to generate an expert system rule base from a failure mode model," *Proceedings of 26th Annual Meeting of the Southeast Region ACM*, Mobile, AL, 1988, (with student T. Kerstetter), pp. 130-134.
- "A linear algorithm for database duplicate deletion," *Proceedings of 26th Annual Meeting of the Southeast Region ACM*, Mobile, AL, 1988, (with student M. Landis), pp. 317-319.
- "Implementing a RIM7 SSME test history database," *NASA/ASEE Summer Faculty Research Reports*, 1986, pp. 1-15.
- "A Monte Carlo study of Weibull reliability analysis for Space Shuttle Main Engine components," *NASA/ASEE Summer Faculty Research Reports*, 1985, pp. 1-11.
- "Database management system modeling for Space Shuttle Main Engine historical test data," *NASA/ASEE Summer Faculty Research Reports*, 1984, pp. 1-30.
- "Characterizations of some generalized countably compact spaces as images of M-spaces," *Rocky Mountain Journal of Mathematics*, vol. 10, 1980, pp. 709-715.
- "Characterizations of certain classes of spaces with G_δ -points as open images of metric spaces," *Canadian Journal of Mathematics*, vol. 27, 1975, pp. 1229-1238.
- "On characterizing certain classes of first countable spaces by open mappings," *Pacific Journal of Mathematics*, vol. 53, 1974, pp. 319-326.

Computer Science Pedagogy/Curriculum Development Articles

- “Connections with History: Broadening Interest in the Discipline of Computing,” *The Journal of Computing Sciences in Colleges*, Vol. 26, Number 2, (with Kevin Treu), 2010.
- “Computing Soft Skills: An Experiential Approach,” *The Journal of Computing Sciences in Colleges*, Vol 25, Number 2, (with Kevin Treu), 2009.
- “Assessing the Impact of the Emerging Discipline of IT on Computing Curricula: Some Experiences,” *The Journal of Computing Sciences in Colleges*, Volume 22, Number 4, (with K. Treu and G. Piegari), 2007.
- “Teaching Project Management: An Experiential Approach,” *The Journal of Computing Sciences in Colleges*, Volume 22, Number 3, (with G. Piegari and H. Reichgelt), 2007.
- “Some Recent Trends in Computing: Implications for Secondary Computing Education,” presented at *MEC 2007*, abstract published in Extended Conference Program, Phoenix, AZ, (with George Piegari), March, 2007.
- “Turing in Computational Theory: An Approach to Broaden Interest in CS Classes,” *Proceedings of the 7th Annual Conference for the Higher Education Academy Network for Information and Computer Science*, Dublin, Ireland, (with K. Treu and P. Gabbert), September 2006.
- “A Learning Object Repository in Support of Introductory IT Courses,” *Proceedings of ACM SIGITE 05*, pp 223-227, Newark, NJ, (with K. Treu, G. Piegari, and H. Reichgelt), October 2005.
- “Impact of the Emerging IT Discipline on Computing Curricula: Some Experiences,” *The Journal of Computing in Small Colleges*, Vol. 21, Number 3, (with K. Treu, P. Gabbert, G. Piegari, and H. Reichgelt), 2005.
- “Utilizing a Project-Oriented Scripting Approach to Introductory Computer Science,” *Proceedings of the 5th Annual LTSN Centre for Information and Computer Sciences Conference*, Belfast, Northern Ireland, (with K. Treu and B. Shive), September 2004.
- “Bridging the gap between computer literacy and computer science,” *Proceedings of the 4th Annual LTSN Centre for Information and Computer Sciences Conference*, Galway Ireland, (with K. Treu and B. Shive), September 2003.
- “Using discovery-based online learning in the teaching of computing,” *Proceedings of E-Learn 2002*, Montreal, Canada, (with Tom Allen) October 2002.
- “Discovery-based approach for introductory computing for non-majors,” presented at *SIGCSE 2001*, Charlotte, NC, (with Tom Allen) February 2001.
- “Discovery-based learning and the Web,” presented at *MEC2001 Conference (Microcomputers in Education)*, Phoenix, Arizona (with Tom Allen) March 2001.
- “Web authoring as a pedagogical tool across the computer science curriculum,” *Conference Proceedings: 8th Annual Conference on the Teaching of Computing*, Edinburgh, Scotland (with Kevin Treu and Paula Gabbert) August 2000, pp. 74-80.
- “On-line tools supporting inquiry-based classroom and distance learning,” *Conference Proceedings: 7th Annual Conference on the Teaching of Computing*, Belfast, Ireland (with Kevin Treu) August 1999.
- “The Academy in the Digital Age: Some Fundamental Questions”, presentation to Inaugural Associated Colleges of the South Technology Center Symposium, Southwestern University, Georgetown, TX, June 1999.
- “Research Opportunities for Students and Faculty at NASA Centers”, panel discussant, 12th Annual Southeastern Small College Computing Conference, Jefferson City, TN, November, 1998.
- “Inquiry-based computer science instruction: Some initial experiences,” *Conference Proceedings: 6th Annual Conference on the Teaching of Computing and 3rd Annual Conference on Integrating Technology into Computer Science Education*, Dublin Ireland, (with P. Gabbert and K. Treu) August 1998 .
- “A virtual exploration laboratory for implementing an inquiry-based classroom,” accepted for presentation and publication in *ED-MEDIA/ED-TELECOM 98 Proceedings*, (with T. Allen) June, 1998, withdrawn due to scheduling conflicts.

- “How can college/university computer science departments support K-12 computing?” (panel discussion abstract), *NECC 98 Proceedings* (1998 National Educational Computing Conference), San Diego, CA (with others), June, 1998.
- “Narrowcasting the computer literacy course,” *NECC98 Proceedings* (1998 National Educational Computing Conference), San Diego, CA (with T. Allen), June, 1998.
- “What’s the next step in in-service technology education?” *Proceedings of SITE 98* (Society for Information Technology and Teacher Education, Washington, DC, (with T. Allen), March, 1998.
- “A new approach to introductory scientific computing,” *The Journal of Computing in Small Colleges*, Vol. 13, Number 3, (with T. Allen and R. Nanney), 1997, pp. 83-87.
- “Presentation technologies in the classroom,” (panel discussion abstract), *NECC97 Proceedings* (1997 National Educational Computing Conference), Seattle, WA (with others), June, 1997.
- “CSLabNet: Virtual laboratory for Introduction to Computing,” *NECC ‘96 Proceedings* (1996 National Educational Computing Conference), Minneapolis, MN (with T. Allen), June, 1996.
- “Establishing a computer science internship program,” *The Journal of Computing in Small Colleges*, Vol. 12, Number 3, (with R. Nanney) 1996.
- “Computer literacy in the 21st century,” *Proceedings of the Eleventh Annual Eastern Small College Computing Conference*, New Rochelle, NY, (with T. Allen) 1995, pp. 160-5.
- “Using a summer enrichment program to attract students to computing as a discipline,” *The Journal of Computing in Small Colleges*, Vol. 11, Number 3, 1996, pp. 9-15.
- “Going Digital - Faculty Development Programs in Liberal Arts Colleges,” (Panel Discussion Abstract), *The Journal of Computing in Small Colleges*, Vol. 11, Number 3, 1996 (with Tom Allen, et. al.), pp. 71-75.
- “Mainstreaming multimedia computing in the computing curriculum,” *Proceedings of ED-MEDIA 93—World Conference on Educational Multimedia and Hypermedia*, Orlando, FL, (with T. Allen) 1993.
- “Two efforts to incorporate structured laboratories into the CS curriculum,” *Proceedings of 29th Annual Meeting of the Southeast Region ACM*, Auburn, AL, (with J. McGregor of Clemson University and T. Allen) 1991, pp. 130-33.
- “Implementation of structured laboratories in introductory computer science courses,” (Panel Discussion Abstract), *The Journal of Computing in Small Colleges*, Vol. 6, Number 3, 1991, pp. 161-2.
- “Some suggestions for implementing a closed laboratory for CS1,” *Proceedings of 28th Annual Meeting of the Southeast Region ACM*, Greenville, SC, 1990, pp. 73-79.
- “Re-examining the introductory computer science course in liberal arts institutions,” *Proceedings of 21st Annual SIGCSE Technical Symposium*, Washington, DC, 1990, (with T. Allen, T.R. Nanney, and H. Porter), pp. 100 - 104.
- “An alternative to CS1 for the introductory course in computer science in a liberal arts institution,” *Proceedings of 27th Annual Meeting of the Southeast Region ACM*, Atlanta, GA, 1989, (with T. Allen and H. Porter), pp. 98-102.
- “Computing and the liberal arts: an alternative to literacy,” *Journal of Computing in Small Colleges*, Vol. 4, Number 2, 1988, (with T.R. Nanney and H. Porter), pp. 131-136.
- “Integrating expert systems into a liberal arts curriculum,” *Journal of Computing in Small Colleges*, Vol. 4, Number 3, 1988, pp. 125-132. (Reprinted in *Small College Creativity*, Vol. 1, Number 3, Spring, 1990, pp. 81-84.)
- “Very high-level application environments viewed as programming languages: the impact on computer science education,” *Proceedings of 26th Annual Meeting of the Southeast Region ACM*, Mobile, AL, 1988, (with T. R. Nanney and H. Porter), pp. 517-520.
- “Computer applications in a Finite Mathematics course,” *Proceedings of NECC/2* (National Educational Computing Conference, 1980), Norfolk, VA, pp. 179-183 (with G. Piegari and A.L. Thorsen, both of the Virginia Military Institute).

Sponsored and Co-authored Undergraduate Student Papers/Presentations

- “Seeking educational strategies to close the information technology gender gap,” presented by students M. Dunnigan, S. Leever, and M. Turner (co-supervised with T. Allen and P. Gabbert) at the 2002 National Conference for Undergraduate Research (NCUR), Whitewater, Wisconsin, April, 2002.
- “Formal methods for software specification: A case study in PVS,” presented by students A. Henderson and A. Hoffman at the 1998 National Conference for Undergraduate Research (NCUR), Salisbury, MD, April, 1998.
- “Formal methods for software specification: A case study in PVS,” *The Journal of Computing in Small Colleges*, Vol. 13, Number 3, 1997, (co-authored with students M. Fletcher, A. Henderson, A. Hoffman and colleague K. Treu), pp. 23-30.
- “Formal methods in software specification: A case study,” presented by student Michelle Dillinger at the 1997 National Conference for Undergraduate Research (NCUR), Austin, TX, April, 1997.
- “Formal methods in software safety,” presented by student Amanda Hoffman at 1997 National Conference for Undergraduate Research (NCUR), Austin, TX, April, 1997 -- appears in the NCUR97 Proceedings.
- “Technology transfer issues in formal methods,” presented by student Brandy Justice at the 1997 National Conference for Undergraduate Research (NCUR), Austin, TX, April, 1997.
- “Formal methods in software design,” presented by student Amanda Hoffman at Wofford/USCS/Converse Mathematics Symposium, Wofford College, Spartanburg, SC, November, 1996.
- “Formal methods in software design,” by student Amanda Hoffman, won *first place undergraduate paper prize* at 1996 ACM Mid-Southeast Fall Conference, Gatlinburg, TN, November, 1996.
- “Formal methods in software specification: an example,” presented by student Michelle Dillinger at 1996 ACM Mid-Southeast Fall Conference, Gatlinburg, TN, November, 1996.
- “Formal methods in software safety,” presented by student Amanda Hoffman in 1996 CalTech SURF (Summer Undergraduate Research Fellowship) Program Symposium, Pasadena, CA, August, 1996.
- “Technology transfer issues in formal methods,” presented by student Brandy Justice in 1996 CalTech SURF (Summer Undergraduate Research Fellowship) Program Symposium, Pasadena, CA, August, 1996.
- "Solving NP-Complete problems: Is non-determinism the key?," by Furman Advantage student Boz Dimitrov, presented at National Conference for Undergraduate Research (NCUR), Eastern Michigan University, 1994.
- "A hypertext data flow diagram system for structured analysis," *Journal of Computing in Small Colleges*, Vol. 6, Number 4, 1991, (co-authored with Furman Advantage student Christy Reed), pp. 18-23.
- "Converting predictive model calculations to expert system rule bases," *Proceedings of 27th Annual Meeting of the Southeast Region ACM*, Atlanta, GA, 1989, (co-authored with Furman Advantage student T. Kerstetter), pp. 489-491.
- "A program to generate an expert system rule base from a failure mode model," *Proceedings of 26th Annual Meeting of the Southeast Region ACM*, Mobile, AL, 1988, (co-authored with Dana Grant/Furman Advantage student T. Kerstetter), pp. 130-134.
- "A linear algorithm for database duplicate deletion," *Proceedings of 26th Annual Meeting of the Southeast Region ACM*, Mobile, AL, 1988, (co-authored with student M. Landis), pp. 317-319.
- "Creating an expert data analysis manager," by Furman Advantage student Ted Kerstetter, won *first place undergraduate paper prize* at the 1987 Fall Meeting of Mid-South Region ACM, in Gatlinburg, TN.

GRANTS, HONORS, AND AWARDS:

National and Regional Competition

Project co-Director, three-year grant from the Library of Congress, *Establishing an Undergraduate Research Program in Emerging Technologies for Bioinformatics*, \$391,850, 2003-2005.

Project co-Director (other co-Director is R. Shive of Millsaps College), Associated Colleges of the South/Mellon Foundation grant *Developing Follow-on Information Fluency Experiences for Students Completing a Computer Literacy Course*, \$7,800, 2002.

Project co-Director (other co-Directors are T. Allen of Furman University and R. Shive of Millsaps College), Associated Colleges of the South/Mellon Foundation grant, *Introduction to Emerging Digital Technologies, with Focus Modules on Bioinformatics, Large Datasets and Data Mining, and Computer Security*, \$4,000, 2002.

Project co-Director (other co-Directors are T. Allen of Furman University, B. Brown of Washington and Lee Univ., T. Henderson of Millsaps College, R. Johnson of Rhodes College, T. Lairson of Rollins College, B. Paver of Southwestern University, and R. Shive of Millsaps College.), Associated Colleges of the South/Mellon Foundation grant, *Creating an Online Journal for Digital and Information Fluency*, \$38,000, 2002-2003.

Project co-Director (other co-Director is Prof. H. Reichgelt of the University of the West Indies), USAID University Partnership in International Development Grant, *Developing a Software Industry in Jamaica*, \$201,000 (including \$101,000 match from Furman), 1999-2001.

National Science Foundation Curriculum, Course, and Laboratory Improvement (CCLI) grant (PI, co-I is T. Allen), *Materials for a Discovery-Based Approach for Introductory Computing for Non-Majors*, \$101,670 (including \$22,100 match from Furman), 1999.

NASA JOVE Program Augmentation Research Grant, *Formal Methods for Software Specification*, \$20,000, 1997.

NASA JOVE research program co-PI. Three year research grant funded jointly by Furman and NASA, 1994-96. Research project: *Formal Logic Methods for Software Requirements Specification* in conjunction with the Jet Propulsion Laboratory in Pasadena, CA. Total NASA contribution exceeds \$80,000.

CalTech SURF (Summer Undergraduate Research Fellowship) grant for \$10,000 supporting two students for ten weeks at the Jet Propulsion Laboratory in *Formal Methods in Software Specification*, 1996.

National Science Foundation Academic Research Infrastructure Grant (co-I with H. Porter), *Acquisition of a High-Performance Parallel Computer for Computer Science Modeling Research*, \$178,000, 1996.

Project Director, BellSouth Foundation Grant, *Creating a Leadership Cadre for the Integration of Technology in K-12 Classrooms in Upstate South Carolina*, \$93,000 to support teacher training & development workshops and technology pilot projects, 1996.

Project Director, Kresge Foundation Science Initiative Challenge Grant for \$500,000 (\$250,000 for equipment and \$250,000 for endowment) toward *Multimedia Computing and Scientific Visualization* project, 1995. [The *Multimedia Computing and Scientific Visualization* project is an interdisciplinary project involving three Furman departments: mathematics, physics, and computer science.]

Project co-Director, Andrew Mellon Foundation grant for \$1.15 million, for *Enhancing the Learning Environment through the Use of Technology*, a project for the Associated Colleges of the South (ACS), Atlanta, GA, 1995. [ACS is a consortium of 15 selective liberal arts colleges in the Southeast: Birmingham-Southern, Centenary, Centre, Davidson, Furman, Hendrix, Millsaps, Morehouse, Rhodes, Rollins, Southwestern (TX), Trinity, Univ. of Richmond, Univ. of the South, and Washington and Lee.]

Project co-Director, Woodruff Foundation grant for \$497,000 to the Associated Colleges of the South (ACS), Atlanta, GA, 1995. I was involved in the portion of this grant focused on the use of information technology in the classroom.

Project Director, William. M. Keck Foundation, \$175,000 toward *Multimedia Computing and Scientific Visualization* project, 1994.

National Science Foundation ILI Equipment Grant (co-PI with T. Allen), *Integrating Multimedia and Data Visualization into an Introductory Computing Course*, \$103,000 (including \$51,000) matching funds from Furman), 1994.

Project Director, National Science Foundation *Young Scholars in Computing* grant, for two-year program, 1994-95. Program brings 30 rising high school juniors and seniors to campus for a four week residential experience each summer. Two-year renewal funded by NSF in January 1996. Total grant of \$250,000.

Project Director, Frederick W. Symmes Foundation Grant to support *NSF Young Scholars in Computing Program*, \$11,000, 1994 — supported six local area Young Scholars. Additional grant for \$7,900 funded to support additional two years of program, 1996.

Project Director, GTE Foundation Grant for *MUSE: Minority Undergraduate Science Engagement Program*, \$50,000 for scholarships, internships, and summer research stipends for minority science students, 1994.

Project Director, BellSouth Foundation Grant, *Using Telecommunications and Multimedia Technology in the Classroom*, \$50,000 to support faculty development workshops and pilot projects across various disciplines, 1994.

Project Director, Reeves Foundation Grant, \$50,000 to fund the John Reeves Multimedia Laboratory in Riley Hall, 1994.

Project Director, Fred T. Collins Foundation Grant, \$25,000 to equip a Faculty Development Laboratory in Riley Hall, 1994. Faculty development pilot projects supported by the BellSouth Foundation Grant use this laboratory extensively.

Project Director, Charles A. Frueauff Foundation Grant for \$30,000 toward equipping a teaching amphitheater in Riley Hall, 1993.

NASA Summer Faculty Fellowship, Cal Tech/Jet Propulsion Laboratory, supported by Software Product Assurance Section, *Higher Order Logic as a Formal Requirements Specification Method*, 1992.

NASA Summer Faculty Fellowship, Cal Tech/Jet Propulsion Laboratory, *Object-Oriented Analysis and Design*, 1991.

NASA Summer Faculty Fellowship, Cal Tech/Jet Propulsion Laboratory, *Use of Metrics for Software Testing*, 1989.

Apple Computer Educational Grant (with E. Jones, J. Leavell, H. Porter, and D. Shaner) for equipment for *Development of a Multimedia CD-ROM HyperTextBook for Asian History and Culture*, \$24,000, 1989.

National Science Foundation ILI Equipment Grant (co-PI with H. Porter and T. Allen) for *Designing a New CSI Course at Furman University*, \$44,000 (including matching funds from Furman), 1988.

NASA Research Grant for *Expert System/Database System Integration Study*, Marshall Space Flight Center, \$27,000, 1987-90.

Savannah River Laboratories Contract for *Development of Environmental Impact Study Expert System*, E.I. DuPont, \$20,000, 1987-88.

Apple Computer Educational Grant (co-PI with T.R. Nanney and H. Porter) for Equipment for Macintosh Laboratory at Furman University, \$30,000, 1987.

NASA Summer Faculty Fellowship, Marshall Space Flight Center, supported by Structures and Propulsion Laboratory, *Expert Systems for Space Shuttle Main Engine Diagnosis*, 1986.

NASA Research Grant for *Database Modeling for Space Shuttle Main Engine Test History*, Marshall Space Flight Center, \$13,000, 1985-86.

NASA Summer Faculty Fellowship, Marshall Space Flight Center, *Reliability Analysis for Space Shuttle Main Engine Components*, 1985.

NASA Summer Faculty Fellowship, Marshall Space Flight Center, *Database Modeling for Space Shuttle Test Data*, 1984.

National Science Foundation Faculty Professional Development Grant, Supported 8 months at Research Triangle Institute, *Statistical Software and Monte Carlo Methods*, 1979-80.

National Science Foundation Traineeship, Mathematics, Duke University, 1967-68.

Local Competition

Furman Advantage Grant for Undergraduate Research Fellow in support of *Strategies for Encouraging Women Students toward Careers in Information Technology*, 2001 (with Paula Gabbert and Tom Allen).

Meritorious Advising Award, Furman University, 1997.

Furman Advantage Grant for Undergraduate Research Fellow in support of *Formal Methods in Software Specification*, 1996.

Furman Advantage Grant for Undergraduate Research Fellow in support of *Nondeterministic Algorithms for NP-Complete Problems*, 1993.

Finalist for Faculty Invitation Teaching Award presented by Office for Minority Student Affairs, Furman University, 1991 and 1992.

Furman Faculty Development Program Grant (with T. Allen) for support of *Developing Structured Laboratories for CSI Project*, 1990.

Furman Advantage Grant for Undergraduate Teaching Fellow (with T. Allen) in support of *Developing Structured Laboratories for CSI Project*, 1990.

Furman Advantage Grant for Undergraduate Research Fellow in support of *Hypertext Software Requirements Documentation System Development Project*, 1990.

Dana Foundation Grant for Two Undergraduate Research Fellows in *Expert System Development Project*, 1987.

Dana Foundation Grant for Undergraduate Teaching Assistant, 1985.

CORPORATE AND PROFESSIONAL TRAINING DEVELOPMENT/DELIVERY:

Facilitated the delivery of at least 60 professional development courses (mostly 2-day with some 1-day courses) in project management, systems analysis, management/leadership, and other IT-related topics at BlueCross BlueShield of SC (BCBSSC) in Columbia each year for the past 10 years. Worked closely with the senior management team of the I/S Division of BCBSSC to design these classes and evaluate their delivery, modifying and refining them as required. Personally delivered a number of these classes and managed and provided training for the instructors (5 individuals) who delivered the others.

Planned, directed, and facilitated the delivery of 20 offerings of an 8-day residential Summer Institute for the Management of IT to more than 400 managers and IT professionals within the I/S Division of BCBSSC over the past 10 years.

Conducted a two-day workshop *Rethinking the Liberal Arts in the Digital Age*, at Millsaps College, October, 2002. Sponsored by the Associated Colleges of the South.

Lectured for one week at the Caribbean Institute of Technology, Montego Bay, Jamaica, February, 1999.

Coordinated curriculum planning and design for 10-month instructional program (40 hours/week) in client/server technologies at the Caribbean Institute of Technology, Montego Bay, Jamaica, 1998-99.

Principal author of professional development text published by the NASA Office of Safety and Mission Assurance, *The Practical Application of Formal Methods for Software Specification and Analysis for the Verification of Software Systems*, 320 pp., 1998.

Co-presenter for a three-day NASA Professional Development course, *Introduction to Formal Methods*, given at NASA's Independent Verification and Validation Center in Fairmont, WV, December, 1998.

Co-presenter for a three-day NASA Professional Development course, *Introduction to Formal Methods*, given at NASA's Lewis Research Center in Cleveland, Ohio, October, 1998.

Co-presenter for a three-day NASA Professional Development course, *The Practical Application of Formal Methods for Software Specification and Analysis for the Verification of Software Systems*, given at NASA's Jet Propulsion Laboratory, Pasadena, CA, November, 1997.

Co-presenter for a three-day ACS (Associated Colleges of the South) Professional Development Workshop, *Advanced Topics in Multimedia Authoring*, given at the ACS Technology Center, Southwestern University, Georgetown, TX, July 1999 and July 1997.

Program director for pilot program, *Computer Literacy for the 21st Century*, (funded by a grant to ACS – Associated Colleges of the South), two four-day workshops held at Furman University, July 1998 and July 1999.

Conducted three one-day workshops on multimedia computing for 1995 Restructuring Institute (30 public school teachers and administrators in attendance at each workshop), 1995.

Conducted six workshops on integrating technology in the classroom for Furman faculty, 1995-96.

Organized and presented a 4-hour tutorial on the design and development of structured laboratories in introductory computer science courses, 23rd Annual SIGCSE Technical Symposium, Kansas City, MO, 1992 (with T. Allen and J. McGregor -- over 70 educators from across the country in attendance).

Conducted workshop (16 contact hours) on *Structured Analysis and Design* for the MIS department of the City of Greenville, SC, 1990

PROFESSIONAL SERVICE:

Member of Association for Computing Machinery.

Member of Upsilon Pi Epsilon (international computer science honorary).

Member of Associated Colleges of the South Technology Group.

Member of Board of Directors, Caribbean Institute of Technology, Montego Bay, Jamaica.

Judge for Student Research Competition, CCSC-SE, Hickory, NC, November, 2005.

Helped create and served on initial Editorial Board of *Transformations: Liberal Arts in the Digital Age*, an electronic journal funded by the ACS and the Mellon Foundation (<http://www.colleges.org/transformations/>)

Track Chair for Emerging Issues in Business and Technology Conference, November 2002, Myrtle Beach, SC.

Panelist on *The Case for a Center for Large Scale Computing*, InnoVenture Conference, Greenville, SC, March 24-25, 2008.

Panelist on *Higher Education Panel*, Insurance Technology Cluster Summit, Columbia, SC, May 7, 2008.

Panel discussant on “Linking with Others: The Private Sector and NGOS,” *ALO Second Annual Synergy in Development Conference*, Washington, DC July 2000.

Judge for ACM International Student Research Competition, SIGCSE, New Orleans, March 24-26, 1999.

External evaluator for Computer Science Program, Berry College, Rome, GA, November, 1998.

Member of evaluation team for SACS (Southern Association of Colleges and Schools) Accreditation Visit at Millsaps College, Jackson, Mississippi, February 2002..

Member of evaluation team for SACS (Southern Association of Colleges and Schools) Initial Accreditation Visit at Florida Gulf Coast University, Ft. Myers, FL, January, 1999.

Member of evaluation team for SACS (Southern Association of Colleges and Schools) Accreditation Substantive Change Visit at American Intercontinental University, Atlanta, November, 1998. Responsible for evaluation of Master in Information Technology degree.

Member of evaluation team for SACS (Southern Association of Colleges and Schools) Accreditation Reaffirmation Visit at Morehouse College, Atlanta, April, 1998.

Member of evaluation team for SACS (Southern Association of Colleges and Schools) Initial Accreditation Visit at International College, Naples, FL, November, 1997.

Member of evaluation team for SACS (Southern Association of Colleges and Schools) Accreditation Reaffirmation Visit at Universidad de las Americas, Mexico City, February, 1997.

Member of evaluation team for SACS (Southern Association of Colleges and Schools) Accreditation Reaffirmation Visit at Liberty University, Lynchburg, VA, February, 1996.

Member of evaluation team for SACS Accreditation Reaffirmation Visit at Centre College, Danville, KY, 1994.

Member of evaluation team (Coordinator for Undergraduate Instruction Section) for SACS Accreditation Reaffirmation Visit at Georgia Southwestern College, Americus, GA, 1993.

Member of evaluation team for SACS Accreditation Reaffirmation Visit at Livingstone College, Salisbury, NC, 1991.

External evaluator for Department of Mathematical Sciences, Gardner-Webb College, Boiling Springs, NC, 1990.

Panel discussant on “Faculty and Student Research Opportunities at NASA, 12th Annual Southeastern Small College Computing Conference, Jefferson City, TN, November, 1998.

Panel discussant on “Sustaining a Program of Undergraduate Research,” NASA/JOVE Retreat, Hampton, VA, May, 1996.

General Program Chair, Eighth Southeastern Small College Computing Conference, held at Furman University, November, 1994.

Co-organizer for panel discussion on general faculty development in the use of technology in the classroom, 9th Annual Southeastern Small College Computing Conference, Nashville, TN, 1995.

Co-organizer for panel discussion on the use of structured laboratories in introductory computer science courses, 23rd Annual SIGCSE Technical Symposium, Kansas City, MO, 1992.

Co-organizer for panel discussion on the use of structured laboratories in introductory computer science courses, 7th Annual Eastern Small College Computing Conference, Tarrytown, NY, 1991.

Judge for Graduate Student Paper Contest, MidSouth ACM Fall Conference, Gatlinburg, TN, 1991.

Co-organizer for panel discussion on the use of structured laboratories in the computer science curriculum, 29th Annual Southeast Regional ACM Conference, Auburn, AL, 1991.

Co-organizer for panel discussion on structured laboratories in introductory computer science courses, 4th Annual Southeastern Small College Computing Conference, Hickory, NC, 1990.

Instructor for a microcomputer course for minority students (AHEC program), Furman University, 1990.

Invited participant for panel discussion on ACM/IEEE Task Force recommendations on CS curriculum, 5th Annual Eastern Small College Computing Conference, Ithaca, NY, 1989.

Reviewer for Director's Discretionary Fund proposal at the Jet Propulsion Laboratory, California Institute of Technology, 1989.

Referee for papers submitted to Southeast Regional ACM Conferences, 1990, 1991, and 1993.

Reviewer for NSF grant proposals, Directorate for Science and Engineering Education, 1984.

Referee for papers submitted to National Educational Computing Conferences, 1982 and 1983.