

CURRICULUM VITAE

NAME: Peter G. Drexel

DATE: April 29, 2004

POSITION: Professor

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EDUCATION:

YEAR	DEGREE	INSTITUTION	AREA OF STUDY
1993	Ph.D.	University of New Hampshire	Engineering Systems Design
1980	M.S.	Rochester Institute of Technology	Electrical Engineering
1969	B.S.	Rochester Institute of Technology	Electrical Engineering

WORK EXPERIENCE:

Professor/Scientist: Plymouth State University, Plymouth, NH (1988 to present).

Professor (1988-present) - Computer Science Department. Develop and teach courses in Data Communications, Networking, Operating Systems, Computer Systems Organization, Computer Science Foundations and Introductory Computing. Establish curriculum models for these courses. Teach Computer Systems graduate courses. Direct Senior-level research projects (see <http://www.plymouth.edu/compsci/seniorproj.htm> for details). Direct Internships with various local businesses, schools and organizations. Coordinate Introductory Computing course. Create new laboratories for Data Communications and Computer Hardware courses. Enhance existing lab facilities with purchase and loan of new networking equipment. Establish Computer Science Department Research Laboratory. Conduct interdisciplinary research, combining members of the Computer Science & Mathematics Departments. Emphasize faculty involvement in Introduction to the Academic Community (student success) courses. Advise Computer Science, Information Technology, Business, Psychology and Interdisciplinary Majors. See subsequent pages for information on research, development, consultation and service activities.

NASA Summer Faculty Fellow (1998-1999) - STAAC Directorate (Systems, Technology, and Advanced Concepts), Goddard Space Flight Center, Greenbelt, MD. Develop IDEF0 model for STAAC's ISAL (Instrument Systems Analysis Lab). Collaborate with engineers and scientists across approximately 13 disciplines. High-level involvement with STAAC management. Presentations of work at several meetings. Continued work on this project 1999-2000 funded by NASA grant. Product: web-based model of the ISAL process. (see: <http://turing.cs.plymouth.edu/~aelt/goddard/home.html>)

Chair (1998-2001) - Computer Science Department. Coordinate activities of fifteen full-time faculty, lecturers and professionals. Primary focus for curriculum development, student advising and budget issues. Create departmental teaching schedules for regular semesters and alternate sessions. Coordinate course offerings with Natural Science, Mathematics and Communications Studies

departments. Review and approve transfer courses. Establish and maintain curricular link between the PSU Computer Science department and the Computer Information Systems department of the NH Technical Institute at Concord. Establish guidelines for transfer of credits from institution to institution (first such linkage between these institutions). Department-wide coordination of Senior Projects: topics, quality and involvement of off-campus entities. Obtain and administrate student scholarships and fellowships. Encourage faculty and staff development. Evaluate teaching effectiveness. Department representative on Council of Chairs. Represent department at campus-wide functions. Resolve conflicts between students and faculty. Coordinate technology purchase, maintenance and enhancement. Teach two courses per semester (see above).

Acting Chair (1994-1995) - Computer Science Department.

Engineer/Programmer/Scientist: IBM Corp., Essex Junction, VT (1974 to 1988).

Project Coordinator (1987-88) - Provide primary coordination for the development and delivery of new product: micro-controller chip. Interact with customers. Identify needs. Solve problems. Follow through in expeditious manner. Communicate design requirements to production team members. Negotiate solutions for problems in production.

Project Leader (1985-87) - Developed sophisticated (3 dimensional) software algorithm to implement redundancy for 4 megabit DRAM. Used innovative techniques to find best-fit solution: smallest execution time, in severely restricted computational environment. Discovered critical flaw in redundancy design. Empowered management to make appropriate enhancements. Presented systems engineering experience with peers at IBM conference.

Project Engineer (1984-85) - Designed and implemented state-of-the-art software auto-calibration subsystem for IBM memory test system. Used innovative measurement and adjustment techniques. Achieved an order-of-magnitude improvement over existing best-possible calibration. Tool became production line calibration standard.

Project Engineer (1980-84) - Designed and specified software subsystems for vendor memory tester. Provided motivation and assistance to vendor for a major redesign of his product. Developed users' manual for poorly documented features of new system. Supported delivery of first tester to IBM manufacturing. Activities: resource estimating, planning, and scheduling.

System Engineer (1976-80) - Delivered three first-of-a-kind manufacturing test systems for IBM "Common" memory form factors. Coordinated a team of engineers and technicians. Communicated with laboratory test engineers to achieve correlation of results. Improved existing test techniques.

Logic Designer (1975-76) - Designed, implemented and debugged TTL logic subsystem for IBM "ACE" test system. Achieved minimum solution design under tight delivery schedule.

Assembly Language Programmer (1974-75) - Designed and implemented control subsystem for complex memory test system. This approach became the prototype for future designs.

Field Engineer: Electronic Automation Systems, Grand Island, NY, (1972-74)

Installed and provided 24 hour maintenance coverage for computer-based process control systems. Worked with users' management to achieve best-possible production standards. Trained users' maintenance staff on new equipment.

Manager: Moose Mountain Lodge, Athol, NY (1970-72).

Duties covered all facets of operating and maintaining a summer resort. Supervised a staff of five people.

TEACHING INTERESTS:

Systems Analysis
Data Communications
Computer Systems Organization
Student Research

RESEARCH INTERESTS:

Systems Analysis, Design and Optimization
Modeling & Simulation
Chaos & Dynamical Systems

REFEREED PUBLICATIONS:

- "Writing in Computer Science Courses," Drexel and Andrews, Writing Across the Curriculum Journal, Vol. 9, 1998.
- "A System-based Sequence of Closed Labs for Computer Systems Organization," Parker and Drexel, Proc. of the 1996 ACM Technical Symposium on Computer Science Education, Philadelphia, 1996.
- "An Experimental Study of Communication in a Datagram Mesh Simulator," Blaine and Drexel, Proc. of the 1993 International Simulation Multiconference, San Francisco, November 1993.
- "A Mathematical Model of a Mesh System and It's Implementation," Shen, Drexel and Urbach, Mathematical & Computer Modeling, Vol. 18, No. 12, pp. 33-48, 1993.
- "Implementation and Characterization of a Probabilistic Mesh System with Dynamic Routing", Drexel, Shen and Urbach. Proc. of the 1993 SCS Simulation Multiconference, Arlington, March 1993.
- "Packet Delay Prediction in Datagram Mesh Systems", Shen, Drexel and Urbach, Proc. of the 1993 ACM Symposium on Applied Computing, Indianapolis, February 1993.
- "A Probabilistic Model of a Mesh System with Distributed Routing", Drexel, Rucinski and Shen, Proc. of the Pacific-Rim International Conference on Modeling, Simulation and Identification, Vancouver, August 1992.
- "The Simulation of the Non-Linear Dynamic Behavior of Distributed Routing Networks Using DECSIM", Proc. of the 1991 Winter Simulation Conference, IEEE Catalog No. 91CH3050-2, 1991.
- "Complex Behavior in Networks with Distributed Routing", Frontiers of Computing Systems Research: Essays on Technologies, Architectures and Theories, ed. Stuart K. Tewksbury, Vol. III, Plenum Press, New York, 1991.
- "Chaotic Nature of Mesh Networks with Distributed Routing", Proc. of International Symposium on Advances in Interconnection and Packaging, SPIE Volume 1390, 1990.

REFEREED PRESENTATIONS:

"Systems Analysis of the GSFC Instrument Design Process," NASA Goddard Space Flight Center,

Greenbelt, MD, 1999.

"Systems Analysis of the Instrument Synthesis and Analysis Process," NASA Goddard Space Flight Center, Greenbelt, MD, 1998-9.

"Pseudo-Physical Nature of Computing Networks," IBM Research Division, Yorktown, NY, 1996.

"Micro-Controller Development Status," IBM Research Division, Almaden, CA., Tucson, AZ., and Boulder, CO., 1988.

"Communication Problems Amongst Diverse Groups During the Development of a Complex System," IBM Design For Manufacturability Conference, Lexington, KY, 1986.

GRANTS AND PROJECTS:

IT Decision Guru Software Grants, 1999-present.

NASA Small Project Grant, Goddard Space Flight Center, 1999.

CACI COMNET III Software Grant, 1997.

Marion and Jasper Whiting Foundation Grant, 1997.

Microsoft Instructional Lab Grant, Microsoft, Inc., 1995-8.

Professional Development Grants, Plymouth State University, 1989-present.

Technology Across the Curriculum Grant, Plymouth State University, 2001-2002.

Computer Advisory Board Grants, Plymouth State University, 1996-present.

CONSULTATION:

New Hampshire Department of Corrections, Concord, NH, 2003.

New Hampshire Technical Institute CIS Advisory Board, 2002-present

Computer Systems Consultant, 1991-present

Reader, Educational Testing Service, Clemson, SC, 1996-2002.

Judge - Systems Design Competition:

IEEE Computer Society International Design Competition, USA Finals, Washington, DC, 2004.

Reviewer - Texts and other Materials:

Exploring Office XP, Prentice Hall, 2002.

Event-Driven Analysis and Design (proposal), Jones and Bartlett, 2002.

Simnet Xpert (CD), McGraw-Hill, 2002.

Introduction to Computing Systems, McGraw-Hill, 2001.

Digital and Microprocessor Fundamentals, Prentice Hall, 1998.

Network Fundamentals with Windows NT, Addison-Wesley, 1998.

Computer Systems, Jones and Bartlett, 1997.

Local Area Networks, Addison-Wesley, 1997.

Distributed Operating Systems and Algorithms, Addison-Wesley, 1996.

Computers: Tools for an Information Age, Addison-Wesley, 1996.

Microsoft Office for Windows 95, Addison-Wesley, 1996.

Principles of Computer Architecture, Addison-Wesley, 1995.

Computer Currents, Benjamin/Cummings, 1995.

Essentials of WordPerfect for Windows, Addison-Wesley Limited, 1994.

Computer Networks: A Top-Down Approach, DC Heath, 1994.

Digital and Microprocessor Fundamentals, Prentice Hall, 1994.

Projects For Paradox For Windows, Benjamin/Cummings, 1993.

Introduction to Networks & Algorithms, John Wiley & Sons, 1992.

Reviewer - Articles:

Papers for IEEE *Software*, 1999-present.
Papers for the *Simulation Digest*, 1999-present.
Papers for ACM Technical Symposium on Computer Science Education, 1996-present.
Papers for Frontiers of Education Conference, 2002.
Papers for ITiCSE Conference, 2002.
Papers for ISECON Conference, 2001.
Papers for CCSCNE Conference, 2000-present.
Paper for *Computers and Education*, 2000.
"A Fractal Analysis of Interconnection Complexity," Phillip Christie, Proc. of IEEE, 1992.

PROFESSIONAL ASSOCIATION MEMBERSHIP:

Institute of Electrical and Electronics Engineers - Senior Member
Association for Computing Machinery
Society for Computer Simulation
Engineering Honor Society (Tau Beta Pi)
New England Digital Association

PROFESSIONAL DEVELOPMENT ACTIVITIES:

CERIAS/Cisco Information Security Workshop, Summer 2004.
Cisco CCNA Instructor-level training Semesters 1 through 3, 2003.
Cisco CCNA Instructor's Workshops, Concord, NH, 2002-present.
NSF Bioinformatics Workshop, Rochester, NY, 2003.
SIGCOMM Workshop for Teachers of Networking Courses
NSF Network Administration Workshop, Kansas City, MO, 2001.
CAPT MBTI Certification Workshop, Boston, MA, 2001.
NERCHE Chairs' Think Tank, Boston, MA, 1999-2000.
NASA Summer Faculty Fellowship Program, Goddard Space Flight Center, MD, 1998-9.
ETS AP Computer Science Workshop, Berkeley, CA, 1997-8.
NSF Parallel Computing Workshop, Hamilton, NY, 1997.
NSF Scientific Visualization Workshop, Atlanta, GA, 1997.
NSF Grant Writing Workshop, San Jose, CA, 1997.
NSF Instructional Computing Workshop, Colorado Springs, CO, 1997.
Cabletron Gigabit Ethernet Seminar, Boston, 1997.
COMNET III Network Simulation Workshop, Rosslyn, VA, 1996.
NSF Laboratory Development Workshop, Clemson, SC, 1994-5.
Writing Across the Curriculum Workshop, January 1990.

SERVICE TO UNIVERSITY AND DEPARTMENT:

Current:

Curriculum Committee
Frost Academic Commons, Vice-Director.
International Film Series (Co-founder, Organizer), 1996-present.

Previous:

Voice Operations Manager Search Committee, 2002.
Student Lab Manager Fellowship, Administrator, 1996-2001.
Council of Chairs, 1998-2001.
Council of Chairs Subcommittee on Advising, 2000.
Council of Chairs Subcommittee on Part-Time Faculty, 1998-9.
Computer Advisory Board 1995-8.
Long-Range Planning Subcommittee (Computer Advisory Board), Chair 1996-8.
Technology Across the Curriculum Working Group
Pre-Award Grants Advisory Committee
Promotion and Tenure Committee, Chair 1997.
Executive Council 1995-7.
Introductory Computing Course, Coordinator 1995-8.
Faculty Loan & Grant Committee 1992-3.
Programming Lab Coordinator 1992-3.
Council on Academic Orientation, 1991-3.
Friends of International Students, 1991-3.
Advisor to Student Senate, 1990.
Computer Science Colloquium Series, Chair, 1988-90.

OUTREACH:

Campton Elementary School - Coordinate student projects.
New Hampshire Public Television - Coordinated student Web Page projects.
Internet Workshops for local residents.
FCC Certified Radio Examiner
Internet Gateway and Packet Radio systems, Emergency Preparedness.
Plymouth Police Department, Computer Systems Analysis.