

Brad J. Cox, Ph.D.

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EDUCATION

1975, **Post-doctoral Fellow**, National Institutes of Health, Bethesda MD and Woods Hole Oceanographic Institute, Woods Hole MA.

1973, **Ph.D.**, Dept. of Mathematical Biology, University of Chicago.

1967, **B.S.** Organic Chemistry and Mathematics, Furman University; Greenville SC

RESEARCH INTERESTS

Object-oriented programming languages, component-based software engineering, internet-based distance learning environments, digital property rights, electronic commerce, network computing, agile software development, mathematical modeling of evolutionary systems.

EMPLOYMENT

Superdistribution, Inc, Fairfax VA
Jan2000 - present, Chief Scientist,

- Founder, member of the executive management team, lead strategist for research, design and development.
- Managed software development team. Successfully delivered cryptographically intensive, fully distributed revenue collection system for digital property (Java, SQL, Visual Age).
- Consultant to TCS (Florida telecommunications company). Defined software architecture for multi-modality telecommunication switch input system (voice/mouse/keyboard).
- Consultant to The Adrenaline Group. Established Adrenaline University to introduce company mores and practices to new employees and customers.

Softek, Inc, Fairfax VA

Jan1999-Jan2000: Chief Scientist

- Consultant to AMS on Navy BAA Project, Software Architecture and Expert Systems-based Business Rules for Template/MQ-Series-based system.

George Mason University, Fairfax VA

Sep93-Dec98, Faculty, Program on Social and Organizational Learning, and Director, M.A in Telecommunications program.

- Developed "Taming the Electronic Frontier" and "Advanced Object-oriented Programming" courses. Delivered the former

via internet, television, and video to Department of Defense School System teachers in Germany and Italy via DARPA grant and StatOil (Norwegian oil company) in cooperation with Trondheim University. Won \$25,000 award from the Paul Allen foundation for the best distance education system nationwide.

- Digital Commerce Team Leader, EDUCOM/IMS (Instructional Management Systems) project. Wrote payment services standards proposal to support interchange of courseware across institutions.
- Founded Coalition for Electronic Markets in response to an ARPA TRP solicitation, a coalition of industrial, financial, academic and governmental institutions whose goal is to deploy a usage-based revenue collection infrastructure for digital goods. Subsequently proposed a similar solution as a NIST ATP program idea submission, which was accepted as the basis of the 1994 Component-based Software solicitation. Led the development of the abbreviated and full proposals, which were accepted for funding through the semi-finalist phase.
- Consultant to Dialogos, Inc. Participated in the design of the CyberDean web-based distance learning environment for teaching object-oriented technology courses.
- Consultant to GroupServe, Inc. Facilitated interaction between people- and technology-centric contributors to the design of a web-based discussion product.

Stepstone Corporation, Sandy Hook, CT

1983-1992, Chief Technical Officer and VP Research and Development

- Co founded the company based on private resources plus first and second round capital from nationally prominent venture capital firms. Served as the company's primary public spokesman for object-oriented technology issues. Mentored and directed software development staff.
- Inventor and lead developer, Objective-C compiler and Software-IC library. Author, "Object-oriented Programming; An Evolutionary Approach".
- Consultant to Philips Semiconductor (Holland). Reviewed software reuse across Philip's worldwide silicon design/fabrication facilities.
- Consultant to Swedish bank. Participated in turnaround of a distressed software development project.
- Consultant to IBM. Initial design of IBM's System Object Model (SOM).

- Consultant to NeXT, Inc. Architectural specification for the NextStep cross-machine messaging API.

Schlumberger Doll Research Laboratory, Ridgefield CT
 1982-1983, Research and Development Staff. Object-oriented research and development for analysis of oil field wire line information.

ITT Programming Technology Center, Stratford CT
 1980-1982, Advanced Technology Group, Research and development in Coordination Technology and Object Technology.

- Developed unix-based multi-system test environment for the System 1240 telecommunications switch.

Hendrix Electronics, Manchester NH
 1978-1980, System Architect and Project Manager, Software Tools Group.

- Defined system architecture for Chicago Tribune News Room Automation Project

TalStar Systems, Princeton NJ
 1977-1978, Software Architect and Development Manager.

- Defined system architecture for Toronto Star News room Automation Project and successfully managed its development and deployment.

University of Chicago, Chicago IL
 1975-1977, Virology Oncology Laboratory Research Staff.

Modeling studies to optimize experimental designs for DNA hybridization studies of herpes simplex virus as a possible cause of cervical cancer.

PROFESSIONAL SOCIETIES

Association for Computing Machinery (ACM)
 Institute of Electrical and Electronics Engineers (IEEE)

OPERATING SYSTEMS AND LANGUAGES

LINUX, Mac OSX, Windows NT/2000, Oracle, MySQL, Perl, Java (JSP, JCE, AWT, Swing, Tomcat, Antlr, Ant, XML, XLS, XALAN, XERCES, FORTRAN, Assembler, HTML, Apache, Jetty, YACC/LEX, Objective-C, C.

PROJECTS

<http://virtualschool.edu/mybank>: feasibility demonstration, fully distributed digital rights and revenue management system (Java).

<http://virtualschool.edu/jwaa>: Java Web Application Architecture (open source).

<http://virtualschool.edu/ile>: Ruby Interactive Learning Environment (open source)

- PATENTS On-line business method and system for collecting revenue for multigranular digital products (pending)
- BOOKS Superdistribution: Objects as Property on the Electronic Frontier, Addison Wesley ISBN 0201502089
- Object-oriented Programming; An Evolutionary Approach, Addison Wesley ISBN 0201548348
- ARTICLES *Plan for a New University*: written at the request of GMU's president to show how the Taming the Electronic Frontier approach could be expanded university-wide. See virtualschool.edu/heu/.
- Objects as Property*, IEEE Software, January 1997. See virtualschool.edu/cox/IEEE97.html
- Evolving a Distributed Learning Community*, The Online Classroom in K12; Edited by Zane Berge and Mauri Colins. Hampton Press. See virtualschool.edu/cox/OnlineClassroom.html
- No Silver Bullet Revisited* American Programmer Magazine, Edited by Ed Yourdon. See virtualschool.edu/cox/AmProTTEF.html
- Planning the Software Industrial Revolution*, IEEE Software Magazine, Software Technologies of the 1990's. November 1990 See virtualschool.edu/cox/CoxPSIR.html
- What if there is a Silver Bullet and the competition gets it first?* Journal of Object-oriented Programming, 1992 See virtualschool.edu/cox/CoxWhatIfSilverBullet.html
- RESEARCH PROPOSALS Revenue Collection Infrastructure for Component Based Software, Focused ATP Program 6-94 on Component-based Software. See <http://virtualschool.edu/CEM>
- Effects of Technological Innovation on Organizations; A GMU Proposal in Response to the 1998 NSF Knowledge and Distributed Intelligence Solicitation