William G. McArthur

PERSONAL DATA

Present Position:
Retired, and not seeking employment.

Date of Employment: N/A

Address: 33649 Village Drive unit R1, Lewes, DE 19958

Phone: (609) 602-9990

Date of Birth: July 1, 1940

Place of Birth: Kearny, New Jersey

Marital Status: Married

Number of Children: Three

Height: 5 feet 10 inches

Weight: 172 pounds

Physical Limitations: None

EDUCATION

Lower Merion Senior High School, Ardmore, PA: attended September 1955 to June 1958 as a College Preparatory student; received H.S. diploma in June 1958.

Villanova University, Villanova, PA: attended September 1958 to June 1960 as a Chemistry major; attended September 1964 to May 1966 as a Mathematics major; received B.S. in Mathematics in May 1966.

The Pennsylvania State University, University Park, PA: attended September 1966 to March 1969 as an NDEA Fellow in the Department of Mathematics; received Ph.D. in Mathematics in March 1969.

The State University of New York, Binghamton, NY: attended June 1971 to August 1971 in a research participation institute in topology.

Williams College, Williamstown, MA: attended June 1972 to August 1972 in a MAA cooperative seminar on Combinatorial Mathematics and Numerical Algebra.

University of Maryland, College Park, MD: attended an NSF Chatauqua-type Short Course entitled "Treatment and Critical Evaluation of Experimental Data" during the academic year 1974-1975.

The Pennsylvania State University, University Park, PA: attended from June 1975 to August 1975; took computer science and statistics courses.

Duke University, Durham, NC: visiting professor in Department of Computer Science, January 1977 to June 1977; audited four graduate courses in computer science.

Raytheon Data Systems Company, Norwood, MA: attended PTS1200 Macrol language course October 1975; attended PTS100 architecture course August 1979.

Sperry Univac Company, Shippensburg University, PA: attended IMS90 course March 1979.

Lehigh University, Bethlehem, PA: attended week-long CAD/CAM course June 1984.

The Pennsylvania State University, Harrisburg, PA: attended 1986; took 3 credit Ada Programming Language Course.

MILITARY SERVICE

Served on active duty in United States Army from September 1961 to September 1964; Received Commendation Award from the 44th Engineer Group, Korat, Thailand in December 1963; Received Honorable Discharge in September 1967.

EMPLOYMENT EXPERIENCE

President of [Computing Doc LLC](#): February 1999 to July 2010.

Owner/Webmaster of [CapeMayBeach.com](#): April 1999 to present.

Associate Professor of Information and Computer Sciences at [Richard Stockton College](#) (NJ): September 1996 to May 1999.

Part-time Kayak Guide for [Aqua Trails](#), Cape May, NJ: June 1996 to September 1998.

Research Associate for [Center for the Inland Bays](#), Lewes, DE: March 1996 to June 2002.

Professor of Mathematics and Computer Science at [Shippensburg University](#) (PA): March 1969 to May 1996.

Consultant for MC Systems, Shippensburg, PA: September 1983 to May 1996.

Consultant for AMP Incorporated, Harrisburg, PA: May 1983 to August 1983; taught a half-day seminar for 13 weeks; designed a general user interface for engineering graphics programs; implemented a prototype expert system.

Teacher/consultant for Valley Pride Bakery, Shippensburg: September 1982 to February 1983; developed business software for a TRS80 Model II Microcomputer.

Consultant for Raytheon Data Systems Company, Norwood, MA: May 1980 to September 1980; modified the PTS100 hardware diagnostics system.

Consultant for Raytheon Data Systems Company, Norwood, MA: May 1979 to September 1979; developed an automated project tracking system.

Consultant for Raytheon Data Systems Company, Norwood, MA: May 1978 to September 1978; enhanced the HASP workstation software for the PTS1200.

Consultant for Technical Services Company, Bala Cynwyd, PA: May 1964 to August 1964; developed a mathematical model for real property maintenance needs; wrote a set of specifications for a new series of Army maintenance manuals.

RESEARCH AND PUBLICATIONS

An Introduction to The Art of Mathematical Proof, Shippensburg Collegiate Press, Shippensburg, PA, 1969.

"Hewitt Realcompactifications of Products", *Canadian Journal of Mathematics*, 22(1970), pp. 645-656.

"Characterizations of Zero-sets and Realcompactness", *Notices*, American Mathematical Society, 17(1970), p. 680.

"A Characterization of Zero-sets", *Notices*, American Mathematical Society, 17(1970), p. 971.

"A Note on Homeomorphic Realcompactifications", *Archiv der Mathematik*, 22(1971), pp. 85-87.

"A Metrization Theorem for Pseudocompact Spaces", *Notices*, American Mathematical Society, 18(1971), p. 983.

"Realcompactifications of Products of Ordered Spaces", *Notices*, American Mathematical Society, 19(1972), p. A540.

"G(sub-delta)-Diagonals and Metrization Theorems", *Pacific Journal of Mathematics*, 44(1973), pp. 613-617.

"Realcompactifications of Products of Ordered Spaces", *Proceedings of the American Mathematical Society*, 38(1973), pp. 186-192.

"A Linkage Editor for the Color Computer", *Hot CoCo*, September 1983.

Structured Programming Using Pascal, co-authored with J. Winston Crawley, Prentice-Hall, 1988.

Structuring Data with Pascal: A Practical Introduction to Abstract Data Types, co-authored with J. Winston Crawley, Prentice-Hall, 1992.

Structuring Data with Turbo Pascal: A Practical Introduction to Abstract DataTypes, co-authored with J. Winston Crawley, Prentice-Hall, 1992.

Structured Programming Using Think Pascal on the Macintosh, authored with J. Winston Crawley and Norman M. Jacobson, Prentice-Hall, 1992.

"Significant New Course Proposals in Ada", co-authored with Professor Rick Ruth, *Proceedings of the National Ada Conference on Technology* at Williamsburg, VA, March, 1994.

"Exploring the Inland Bays by Kayak", *CIB Newsletter*, November/December 1996.

"The Collegiate Programming Team: Everyone Wins!", *Proceedings of the Thirteenth Annual Eastern Small College Computing Conference* at Richard Stockton College (NJ), October 1997.

"Delaware Program Makes the Comprehensive Conservation Management Plan a Living Document", *Coastlines Magazine*, Autumn 1997 - Issue 7.4.

"An Internal Internship Course - A Service Company Model", *Proceedings of the Fourteenth Annual Eastern Small College Computing Conference* at Marist College (NY), October 1998.

PROFESSIONAL MEMBERSHIPS

Past Member of Mathematical Association of America

Member of Association for Computing Machinery

Member of Sierra Club

Member of the Nature Conservancy

Member of NJ Audubon Society

Member of the Cape May Bird Observatory

Past Member of IEEE Computer Society

Past Member of American Association for Artificial Intelligence (AAAI)

Member of Sigma Xi Scientific Research Society

Past Director of Shippensburg Color Computer Club (Rainbow Connection)

HONORS AND DISTINCTIONS

Received **Freshman Chemistry Achievement Award**, Villanova University, June 1959.

Member, **Dean's Honor Roll**, Villanova - June 1959, December 1965, and May 1966.

Awarded **NDEA Fellowship**, The Pennsylvania State University, September 1966.

Listed in **Outstanding Educators of America** 1971-72, 1973-74, 1974-75.

First recipient of the **Faculty Research Award**, Shippensburg State College, 1977.

Received **Certificate in Computer Programming** (CCP) from the Institute for Certification of Computer Professionals, 1977.

Elected to **Sigma Xi Scientific Research Society** 1979.

Received **DARPA Grant** for Significant New Course Revision - 1993/94

Listed in **Who's Who in the East**

Received **EPA Grant** for Development of a Computer Tracking System - 1997/98

CAMPUS AND COMMUNITY ACTIVITIES (Shippensburg)

Department of Mathematics and Computer Science **Personnel Committee**

Past President, **Board of Directors**, Shippensburg Area School District.

Past Board Member, **Big Brother/Big Sister Program**, Shippensburg.

Past Board Member, **Shippensburg Public Library**.

Facilitator, Shippensburg University **Artificial Intelligence Seminar**

Staff Member, Shippensburg University **Vertebrate Museum**

Coach, SU **Programming Team**

CAMPUS AND COMMUNITY ACTIVITIES (Stockton)

Webmaster, **[Richard Stockton Center on Hate and Extremism](#)**

Webmaster, **[ESCCC97](#)**

Coach, RSC **Programming Team**

Member, **[Cape May County](#)** Pollution Control Financing Authority

Member, Lower Township MUA Advisory Committee

Chair, Subcommittee on Academic Computing of the Richard Stockton Faculty Assembly

COURSES TAUGHT (Shippensburg)

Calculus I,II,III	Computer Science for Liberal Studies
Complex Variables	Geometry
Elements of Research (graduate)	Abstract Algebra I,II
Analysis (graduate) (Interdisplinary Course)	College Seminar
Discrete Mathematics	Topology (graduate)
Combinatorial Computing	Set Theory and Topology
Computer Programming I,II	General Topology
Selected Topics in Computer Science Elementary Linear Algebra	Mathematical Reasoning and
Data File Organization	Introduction to Statistics
Compiler Design	BASIC Programming
Research in Computer Science	Combinatorial Mathematics
Number Theory (graduate) Implementation	Programming Languages and
Pre-Calculus Functions (graduate)	Rings of Continuous
Modern Algebra (graduate)	Artificial Intelligence
Mathematics for Liberal Studies Mathematics I,II	Fundamentals of
Business Administration Mathematics Systems (graduate)	Data Base Management
Programming Languages	Software Engineering
Mathematics as Language(Honors Course) Freedom and Authority (Interdisplinary Course)	
Structured Computer Programming	Data Structures

Theoretical Foundations of Computer Science I and II (graduate)

Object-Oriented Programming

COURSES TAUGHT (Stockton)

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Microcomputers and Applications       Statistics I

Telecommunications                    Object-Oriented
Development

Godel, Escher, Bach                   Internal Internship

Internet Security Group
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PROGRAMMING LANGUAGES

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FORTRAN IV         BAL          PL/I

APL                LISP         SNOBOL

C, C++             MACROL       BASIC

PTS 100 Assembler  Pascal       Forth

FORTRAN 77         Logo         Prolog

dBaseIV            Ada          C++ for Windows

Ada for Windows    Windows help HTML

Visual FoxPro      Java
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COMPUTER SYSTEMS

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IBM 370/165        UNIVAC 90/70  PDP 11/70

RAYTHEON PTS1200   RADIO SHACK TRS80 I,II,III, Color Computer

Apple II+,e        Zenith Z100, Z148

Prime 850          IBM PC,XT IBM PS/2 Model 80

Cray Y/MP
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INVITED ADDRESSES

"The Relevance of Mathematical Epistemology in an Age of Social Awareness",
lecture delivered to the SSC Honorary Mathematics Fraternity, 1969.

"How Real are the Real Numbers?", lecture delivered to the SSC Mathematics Conference, 1970.

"Insights into Mathematics", lecture delivered to the SSC National Honor Society Conference, 1970.

"Sets and Nonsets", lecture delivered to the SSC Mathematics Conference, 1971.

"Paradoxes and Fallacies in Mathematics", lecture delivered to the SSC National Honor Society Conference, 1971.

"The Mathematics of Big-game Hunting", lecture delivered with Professor Howard Bell to the Kappa Mu Epsilon Banquet, 1971.

"Gestalt-typical Applications of Arid Bete-limiting Techniques", lecture delivered with Professor Howard Bell to the Kappa Mu Epsilon Sectional Banquet, 1972.

"Rats, Rooks, and Queens", lecture delivered to SSC Mathematics Club, 1973.

"Associativity", lecture delivered with Professors Howard Bell and Frank Dangello to the Dickinson-Gettysburg-Shippensburg Mathematics Consortium at Dickinson College, 1973.

"The Pigeon-hole Principle", lecture delivered to Regional Meeting of Two-year College Mathematics Chairmen at SSC, 1973.

"Chessboard Counting Problems", lecture delivered at Western Maryland College, 1974.

"Computer Research", lecture delivered at the Science Leadership Conference of the Pennsylvania Junior Academy of Science at SSC, 1974.

"Ideas in Mathematics", lecture delivered at the Science Leadership Conference of the Pennsylvania Junior Academy of Science at SSC, 1974.

"Instant Insanity", lecture delivered at the Mathematics-Computer Day at SSC, 1974.

"Hewitt Realcompactifications of Product Spaces", Colloquium lecture at Villanova University, 1976.

"Necklace Making and Cube Painting", lecture delivered at the SSC Mathematics Conference, 1976.

"A New Model for the Shape of the Bird Egg", paper presented to the Ninety-fourth Stated Meeting of the American Ornithologists Union at Haverford College, 1976.

"The Shape of Bird Eggs", lecture delivered to the Dickinson-Gettysburg-Shippensburg Mathematics Consortium at Gettysburg College, 1976.

"The PTS-1200 Distributed Processing System", lecture delivered at the Raytheon PTS-1200 Dedication at SSC, 1978.

"Management Information System Implemented on a Small Computer", lecture delivered at the SSC Computer Science Conference, 1979.

"Student Research Projects", lecture delivered at the SSC Computer Science Conference, 1979.

"The Elusive Computer Science Curriculum", lecture delivered at Gettysburg College Computer Science Week, 1979.

"Computers in the Elementary Classroom", talk delivered at the PCTM meeting in Harrisburg, PA, 1981.

"Use of microcomputers in Secondary Mathematics", talk delivered at CPMTA meeting in Hershey, PA, 1983.

"Forth Workshop", presented at PCTM meeting in Harrisburg, PA, 1984. "The IBM PC", talk delivered at SU DPMA, 1984.

"Turing's Imitation Game", special lecture for Math/Computer Day, SU, 1986.

"Expert Systems: Practical Artificial Intelligence", talk delivered at the PCTM meeting in Harrisburg, PA, 1987.

"Remarks on Artificial Intelligence", talk delivered to the Honor Student Reception, College of Arts and Sciences, Shippensburg University, January, 1992.

"Programming Teams", workshop conducted for Shippensburg University Mathematics Conference, 1993.

"Course Revisions in Ada", talk delivered with Professor Rick Ruth to the Fall PACISE Conference at Kutztown University, October, 1993.

"Significant New Course Proposals in Ada", talk presented with Professor Rick Ruth to the National Ada Conference on Technology at Williamsburg, VA, March, 1994.

"Flatland Piano Movers and Other Mysteries", talk presented at Shippensburg University Department of Mathematics and Computer Science Colloquium, April 1996.

"The Collegiate Programming Team: Everyone Wins!", talk presented at the Thirteenth Annual Eastern Small College Computing Conference at Richard Stockton College (NJ), October 1997.

"CCMP Tracking", talk presented at the EPA Shallow Water Estuarine Conference at Atlantic City (NJ), March 1998.

"Software Engineering Programming Hacking - The Role of the Programming Team", talk presented at the Spring PACISE Conference at Shippensburg University (PA), March 1998.

"Information Systems Trends and Controls", talk presented at meeting of the Internal Auditors Association at Atlantic City (NJ), April 1998.

"An Internal Internship Course - A Service Company Model", talk presented at the Fourteenth Annual Eastern Small College Computing Conference at Marist College (NY), October 1998.

REFERENCES

Professor Howard T. Bell Department of Mathematics and Computer Science Shippensburg University Shippensburg, PA 17257 htbell@ark.ship.edu

Professor James L. Sieber Department of Mathematics and Computer Science Shippensburg University Shippensburg, PA 17257 jlsieb@ark.ship.edu