

## Mr. Michael Robert McFarren

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### EMPLOYMENT HISTORY

#### POSITIONS HELD

<u>Date</u>	<u>Description</u>
3/1998 to Present	Chairman of the Board, CEO, Head of Engineering, Bellerophon, Ltd.
1995 to 1998	USAF – Defense Information Systems Agency, Arlington, VA Chief, Electronic Commerce engineering
1993 to 1995	USAF – HQ Air Combat Command, Langley AFB, VA Senior Scientist – Director of Requirements
1990 to 1993	USAF – Air Force Institute of Technology, George Mason University Fairfax, VA Doctoral Student – Information Technology
1987 to 1990	USAF – Armstrong Labs, Wright Patterson AFB, OH Scientific Analyst – Crew Station Integration Branch
1985 to 1987	USAF – Air Force Institute of Technology, Wright Patterson AFB, OH Master's Student – Operations Research Strategic and Tactical Sciences
1982 to 1985	USAF – Reserve Officer Training Corp, Cornell University Ithaca, NY Assistant Professor of Aerospace Studies
1977 to 1982	USAF – 321 Strategic Missile Wing, Grand Forks AFB, ND Missile Combat Crew Member
1976 to 1977	Sullivan County Schools, Sullivan, IN Chemistry Teacher

Security Clearance: Inactive

#### AWARDS / PERSONAL RECOGNITIONS

- Professional: Presidential Hammer Award  
Who's Who in Professionals and Executives  
The Internationals Who's Who in Information Technology
- Community: United Methodist Church/Boy Scouts of America – Cross and Flame Award  
Boy Scouts of America - Eagle Scout

## EDUCATION/TRAINING

<u>Degree</u>	<u>Major/Minor</u>	<u>University</u>	<u>Date</u>
BS	Chemistry-Education / General Science	Purdue University West Lafayette, IN	5/76
MBS	Business Administration	University of North Dakota Grand Forks AFB, ND	12/80
	CourseworkChemical Eng towards a Masters degree	University of North Dakota Grand Forks, ND	1/80-6/82
	CourseworkChemical Engineering towards a Masters, Educational Theory	Cornell University Ithaca, NY	8/82-5/85
MS	Operations Research/C3I	AFIT Wright Patterson AFB, OH	6/87
ABD	Information Technology	George Mason University Fairfax, VA	8/90-8/93

## PROFESSIONAL COURSES/SEMINARS

- Air Command and Staff College
- Squadron Officers School
- Effective Writing Course
- Economic Analysis Training
- Missile Combat Training
- Academic Instructor School
- Strategic Air Command Missile Instructor Course
- Advanced Systems Acquisition Management Course
- Intermediate Program Management Course
- Air Force Systems Command Systems Acquisition School
- Mission Critical Computer Resources Acquisition II
- Mission Critical Computer Resources Acquisition I

## PROFESSIONAL SOCIETIES/ASSOCIATIONS

- Air Force Association (AFA)
- Armed Forces communications and Electronics Association (AFCEA)
- IEEE
- The Computer Society
- ORSA/TIMS
- The Information Management Exchange
- The Retired Officer Association

## STANDARDS BODY MEMBERSHIP

- American National Standards Institute ASC X12
- US Technical Advisory Group for ISO / IEC Joint Technical Committee 1, Information Technology
- ANSI ASC X12 liaison to The Object Management Group (OMG)

## SKILLS INVENTORY

### MANAGEMENT / LEADERSHIP

- As the Electronic Commerce Engineering Manager and Lead Engineer, I designed and managed the development, testing, installation, and documentation for the Electronic Commerce Infrastructure (ECI) for the Federal Government for 3 years. The ECI includes the Electronic Commerce Processing Nodes (ECPN), all NIPRNET/INTERNET and modem communications, Centralized Contractor Registration (CCR), Compliance Certification Facility, the Federal EC Navigator, Electronic Malls and more.
- Managed various research groups in Command and Control. Developed the algorithm for converting and IDEF0 activity model automatically into a Colored Petri Net simulation. Defined the concept of Operational Architecture and showed that it is complete when the event is modeled using a complete set of activity, data, physical, constraint and goals models. Developed the associate analysis procedures, tools and software to define command and control architectures.
- As a member of the Crew Station Integration Branch at Armstrong Labs, I designed, conducted and led research in modeling and simulating human decision making under stress within command and control environments. These projects include:
  - NORAD's Granite Sentry Phase I – As the human factors engineer I analyzed the decision processes, information flows and physical designs of the CINC's Command Center and the Air Defense Operations Center and their interactions with external control centers.
  - STAR WARS – I analyzed the information flow and decision making process.
  - Joint STARS – I analyzed the decision making and information flow processes aboard the aircraft resulting in recommendations for workstation orientation and placement as well as changes in procedures and crewmember roles. I conducted an interface analysis and design with ground command centers for situation picture download. I also conducted an analysis and recommended specifications for HF/UHF antenna placement and management on the aircraft.
  - Pilot's Associate – I analyzed the information flow requirements of the pilot from a Pilot's Associate during an air-to-ground engagement.
  - AWACS – I analyzed the decision and information flow processes aboard the aircraft.
- From Dec 81 – Jun 82 I was the Senior Missile Combat Crew Commander Instructor. I led 25 officers and managed more than \$15M in training materials and simulators to meet all training requirements within the 321st Strategic Missile Wing, Grand Forks, ND.

### TECHNICAL ACCOMPLISHMENTS

- Designed and built the ECI Data Warehouse and multiple Data Marts for the Federal Government while at DISA.
- Did database design and development work for NASA's CSOC WAN. The application orientation was network management. Microsoft tools were employed.
- Applied my doctoral work to defining and establishing USAF's Operational Architecture (OA) for Tactical Command and Control. Using the OA I was able to derive requirement parameters from various analytical assessments and simulations.
- Developed a series of tools and processes to analyze human decision making:
  - Applied Saint, MicroSaint, SLAM, Colored Petri Nets to modeling human behavior.
  - Developed Concept Mapping techniques and tools to conduct information flow analyses.
  - Developed a tool to conduct decision process analysis – Decision Analysis. It determines the decision, documents priorities and defines input/output.
  - Interfaced IDEF0 with Concept Mapping to conduct information flow and decision processing analyses.

- Interfaced IDEF0 with Colored Petri Net technology to model and simulate information flows and decision processes.
- During my AFIT studies, I developed a knowledge acquisition tool for designing Decision Support Systems and applied it to the USAF Rapid Application of Air Power (RAAP). The analysis was used to resolve miscommunications and develop RAAP tools for senior planners.

#### TECHNICAL SKILLS

- Operating Systems: DOS, Windows 3.11/95, Windows NT Workstation, Windows NT Server 4.0, Mac OS, LINUX, Unix, MVS
- Databases: Personal Oracle 7, MS Access, MS SQL 6.5, Paradox, Fox Pro,
- Programming Languages: Primary: Fortran, Pascal, LISP, Prolog, Secondary: C/C++, Java, Perl, Tc/Tkl, Java Script
- Development Packages: Cold Fusion, MS Visual C++, Symatec Visual Café, Borland Turbo Pascal, MS Fortran, Mix C
- Data Warehousing Tools: Redbrick, CorVu
- Web Editing: Hot Metal Pro, Front Page, Web Master, MS Visual InterDev
- Scientific/Mathematical: Matlab, MathCad, SPSS, SAS
- Simulation Languages: Saint, MicroSaint, SLAM, Simscript, Colored Petri Nets
- Office Tools: MS Office Suite, Corel Office Suite, MS Project, Day Timer, MS Outlook, Crystal Reports
- Graphic Tools: Click Net, Visio, MacDraw, Design IDEF, IDEF0, Webtricity, Harvard Graphics

#### TEACHING

- Taught 3<sup>rd</sup> year management, Leadership and Communications as the Assistant Professor of Aerospace Studies at Cornell University.
- Western New York State ROTC Recruiting officer (Results: 25% increase in 1983 enrollment and 20% increase in 1984.)
- Held various positions in the Squadron and Instructor Shop. As Chief of the "Learning Center" I built and managed a video production studio, produced more than 100 videos, 200 automated sound on slide and 15 self-paced linked-text educational presentations.
- Taught Chemistry I & II, and Freshman Physical Science. Head Coach – 7<sup>th</sup> grade football, Assistant Coach – 8<sup>th</sup> grade football, Science Club Counselor.
- Served as Executive Officer for the Commander, Commandant of Cadets, Arnold Air Society Advisor and various other duties as my commanders directed.