**Jim E. Helm 1436 E. Hopkins Rd Gilbert, Arizona 85295**

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**Jim.Helm@asu.edu**

**Objective**

Continue teaching and research in communications and networking technologies from fundamentals to advanced, including Internet, wireless systems and architectures. Use industry experiential knowledge to help grow ASU IT program at The Polytechnic School.

**Education**

**Doctoral (PhD) Graduate •** Northcentral University – Prescott Valley, AZ

Course of Study: Applied Computer Science – Advanced topics in Network Communications, including Wireless; Computer Security Concepts; Cyber Forensics; Computer Databases; Implementing Computer Networking Systems, including Wireless environment; Distributed Computing; Software Engineering.

Dissertation Research Interest: Secure Electronic Voting using Biometrics and Voter Disenfranchisement associated with Trust in Internet Voting Process

**M.B.A. •** University of Phoenix - Phoenix, AZ

Master’s Thesis: The viability of using COCOMO in the special application software bidding and estimating process

**M.S.E.E.,** **Communications Engineering •** Naval Postgraduate School - Monterey, CA

Master’s Thesis: The electromagnetic threat to DSCS III: A technical assessment (U)

Course of Study: Communications; Stochastic Processes; Decision and Estimation; Information Theory; Wireless Systems; Satellite Communication Systems; Microwave Systems; Radar Systems

**B.S., Electrical Engineering** • Naval Postgraduate School - Monterey, CA

**B.S., Computer Science •** University of Nebraska

**Educational Teaching Experience**

**Arizona State University Polytechnic Campus**

**Program Chair, Information Technology 2014 – Present**

Reviewed and updated Major Map to incorporate three distinct focus areas for undergraduate and graduate students. Updated course offerings in Major Map and created new courses in Security Policy, Security Analysis, and Network Communications to better reflect overall goals and objectives in undergraduate and graduate curriculums. Screened and hired Faculty Associates to augment full-time faculty teaching loads.

**Lecturer, Information Technology 2013 - Present**

Teach introductory level courses in Information Technology, Network Security and Wireless Communications. Teach graduate-level college courses in Computer Forensics, Network Security, Computer and Network Architectures, and Telecommunications, including digital communications and communications engineering technology focusing on preparing future technologists and technicians to meet the challenges and realities of information communication technology technical development in the 21st century. Developed online courses in Information Technology introduction, Computer and Network Systems Organization, Introduction to Network Security, and Advanced Information System Security.

**DeVry University 2005 - 2013**

**Visiting Professor Faculty, Computer Networking and Communications Engineering**

Taught college courses in wireless communications, digital communications, computer networking, communications engineering technology and math focusing on preparing future engineers, technicians and business leaders to meet the challenges and realities of technical development in the 21st century. Updated syllabi, created lesson plans and lecture material for communication engineering and networking courses and developed innovative teaching techniques based on industry experience requiring individual thought with team dependence. Used current instructional technologies, including the Internet, computer and calculator based and other methodologies to teach a diverse student population. Developed courses in Networking and Network Security.

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* Developed a DeVry University undergraduate course in computer systems security, including developing goals and learning objectives and all aspects relating to lecture material, lab exercises, class activities, homework and exam material.
* Developed DeVry University graduate and undergraduate level courses in Computer Networking, including developing goals and learning objectives and all aspects relating to lecture material and lab exercises.
* Developed DeVry University graduate course in basic Cellular communications, including developing goals and learning objectives and all aspects relating to lecture material.

**Publications**

Helm, J. E. (1992). The viability of using COCOMO in the special application software bidding and estimating process. *IEEE Transactions on Engineering Management. 39*(1), 42-58. http://dx.doi.org/10.1109/17.119662

Helm, J.E. (1997). Redesign cost avoidance using systems engineering. *INCOSE 1997 Conference Proceedings* Best Paper Award

**Patents**

Patent No. 6,684,056 - System for providing optimal satellite communication via a MEO/LEO satellite constellation

Patent No. 6,366,775 – Signal acquisition method and apparatus

Patent No. 6,157,834 – Terrestrial and satellite cellular network interoperability

Patent No. 5,794,120 – Method and apparatus for default node operation in a multi-nodal communication system

**Honors**

Member: Tau Beta Pi Electrical Engineering Honor Society

Member: Golden Key Honor Society

Member: Upsilon Pi Epsilon Computer Science Honor Society

Member: Delta Mu Delta Business Honor Society

INCOSE 1997 Best Paper Award

Motorola Technical Society Award for Engineering Excellence

**Professional Development**

Motorola Management Institute • Design for Manufacturability • Successful Negotiator

Professional Presentation by Speak Easy • Object Oriented Design • Structured Method Design

**Professional Experience**

**NEC AMERICA WIRELESS, Engineering Division 2000 - 2005**

**Assistant General Manager,** Product Engineering, Development and Operations

Provided overall technical leadership and set direction within NEC’s North American Mobile Terminal Development Organization with a staff of over 100 engineers, operations and technical support personnel with a $30 million annual budget.

* Led all aspects of design, development, integration and testing including customer interface and subcontract negotiations, resulting in a successful American team transition from TDMA development to GSM/GPRS architecture and development.
* Set organizational goals and objectives based on strategic business objectives by leading detailed planning and scheduling of resources, and meeting deadlines in global development environment of 2.5G and 3G cellular phones.
* Evaluated competing technologies including all aspects of hardware functionality and software performance and selected optimum partners.
* Created and provided global development presentations to myriad symposiums and received request to co-chair Wireless Industry Congress.

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**MOTOROLA, INC., Government Electronics Group 1987 – 2000**

**Chief Engineer and Technical Manager** -Network Applications and Systems Business Unit 1999 - 2000

Provided technical leadership and direction to emerging Secure Messaging business that included developing secure communication networks for governments

* Developed computer driven extensible architectures and interacted with foreign government customers to develop virtual private networks for secure applications, winning a $50 million competitive business opportunity.

**Chief Engineer and Technical Manager** -Mobile Satellite Systems Network Operations1998 - 1999

Provided technical leadership and direction to over 400 engineers in multiple locations of a $5.5 billion space-based cellular communication system.

* Directed software changes to improve hardware fault management responses, reducing satellite launch expenses by $100 million.
* Established process for 7x24x365 technical evaluation of anomalies in operational system, reducing management overhead by 60%.
* Coordinated with customer and investment banking community, influencing critical funding.
* Taught System Engineering classes at Motorola University and created and provided presentations on complex software development of real-time systems to myriad symposiums, increasing overall knowledge and capabilities of key personnel.
* Chaired patent evaluation committee, reviewing over 50 technical proposals quarterly.

**Technical Manager and Chief Systems Engineer** - The Next Generation Iridium Program 1997 - 1998

Steered the development of the Network architecture.

* Influenced the strategic direction of cellular communications in the 21st century, including 3rd generation functionality.
* Established the design and development approach: setting program engineering schedule planning, evaluating design and development tools, and evaluating the technical capabilities of major subcontractors.

**Lead Engineer and Technical Manager** -Iridium System Design & Integration1994 - 1997

Directed technical activities of 35 to 40 engineers and subcontractor personnel and provided technical direction to over 200 engineers in multiple locations with a $50 million budget.

* Initiated requirements and code reviews in conjunction with CMM best practices, reducing rework by 20%.
* Established requirements development and validation process that ensured consistency and traceability, and directed the enactment of integration planning and functional testing at the system level for this very large and complex satellite-based telecommunications system.
* Created System Engineering curriculum and taught classes at Motorola University.

**Strategic Electronics Division Systems Engineering Manager** 1993 - 1994

Provided technical direction, strategic planning, personnel management and developed and maintained million-dollar department budget for 20 engineers.

**Principal System Engineer and System Architect** 1987 - 1993

Created new business opportunities for Motorola by establishing partner relationships and creating architectures in response to government proposals.

* Technical lead for a wireless communications related competitive program opportunity that Motorola won. Resulted in multi-billion dollar business opportunity with millions in total profit over the last two decades.