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Chief Science Officer
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Education

Johns Hopkins University, Baltimore, MD	Advanced Certificate of Post Masters Studies	2004	Applied Biomedical Engineering
US Naval Postgraduate School, Monterey, CA	MS	1990	Electrical Engineering
West Virginia Institute of Technology	BS	1985	Electrical Engineering

Professional Experience

1982-1983	Electronics Technician, Century Communications Corporation
1985-1987	Electronics Engineer, Strike Aircraft Test Directorate, TACAIR Technology Department, US Naval Air Test Center, Patuxent River, MD
1987-1991.1	Electronic Systems Design Engineer, Research and Technology Group, US Naval Air Test Center (Now the US Naval Air Warfare Center-Aircraft Division), Patuxent River, MD
1991-1996	Assistant Professor of Electrical Engineering Technology, West Virginia University Institute of Technology
1996-2000	Advanced Technology Team Leader, Advanced Systems and Technology Development Team, Orbital Sciences Corporation, Germantown, MD
2000-2004	Engineer, Senior Professional Staff, Johns Hopkins University Applied Physics Laboratory
2004-present	Engineer and Program Manager, Principal Professional Staff, Johns Hopkins University Applied Physics Laboratory
2002-present	Part-time Faculty Member, Johns Hopkins University, Whiting School of Engineering, Departments of Electrical and Computer Engineering and Applied Biomedical Engineering
2009-present	Principal Research Scientist, Johns Hopkins University, Electrical and Computer Engineering
2009-present	Chief Science Officer, Orthocare Innovations, LLC

Research Interests

Primary research interests include development of highly integrated “smart” prosthetic and assistive technology systems to restore function, prevent injury, and improve quality of life in specifically targeted patient populations. These populations include recently injured soldiers, critical civilian personnel such as first responders and space crewmembers and the aging civilian population. Primary externally funded research and development efforts include the Revolutionizing Prosthetics 2009 Program, a four year, \$70+ million, DARPA program that aims to develop a complete 22 Degree of Freedom prosthetic limb system (arm) with full capabilities for natural motion, neurally integrated control, and perception and appearance. As the Program Director and System Integrator for this project from inception through clinical transition planning, responsibilities involved all aspects of program execution including establishment of: technical vision and system architecture, team organizational structure, research priorities and engineering development activities required for achieving DARPA's objectives within the framework of a highly geographically distributed (30+ organizations across 10+ states and 6 countries) and broad multi-disciplinary team (200+ researchers including: neuroscientists, biologists, chemists, doctors, prosthetists, orthotists,

engineers, physicists and managers). Other research interests involve the development of distributed communications, robotics and sensor systems to reduce the risk of injury, or, for improving the quality of life, extending independent living, and reducing the risk of injury for aging persons. In general, research interests involve crossdisciplinary efforts where the collaborative integration of scientific, engineering, and medical disciplines are necessary to address challenges where a positive outcome and the effect on individual quality of life could not otherwise be realized.

Skills and Capabilities

Twenty years of Electronic Systems Design and Crossdisciplinary System Integration experience including:

- Human Integrated Robotics & Rehabilitation Technologies
- Neural Interface Technologies and Integrated System Applications
- Instrumentation, Interface, Data Acquisition, and Communications System Design
- Electromechanical and Biomedical System Design
- Solid State Memory, Video Compression, Data Transfer, and Data Protection
- Test Engineering and Field Test Experience
- Project Management and Technical Team Leadership
- Complete Life Cycle Design and Support – Concept through production and end of life.
- ISO-Engineering Process Experience

Honors

- Honorary Doctor of Engineering, West Virginia University Institute of Technology, May 2007
- Selected as Technology Winner of 2009, IEEE Spectrum
- Winner IEEE/EE Times ACE Award for Engineering in Service to Humanity, 2009
- Nomination for 2007 Best Performer/Best Technical Achievement, DARPA, 2007
- Popular Mechanics 2007 Breakthrough Award Recipient, October 2007
- Appointed to the Principal Professional Staff of the Johns Hopkins Applied Physics Laboratory, 2004
- JHU/APL Special Achievement Awards for Demonstrated Performance and Sponsor Acknowledgements of Outstanding Performance, 2004-2008
- Corporate Award for Outstanding Technical Leadership/Management, Orbital Sciences Corporation, Germantown, MD (1999)
- Nomination for Outstanding Technical Achievement Award, Orbital Sciences Corporation (1998)
- Special Achievement Award for Superior Performance, US Naval Air Test Center, Patuxent River, MD (1986)
- Special Achievement Award for Outstanding Performance, US Naval Air Test Center (1988)
- Nomination for Early Tenure, West Virginia University Institute of Technology, (1995)

Professional Society Membership

- Member, Eta Kappa Nu, Electrical Engineering Honor Society (1990-present)
 - Member, Institute of Electrical and Electronics Engineers
 - Member, Biomedical Engineering Society, IEEE
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