James H. MacConnell

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POSITION SOUGHT

Senior position in an aerospace structures organization dedicated to developing, promoting and transitioning advanced structures technology into the real world. After a decade of promoting technology by leading study teams, I want to focus on hardware design and analysis at the system level though the opportunity to develop and evangelize strategic technology plans and partnerships remains an important part of my ideal position. I am looking for an organization that operates in a truly collaborative, multidisciplinary environment.

QUALIFICATIONS OVERVIEW

I am a nationally known engineering leader with 30 years of aerospace industry experience including a decade of independent consulting in advanced structures technology, integrated systems health management, collaborative research development and execution, team based decision methodologies and technology business case development. I am known for my engineering vision coupled with exceptional analysis, problem solving and communication skills, all grounded in experience that ranges from product development to process improvement, from conceptual design to manufacturing, from qualification testing to forensics, from rail cars to spacecraft. I have strong team leadership skills coupled with a deep commitment to quality, customer focus, and individual/group empowerment.

ATTRIBUTES

MANAGEMENT: I have …

- executed all aspects of project and program development and management
- developed, directed and managed complex multi-million dollar research programs with multiple subcontractors
- worked collaboratively with industry and government/military personnel and agencies
- successfully operated an independent business in the complex aerospace R&D environment

LEADERSHIP: I am a…

- proven leader... leading through technical excellence, personal involvement and inspiration
- capable mentor … passionate about people and technology
- cross-functional evangelist bringing teams together, sharing information and responsibility

TECHNICAL: I have…

- vast technical knowledge in the design, analysis and manufacture of aircraft and spacecraft structures and systems
- the proven ability to conceptualize, plan and execute highly focused technical efforts
- exceptional problem solving and decision making skills coupled with excellent verbal and visual communication skills
- superior traditional (hand) analysis skills as well as failure analysis, forensics, finite element and laminate analysis, etc..

PROFESSIONAL EXPERIENCE

1999 - PRESENT CONSENSUS TECHNOLOGY, LLC
Independent Aerospace Technology Consultant

- Consulting on advanced structures technology and the design and analysis of complex aerospace structures and systems
- Using collaboration to address technology development needs, benefits assessments and business case development
- Providing problem solving, technical decision-making, and consensus building for aerospace R&D teams
- Clients include: Joint Army, Navy, NASA, and Air Force (JANNAF) Propulsion Committees and Air Force Research Laboratory (AFRL) Space & Missiles Systems Propulsion Directorate; NASA Ames Research Center; NASA Langley Research Center (NESC); AFRL Structures, Materials and Propulsion Directorates; AFRL Structures, Materials and Manufacturing Directorates; Boeing, Lockheed Martin and others through intermediate funding

1979 - 1998 THE BOEING COMPANY
Award Winning Engineer, IPT Lead and Program Manager

TECHNICAL MEMBERSHIPS:

American Institute of Aeronautics and Astronautics (AIAA), Society of Automotive Engineers (SAE), American Society of Civil Engineers (ASCE), National Defense Industrial Association (NDIA), National Society of Professional Engineers (NSPE), Washington Society of Professional Engineers (WSPE), Cornell Society of Engineers (CSE),

PROFESSIONAL EXPERIENCE

1999 - PRESENT CONSENSUS TECHNOLOGY, LLC
Independent Aerospace Technology Consultant

Integrated System Health Management Benefit/Business Case for Rocket Propulsion 2008 - 2009
Client: Joint Army, Navy, NASA, Air Force (JANNAF) Committees and AFRL Space & Missiles Systems Propulsion Directorate
- *Working with established JANNAF team, defined focus and led coordinated effort to define the benefits and business case for health management in missile and space systems focusing on propulsion systems*

Composite Crew Module Pressure Vessel Study Team 2006 - 2007
Client: NASA Langley Research Center (NESC)
- *Technical expert for Integrated Vehicle Health Monitoring and composite design, manufacturing and cost*
- *Developed assessments of On-Orbit Inspectability and Repairability for advanced composites*
- *Participated in development of design alternatives and MMOD mitigation concepts*

Integrated System Health Management Study for CEV 2006
Client: NASA Ames Research Center teamed with Prof. Fu-Kuo Chang from Stanford University
- *Assessed Integrated System Health benefits for NASA's Orion Crew Exploration Vehicle (CEV) addressing basic technology capability, system needs, implementation realities, etc.*

Integrated System Health Management & Design Study 2004 - 2006
Client: AFRL Structures, Materials and Propulsion Directorates
- *Created industry team, defined focus and coordinated effort bringing health management experts together to define the benefits of ISHM, identify detailed technology needs and develop a collaborative plan to achieve those benefits.*

Composites Affordability Initiative 2001 - 2004
Client: AFRL Structures, Materials and Manufacturing Directorates
- *Provided technical support in advanced composite design, analysis and fabrication in the collaborative portion of effort*
- *Provided technical decision support for concept selection in the proprietary portions of the effort*

1979 - 1998 THE BOEING COMPANY

***ACTING PROGRAM MANAGER & TEAM LEADER:* Composites Affordability Initiative (1996-1998)**
- ***Awarded Sustained Quality Performance Award for outstanding performance***
- Boeing lead in $400 Million, 20 yr. multi-company, multi-agency composites research initiative development
- Defined Boeing technical participation and programmatic strategy in design, manufacturing, stress analysis, survivability cost analysis and innovation
- Established and maintained technical and philosophical program leadership position
- Managed all aspects of Boeing $11.5M Phase II technical effort

***ACTING MANAGER*: Internal IRAD programs (1997-1998)**
- Reoriented internal composites R&D programs to create a cohesive strategically oriented cross-functional, multi-product line effort averting a loss of IR&D funding for projects with long-term benefit horizons.

***INDUSTRY TECHNICAL TEAM LEADER:* Composites Affordability Initiative Planning (1995)**
- ***Awarded Sustained Quality Performance Award for outstanding performance***
- Recognized as technical expert in all aspects of composite technology
- Elected by senior management and industry peers to be Team Leader for all analysis related planning efforts
- Led development of enabling tools program including stress analysis methods, cost modeling, survivability, and virtual teaming environment

***PRINCIPAL INVESTIGATOR, TEAM LEADER AND ACTING PROGRAM MANAGER:* Design & Manufacture of Low Cost Composites - Fuselage (1991-1998)**
- ***Awarded Sustained Quality Performance Award for technical/management excellence***
- Managed all technical aspects of $9.3 million multiphase, multi-contractor Air Force research program
- Successfully maintained program through multiple customer funding and strategic direction changes/crises by continually evolving a compelling technology case and emphasizing cross-functional collaboration
- Stress analysis team lead for collaborative, multi-company design/analysis efforts

PROCESS IMPROVEMENT ACTIVITIES (1990-1998)
- ***Awarded Quality Achievement Award for development of computerized R&D library***
- Developed team based concept evaluation system enabling unparalleled analysis of the role of assumptions on preferred concepts
- Developed tooling cost estimator reducing estimate preparation time by a factor of 10.
- Driving force in development of a team-based aerospace hardware cost modeling tool.

EARLIER EXPERIENCE AVAILABLE ON REQUEST (1979-1990)

SELECTED PRESENTATIONS/PUBLICATIONS

"ISHM Business Case Workshop", Joint Army-Navy-NASA-Air Force (JANNAF) 56th JANNAF Propulsion Meeting, Las Vegas, NV, April 14-17 2009

"The Business and Technical Case for Rocket Engine Health Management"*, Panelist, 2009 AIAA Infotech@Aerospace Conference, Seattle, WA April 6-9, 2009*

Chair: Prognostics and Structures Session, 2009 IEEE Aerospace Conference, Big Sky, MT, March 7-14, 2009

"ISHM Business Case Workshop", Joint Army-Navy-NASA-Air Force (JANNAF) 6th Modeling and Simulation / 4th Liquid Propulsion / 3rd Spacecraft Propulsion Joint Subcommittee Meeting, Orlando, FL, December 8-12 2008

"ISHM Benefits Study for Space and Missile Propulsion Systems", AFRL Integrated Systems Health Management Conference, Covington, KY, August 11-14, 2008

"Structural Health Management and Structural Design: An Unbridgeable Gap?"*,* 2008 IEEE Aerospace Conference, Big Sky, MT, March 1-8, 2008

Panel Chair: "Demands and Challenges in Structural Health Management for Aerospace Applications"*,* The 6th International Workshop on Structural Health Monitoring, Stanford University, Stanford, CA, 11-13 September 2007

"Structural Health Management for the Crew Exploration Vehicle: An Assessment", AFRL Integrated Systems Health Management Conference, Cincinnati, OH, August 7-9, 2007

"Inspectability, Repairability, and Integrated Vehicle Health Monitoring", *Composite Crew Module (CM) Pressure Vessel Assessment*, Phase I Technical Report, Volume II", NASA Engineering and Safety Center Report RP-07-28. March 29, 2007

"ISHM & Design: A review of the benefits of the ideal ISHM system", Proceedings of the 2007 IEEE Aerospace Conference, Big Sky, Montana, March 3-10, 2007

"Integrated System Health Management (ISHM) Design Study Summary Report", Internal AFRL Report, March 2007. Contact Jim for details.

"ISHM Design Study - Defining the Benefits of ISHM Based Design"*,* AFRL Integrated Systems Health Management Conference, Cincinnati, OH, August 14-16, 2006

"ISHM and Design: A New Capability Perspective", Proceedings of 5th International Workshop on Structural Health Monitoring, Stanford University, Stanford, CA, September 12-14, 2005

"Integrated System Health Management (ISHM) Design Study", Plenary Session, AFRL Integrated Systems Health Management Conference, Cincinnati, OH, August 7-9, 2005

"Design Criteria Challenges and Z-Pinning", 7th Annual AeroMat Conference and Exposition, Cincinnati, OH June 1996

"Composite Technology for Fighter Airframes", 11th DOD/NASA/FAA Conference on Fibrous Composites in Structural Design, Ft. Worth, TX, August 1996

"A Status Review for the Design and Manufacture of Low Cost Composites - Fuselage (DMLCC-FF)", 10th DOD/NASA/FAA Conference on Fibrous Composites in Structural Design, August 1995

SKILLS

LEADERSHIP:

Technology Development Planning, Cross-functional Team Leadership, Collaborative Decision-making, Mentoring, Coaching, Process Improvement, Program Development, Schedule, Budget and Performance Tracking, Customer Interaction, Subcontractor Management, Government Contracting

ENGINEERING:

Aerospace Structural Design and Stress Analysis; Structural Health Management; Design Requirements and Criteria Development; Composites Design, Analysis and Manufacturing; Analysis Methods Development; Damage Tolerance, Structural/Mechanical Testing; Allowables; Finite Element Analysis; Cost Analysis; Tooling, Quality, Production and Developmental Processes

OFFICE TECHNOLOGY:

Strong PC/Mac Skills: Word, PowerPoint, Excel, Project, Outlook, Databases, Web development

EDUCATION

1978 Bachelor of Science	Civil Engineering	Cornell University
1979 Master of Engineering	Structural Engineering	Cornell University