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ENGINEERING, SCIENCE and TECHNOLOGY BUSINESS EXECUTIVE

I am a results-driven business and technology leader who possesses technical, managerial, communications, and critical-thinking skills and over 25 years of experience in scientific, technical, and research environments. I thrive on leadership challenges in high-technology enterprises - whether in government, academia, or the private sector - where innovation is valued, and the leadership encourages healthy team dynamics, and operates with the highest ethical standards.

Expertise:

- Organizational Development
- Strategic Planning
- Process Engineering
- Communications
- Spaceflight Hardware and Programs
- Business Development
- Innovation and Critical Thinking
- International Team Building
- Software Product Architecture and Prototyping
- Research and Development
- Internet Technology and Applications
- Venture Capital Fundraising
- Budget and Strategy Alignment
- Recruitment of high-value personnel
- Proficient in German

Professional Experience:

Teledyne Brown Engineering

Huntsville, Alabama

Vice President, Global Commercial Space

June 2015-November 2015

In this position, I am responsible for strategy and direction of Teledyne's emerging commercial space endeavors in the US and abroad, as well as serving as an integration point for all of Teledyne's space activities. I have led the Huntsville-based team to develop initial studies for assessment of landing the Sierra Nevada DreamChaser space vehicle at the Huntsville International Airport, the first 14 CFR part 139 (public use) airport to consider landings from low-Earth orbit. I have also led the efforts to secure the first commercial data purchase agreement for the Teledyne/DLR DESIS-30 hyper-spectral space-borne instrument, valued at \$15M, 18 months prior to instrument launch to the International Space Station. Current efforts include the development of a Teledyne strategic partnership with a Germany-based optical laser communications company for application to LEO satellite constellations, DESIS-30 data sales to the European Space Agency and US National Geospatial Intelligence Agency, a partnership with AirbusDS GmbH in Bremen to commercialize the European *Columbus* Module aboard ISS, and multiple turn-key mission commercial customers for the MUSES platform.

International Astronautical Federation

Paris, France

Vice President

October 2014-present

In October 2014 I was nominated and elected to serve as one of the twelve Vice Presidents of the International Astronautical Federation (IAF). The IAF is the world's largest body of space-related organizations, comprised of companies, national space agencies, universities, and non-profits. My responsibility at the IAF is to guide the technical content and evolution of the Federation, and its annual International Astronautical Congress meetings, with over 2,500 selected papers and presentations annually. The tenure of this position is four years, renewable for another four, and brings me into working contact with heads of space agencies (ESA, NASA, Roscosmos, ASI, CNES, JAXA, ISRO), company CEOs, and space policy makers from around the world.

Teledyne Brown Engineering
Huntsville, Alabama
Vice President for Space Systems

July 2012-May 2015

I lead and manage the Space Systems portfolio of Teledyne Brown Engineering, driving revenue from \$48M (2013) to \$68M (2015 November Forecast) of annual business for government and commercial customers since starting in 2012. Results for 2014 provided the first year-over-year revenue growth for Space Systems in seven years. Revenue has met (or exceeded) plan each year in which I have had P/L responsibility. Since my arrival at Teledyne Brown, my team has successfully captured two major prime-contracts; the ~\$120M Mission Operations and Integrations (MO&I) contract at NASA, to continue our leadership in executing the 24/7/365 payload operations activities aboard the International Space Station, and the Engineering Solutions and Prototyping (ESP) contract at NASA, an Indefinite Delivery Indefinite Quantity contract valued at approximately \$300M over five years. The performance on MO&I led to Teledyne Brown being selected as the 2015 NASA/Marshall Large Prime Contractor of the year. The first successful task order won on the ESP contract was the \$60M Launch Vehicle Stages Adapter (LVSA) flight hardware for NASA's new Space Launch System heavy-lift rocket. To date, of the ~\$90M awarded on LVSA, my team has captured ~\$87M of the total. We are building the world's first commercial hyperspectral imaging capability aboard the International Space Station through Teledyne Brown's Multi-User System for Earth Sensing (MUSES) imaging platform, scheduled for launch in 2016. I have been personally responsible for leadership in acquisition of the first partner instrument for flight on MUSES, including all negotiations with the Deutsches Zentrum für Luft und Raumfahrt (German Space Agency) for contribution of a hyperspectral imaging camera, as well as negotiations with NASA on advanced data purchase agreements for imaging spectrometer data, and other commercial space imaging-partnerships. The overall performance of Space Systems, through August of 2015, has grown to make this unit the single largest entity by revenue, among the seven which comprise Teledyne's Engineered Systems Division.

University of Alabama in Huntsville
Huntsville, Alabama
Vice President for Research

February 2009-July 2012

I stewarded the research enterprise of UAHuntsville, and the research work performed within our five colleges and fourteen research centers. Under my leadership, we have grown research expenditures from \$65M (2008) to over \$85M (2011), and have achieved the highest possible Carnegie Classification of Research Universities - "Research Intensive / Very High Activity." We have invested over \$2.0M into strategic research infrastructure across the University. These investments have resulted in UAHuntsville's collaborative team being awarded a flight instrument on NASA's Solar Probe mission, and research infrastructure grants are being actively cultivated into start-up companies, winning competitive business plan proposals at the state level. We have built stronger partnerships, including with NASA/Marshall, evidenced by the awarding of a new 5-year cooperative research agreement, have grown deeper research ties to Oak Ridge National Laboratory, through their on-campus partnership office, and through internal partnership efforts that have resulted, for example, in the university receiving the largest NSF research grant ever given to the College of Liberal Arts. Our partnerships with DoD have also grown, establishing new research activities with the Missile Defense Agency, the development of a Joint-Command Technology Demonstration Program (JCTD) for Arctic research in cooperation with the Huntsville-based Von Braun Center for Science and Innovation, and the growth of research expenditures tied to software engineering, systems management and production, and other activities within the US Army Aviation and Missile Development and Research Command. I have reshaped the annual office budget of ~\$8M to align with the strategic priorities of the university, including a near-doubling of the internal competitive research funds available to faculty and staff, the hiring of the university's first-ever full-time grant writer, and improvements in training and workshops for faculty and staff to be more competitive in proposal writing. We have instituted new capabilities for communicating the quality, impact, and human-stories of UAHuntsville research, and have allocated funding to research centers according to a performance-driven, quantitative metric system. I have fortified three major international research opportunities for students, faculty, and staff from across UAHuntsville, building on relationships in Panama with the NGO CATHALAC and with the Smithsonian Tropical Research Institute (earth science, climate, and sustainability), in Germany with the University of Rostock and the DLR (engineering, science, culture, philosophy, language, music, arts), and within the International Astronautical Federation, enabling nearly

100 students from all parts of UAHuntsville to enter peer-reviewed abstracts of original research and to present this research at the world's largest international conference of space professionals. I have secured the visits of numerous high-profile people to the University, including German Ambassador to the United States, Dr. Peter Ammon (Spring 2012), and Apollo-17 Lunar Astronaut Harrison Schmitt (Spring 2009) as commencement speakers and honorary doctoral degree recipients.

National Aeronautics and Space Administration

December 2005-February 2009

George C. Marshall Space Flight Center, Huntsville, Alabama
Science and Mission Systems Office, Manager

In this Senior-Executive-Service (SES) position, I served as the leader of the Science & Mission Systems Office, responsible for managing advanced spaceflight hardware development and complex scientific research and implementing formulation, maturation, design, development, and operation of science and human exploration spaceflight systems, overseeing an annual program/project budget of ~\$300M. Successes of the 300+-person organization during my tenure here are the result of highly collaborative activities between government, University, private-sector, and not-for-profit entities, and include the delivery of the Oxygen Generation and Water Recovery Systems to orbit aboard the International Space Station, launch and activation of the Gamma-Ray Burst Monitor aboard NASA's GLAST spacecraft, ground testing of mirror assemblies for the James Webb Space Telescope, the development of two new Earth Science instruments for soil moisture and hurricane wind measurement, program management in the return of NASA's Stardust comet-sample-return mission, New Horizons mission to Pluto, Messenger Mission to Mercury, and Chandra X-Ray Telescope, and the formulation of a new lunar science program for NASA, as well as early development of America's next lunar robotic lander spacecraft. I represented the Agency and the Marshall Center in a number of national and international professional meetings, conferences, public speaking, and educational forums.

National Aeronautics and Space Administration

February 2005-December 2005

George C. Marshall Space Flight Center, Huntsville, Alabama
Space Transportation Programs and Projects Office, Assistant Director

I returned to NASA in February 2005 to provide leadership to the Space Transportation Programs and Projects Office as a GS-15(10) under the Agency's NEX hiring authority. Shortly after my arrival, the Director was assigned to the NASA Headquarters, making me responsible for the day-to-day operations of the ~\$40M per-year program and project office. In addition to the overall organizational responsibility, I was tasked to provide leadership for two major NASA space-flight program proposals, totaling nearly \$2B in value. These proposals involved extensive collaboration with other NASA Centers, Government agencies, and University-Affiliated Research Centers.

Mobular Technologies, Inc.

January 2000-February 2005

Huntsville, Alabama
Co-Founder, Corporate Director, Chief Product Architect, VP Technical Business Development

I founded Mobular Technologies, a company which enables companies to turn print assets/publications and print/electronic inventories into internet-based, interactive applications that can also be emailed. Products include interactive shareholder communications, proxy voting, electronic merchandise catalogs, and interactive marketing materials and brochures. Customers include IBM, CDW, Bank of America, Sony, Dick's Sporting Goods, and Gateway Computers. I have day-to-day responsibility for designing and implementing the overall product architecture and managing the technical aspects of corporate business development in the Financial Services, eCommerce, and Travel/Tourism markets. I design and implement corporate sales metrics and processes.

Specific achievements include:

- Secured over \$7M in venture capital money, including the first private equity investment in the state of Alabama by Deutsche Banc/Alex. Brown.

- Conceived, designed, and implemented the company's overall product architecture. Software is the foundation for IBM's corporate-wide electronic catalog and winner of the 2003 eTail eCommerce application of the year.
- Redesigned corporate sales processes and infrastructure to reduce average customer acquisition time by 40% in three months; and to increase visibility and understanding of the sales pipeline.
- Led expansion of Mobular product line into travel and tourism related markets, closing three new revenue-generating partnerships in the first 120 days of the initiative.
- Developed the first patent-pending proxy-vote by email system incorporating all relevant financial documents and secure voting by email. Product used by Microsoft, eTrade and others in support of corporate annual meetings.
- Developed and deployed three product lines in the first four years of the company, resulting in revenue growth that contributes to achieving business plan milestones.

National Aeronautics and Space Administration (NASA)

1996 -2000

George C. Marshall Space Flight Center, Huntsville, Alabama

Space Sciences Laboratory, Assistant Director for Science Communications

Conceived, developed, and implemented cross-disciplinary and cross-organizational process and infrastructure to communicate scientific research to non-scientific audiences. As a GS-14 (4), I managed a 7-person, high-performance team and a three-year \$1M cooperative research agreement to improve the scientific accuracy, volume, and public awareness of new knowledge generated by NASA/Marshall.

Specific achievements include:

- Won the 1999 "People's Voice" Webby Award for best science website on the Internet, NASA's first for a science-related website.
- Grew a 200,000-member on-line subscription community.
- Established NASA/Marshall as the Agency leader in the communication of science and technology research.
- Established a national research roundtable for communicating science and technology in the 21st century. Non-FACA panel included Pulitzer Prize winners, members of the National Academy, and communications professionals. Published final report on nationwide best-practices and a roadmap for the future in science communications.
- Managed a three-year \$1M cooperative research agreement with the University of Florida, which produced 4 PhD Journalism and Communications students and several Master's Degree students.
- Served as a primary spokesperson for NASA research in print, radio, and television venues such as CNN, NPR, and the Discovery Channel.

National Aeronautics and Space Administration (NASA)

1994 -1995

George C. Marshall Space Flight Center, Huntsville, Alabama

Assistant Mission Scientist, Astro-2/STS-67 Space Shuttle Mission

Assigned responsibility for optimizing overall scientific return from the Astro-2 Space Shuttle mission. Used scientific management and creative problem-solving skills to balance competing needs and scientific goals of three science teams. Served as a primary spokesperson for the science from the mission in television, radio, and print venues.

Specific accomplishments include:

- Coordinated science objectives and viewing schedules for three separate science payloads and research teams from Johns Hopkins University, University of Wisconsin, Goddard Space Flight Center, and their affiliated institutions.
- Worked on-console operations in the Payload Operations Control Center for 16-days of continuous scientific observations.
- Enabled a successful scientific data return, including:
 - the detection of intergalactic Helium as a test of the Big-Bang theory

- the first wide-field atlas of the sky in the far Ultraviolet
- the first space-borne polarimetry studies of cosmic objects in the far ultraviolet.
- over 150 peer-reviewed journal papers published from the mission.

National Aeronautics and Space Administration (NASA)
George C. Marshall Space Flight Center, Huntsville, Alabama
Research Scientist, Gamma Ray Astrophysics

1991 -1998

Conceived and executed original experimental and theoretical research in high-energy astrophysics. Authored or co-authored over 75 research publications and presentations in the field.

Specific accomplishments include:

- Co-authored the discovery that gamma-ray burst distributions are consistent with a cosmological origin, invalidating nearly 20 years of previously accepted models.
- Co-authored the discovery of flashes of gamma rays from thunderstorms.
- Authored invited review article in *Science* magazine, reviewing the state of gamma ray burst research.
- Mentored graduate students and taught graduate coursework at the University of Alabama Huntsville.

National Aeronautics and Space Administration (NASA)
George C. Marshall Space Flight Center, Huntsville, Alabama
Assembly, Test, and Calibration Scientist

1987 -1991

Designed and implemented assembly, test, and calibration programs for the Burst and Transient Source Experiment (BATSE), one of four science payloads launched into space aboard NASA's *Compton* Observatory, the second of NASA's four Great Observatories in astronomy and astrophysics.

Specific assignments include:

- Led scientific testing and calibration activities for BATSE at the NASA/Marshall Center during initial experiment assembly and test while Principal and Co-Investigators implemented a balloon-flight program to study Supernova 1987A from launch sites in Australia.
- Worked as the resident scientist for spacecraft integration at TRW in Redondo Beach, CA. Responsible for the functional and scientific testing program of BATSE during the 16-month integration phase to verify proper operation of the experiment once integrated into the observatory.
- Directed and implemented scientific testing and calibration activities for BATSE at the Kennedy Space Center in Florida as the satellite was prepared from January 1990 to April 1991 for its launch aboard the Space Shuttle.

KMOX/CBS Radio Sports Department
St. Louis, Missouri
Sports department intern

1984

St. Louis Baseball Cardinals
St. Louis, Missouri
Media and Public Relations Intern

1983

Special Professional Assignments, Boards, Licenses, and Awards:

- Elected Vice President of the International Astronautical Federation (2014)
- Draper Laboratories Space Systems Board of Directors Review Panel (2012)
- Board of Directors, Alabama-Germany Partnership (2012)

- National Science Board's Invited Workshop on NSF Unsolicited Mid-Scale Research, Panel Member (2011)
- Board of Directors, Oak Ridge Associated Universities (ORAU), (2010), member of the Executive Committee (2011), head of Finance and Audit Committee (2012)
- Board of Directors, Economic Development Partnership of Alabama (EDPA) Foundation (2011)
- Leadership Alabama, Class 21 (2011)
- Member (2006), Secretary (2009), Co-Chair (2011) Space Transportation Congress of the International Astronautical Federation (IAF)
- Member Space Universities Advisory Committee, International Astronautical Federation (2011)
- NASA Exceptional Achievement Medal (2008)
- Leadership Huntsville, Class 21, (2007-2008)
- Member Ex-Officio, Board of Directors, Von Braun Center for Science and Innovation (2006)
- University of Alabama Huntsville Alumni of Achievement Award (2007)
- University of Alabama Huntsville College of Science Distinguished Alumnus (2006)
- NASA Lunar Human and Robotic Exploration Strategic Working Group (2005)
- Board of Directors, Sci-Quest Hands-On Science Center (2004-2006)
- Restricted Stock Grant by Mobular Technologies' Board of Directors in recognition of contribution to company's growth and achievements (2003)
- Invited Speaker, DEMO 2002, the leading conference on emerging internet products and technologies (2002)
- Chair, NASA/Goddard Space Flight Center Earth Science Internet Peer Review Panel (1999)
- NASA University-Class Explorer Mission Selection Review Board (1999)
- Member, NASA Communicate Knowledge Process Improvement Team (1997-1998)
- Finalist, NASA Astronaut Candidate Selection Class (1998)
- Member, National Research/Roadmap Working Group for the Communication of Science and Technology in the 21st Century. (1997 – 2000)
- NASA Full-Time Study Award (1994)
- FAA Licensed Private Pilot with Instrument and Commercial Ratings, FAA Flight Instructor

Professional Society Affiliations:

- Member, American Institute for Aeronautics and Astronautics (AIAA)
- Member, American Association for the Advancement of Science
- Member, American Astronomical Society
- Eagle Scout, Boy Scouts of America.

Patents and Publications:

- Patent Pending for Proxy Voting within email (2000 Filing Date)
- Over 75 publications in peer-reviewed journals and conference proceedings. Detailed list available upon request.

Executive Training:

- MIT/Sloan Executive Training – *Building, Leading, and Sustaining the Innovative Organization; Managing Technical Professionals and Organizations; Understanding and Solving Complex Business Problems* (2005-2007)
- NASA/Marshall Space Flight Center representative to the International Space University Summer Session, Toronto, Canada. (1990)
- Hammer and Company, Process-Centered Management and Design training, 1997, 1998

Education:

- PhD, Physics, University of Alabama in Huntsville, Huntsville, AL, December 1993
- MS, Physics, University of Alabama in Huntsville, Huntsville, AL, June 1992
- BS, Physics and Astronomy, *Phi Beta Kappa*, Northwestern University, Evanston, IL, June 1987