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EDUCATION

M.S., Natural Resource Management, expected May 2017
Sul Ross State University, Alpine, Texas
Emphasis: Wildlife Management, Conservation Biology
4.00 of 4.00 GPA

M.S.E., Aerospace Engineering, 1998
The University of Texas at Austin, Austin, Texas
Emphasis: Navigation and Control Systems
4.00 of 4.00 GPA (Summa Cum Laude)

B.S.E., Aerospace Engineering, 1995
The University of Michigan, Ann Arbor, Michigan
Minor: Sociology
3.87 of 4.00 GPA (Summa Cum Laude)

PROFESSIONAL EXPERIENCE (include institutions and beginning and ending years)

Sul Ross State University, Alpine, Texas, 2015 - Present
Lecturer, Departments of Natural Resource Management and Animal Science
Taught the following courses: Biostatistical Analysis I (G), Biostatistical Analysis II (G), Agricultural Statistics (UG). Scheduled to teach Principles of Conservation Biology (UG) in Spring 2017.

NASA Johnson Space Center, Houston, Texas, 1998 - 2014 (permanent) and 1992 - 1997 (intermittent)
Chief, GN&C Autonomous Flight Systems Branch, Aerosciences and Flight Mechanics Division
Performed technical supervision and management of a staff of fourteen individual contributors. Developed goals, objectives, budgets, schedules and personnel requirements in providing qualified analysts and necessary resources that support multiple customers through a work environment that meets all safety regulations. Planned, coordinated, and distributed work while managing workloads per each employee's career goals, levels of interest and experience and customer expectations. Established clear and achievable performance expectations and guidelines, observed performance, provided periodic informal feedback, and conducted formal evaluations for employees. Ensured constant feedback in all customer interactions. Demonstrated advocacy for the group members. Resolved internal conflicts, grievances, and complaints; counseled subordinates and initiated disciplinary measures as required. Recommended personnel actions. Encouraged collaborative efforts and performed

strategic planning. Provided sufficient quality controls. Guided employee career development. Developed and maintained annual branch budgets. Encouraged innovation and diversity of thought and expertise.

Lead, Johnson Space Center University Consortium Feasibility Team
Gained approval from the center's senior management to form and lead a center-wide team to assess the feasibility of forming a Houston-regional consortium of JSC, university, and industry partners (including the State of Texas government if necessary) to increase collaboration among the partners to improve and target education of our current and future workforce pipeline, and also to leverage cross-pollination of technologies to fuel innovation and creativity and expand research opportunities for all involved. This study concluded that such a consortium is feasible.

Lead, Engineering Directorate Branch Chief Working Group
Volunteered to lead a group of eight first-line supervisors to identify and address issues of concern to supervisors across the 850-person Engineering Directorate. Example issues: identifying expectations for all employees and supervisors of the Directorate, formulating recommendations for the Directorate's future student recruiting and hiring, and recommending new career positions and promotion paths for the Directorate.

JSC Lead Point-of-Contact, NASA-Wide AR&D Community of Practice
Represented the Johnson Space Center in an Agency-wide community that integrates Autonomous / Automation Rendezvous and Docking activities across all NASA centers.

Group Lead, Descent Analysis Group, Flight Design and Dynamics Division
Performed administrative and technical supervision and human resource management by supervising a staff of eight individual contributors. Developed goals, objectives, budgets, schedules and personnel requirements in providing qualified analysts and necessary resources that support multiple customers through a work environment that met all safety regulations. Planned, coordinated, and distributed work while managing workloads according to each employee's career goals, levels of interest and experience and customer expectations. Established clear and achievable performance expectations and guidelines, observed performance, provided periodic informal feedback, and drafted formal evaluations for Branch Chief. Demonstrated advocacy for the group members. Resolved internal conflicts, grievances, and complaints; counseled subordinates and initiated disciplinary measures as required. Recommended personnel actions. Encouraged collaborative efforts and performed strategic planning. Provided sufficient quality controls. Guided employee career development. Developed and maintained annual group budgets and monthly metrics, and contributed to contractor evaluations. Defined Constellation Program and Project requirements for entry and range safety.

Continuously improved myself through technical, management, and leadership training. Continued duties outlined under "Aerospace Engineer" below for the Constellation, Shuttle, and International Space Station Programs.

Aerospace Engineer, Descent Analysis Group, Flight Design and Dynamics Division
Designed methods and models for analyzing debris impact footprint boundaries and public risk levels for entering spacecraft and satellites. Coordinated division involvement, and integrated efforts among NASA entities, external companies, and U. S. Government agencies, for spacecraft and satellite deorbit planning and execution relative to public safety. Provided technical oversight and managed contractor work in spacecraft breakup

and explosion, hardware survivability, and public risk modeling analyses. Provided subject-matter expertise consulting to the Space Shuttle and International Space Station Programs, and to NASA Headquarters policy makers, on concerns related to public risk due to falling debris. Led efforts to establish entry and breakup observation campaigns, including sensor evaluation. Educated the space community on NASA space debris risk policies, and recommended changes as a technical evaluator to NASA Headquarters. Made recommendations regarding public risk to Programs considering uncontrolled satellite entry as an option for end-of-life disposal. Managed projects performing collision probability assessments for simultaneous entering vehicles and debris. Designed landing site networks for spacecraft meeting many competing constraints. Managed development of entry trajectory analysis software and tools, including architecture requirements, and a prototype 6 DOF MATLAB trajectory simulation.

Air Traffic Controller, Senior ARD Support Officer, Flight Design and Dynamics Division
Ensured crew safety during Space Shuttle launches by maintaining 5800 parameters in Mission Control trajectory computers, and maintaining configuration of the Abort Region Determinator (ARD) during launch, possibly in life-or-death scenarios for the crew. Maintained the ARD Support Console Handbook and Training Guide. Trained new ARD Support Officers. Performed acceptance, verification, and user testing to support certification of Mission Control processor updates. Proposed, then managed software and mission procedure changes.

Mentor, Flight Design and Dynamics Division
Mentored full-time permanent new-hires, as well as student employees.

Program Coordinator, Division Ergonomics Program, Flight Design and Dynamics Division
Managed this self-initiated and self-designed ergonomic evaluation program as a proactive intervention approach to minimizing future ergonomics-related health losses to the Division.

Cooperative Education Student, Navigation, Control, and Aeronautics Division
Performed simulation design, actuator and aerodynamics model development and verification, flight control system design and performance verification, guidance improvement verifications, and pilot performance metric design.

Program Coordinator, JSC High School Outreach Program, Summer 1994
Responsible for leading and managing this forty member student-run, public outreach program in running presentations and an exhibit booth at Houston's 25th Anniversary of the Lunar Landing Space Exposition.

Lockheed Martin Vought Systems, Dallas, Texas, 1995 - 1996
Engineer, PAC-3 (Patriot Advanced Capability) Missile Performance Group
Analyzed and verified battle space performance for the PAC-3 system. Optimized guidance design methodology.

TRAINING AND CERTIFICATION

Relevant Coursework - Natural Resource Management
Biostatistics I (G), Biostatistics II (G), Interdisciplinary GIS (G), Rangeland Ecology (G), Advanced Topics in Conservation Biology (G), Range/Wildlife Research Methods (G), Ecology and Field Biology (G), Wildlife Management Techniques (UG), Wildland Plants (UG), Wildlife Identification and Natural History (UG)

Relevant Coursework, Graduate (Aerospace Engineering)
Linear Systems Analysis, Optimal Control Theory, Computer Control Systems, Stochastic Estimation and Control, Introduction to Convex Analysis and Optimization, Statistical Estimation Theory, Neural Networks for Engineers, Probability, Statistics, and Random Processes

NASA Johnson Space Center Technical Training
Practical Probability and Statistics, Engineering Statistics, Human Space Flight: Mission Analysis and Design

NASA Johnson Space Center Leadership, Management, and Personal Development Training
Seminar in Leadership, Working Effectively with the Generations, Crossing Department Lines, Developing People, Cognitive Bias, Problem Solving and Decision Making, Individual Development Planning, Conflict Management for Supervisors and Team Leads, Leadership Skills for Managing Crucial Conversations, Dynamics of Daily Negotiation, Challenges Facing the Technical Leader, Art of Project Management, Stress Management, Root Cause Analysis, Du Pont Safety, Crossroads, Continuous Risk Management, Assessing Your Leadership Skills, Influencing Others: The Leader's Toolkit, Situational Leadership, Time Management, Dealing with Difficult People, Maximizing Productivity in the Workplace, Managing the Stress of Change, How to Manage Competing Priorities, Effective Oral Presentations, Impromptu Speaking Skills, Writing That Works, How to Write Better and Faster

PROFESSIONAL ASSOCIATIONS

The Wildlife Society (National and Texas Chapter)
Society for Conservation Biology
American Association for the Advancement of Science
American Institute of Aeronautics and Astronautics

HONORS, AWARDS, AND LISTINGS

NASA Johnson Space Center, Houston, Texas
- NASA Exceptional Service Medal, 2014
- CEV Flight Dynamics Team Excellence Award, 2007
- JSC Safety Action Team Star Award (JSC Ergonomics Program), 2007
- NASA Group Achievement Award (Public Entry Risk Assessment Team), 2006
- NASA Group Achievement Award (NASA Range Safety Public Risk Policy Team), 2005
- Space Flight Awareness Team Award (Columbia Accident Early Sightings Assessment Team), 2004

- JSC Group Achievement Award (Columbia Accident Early Sightings Assessment Team), 2004
- International Space University Nominee from the JSC Mission Operations Directorate, 2003 and 2004
- Nominee, 2004 JSC Software of the Year Award, January 2004
- Space Flight Awareness Honoree Award ("one of the highest presented to NASA and industry"), September, 2003
- NASA Group Achievement Award (Mir Deorbit Observation Team), 2001
- NASA Group Achievement Award (Compton Gamma Ray Observatory Reentry Team), 2001

The University of Texas, Austin, Texas
- Dean's List each semester
- M. J. Thompson Endowed Presidential Graduate Scholarship
- Honorable Mention, 1997 National Science Foundation Graduate Research Fellowship

The University of Michigan, Ann Arbor, Michigan
- Honors Convocation and Dean's List each semester
- Regents Alumni Scholarship
- Medio J. Bacco Scholarship (Private)
- Branstrom Award for Academic Excellence
- Tau Beta Pi Engineering Honor Society
- Sigma Gamma Tau Aerospace Honor Society, Treasurer - Fall 1993
- Golden Key National Honor Society

PUBLICATIONS

- Lead author, "Public Entry Risk Assessment for the Space Shuttle Program", JSC-63062, June 2006.
- Coauthor, "Columbia Early Sightings Assessment Team Final Report", NASA Johnson Space Center, June 2003.
- Editor and contributing author, "Flight Design and Dynamics Division Activities Regarding Deorbit of Space Station Mir", JSC-29536, NASA Johnson Space Center, September 2001.
- Author, "X-38 Integrated Navigation and Control Design with Neural Network Gain Scheduling", The University of Texas at Austin, August, 1998.

RESEARCH AND PROFESSIONAL PRESENTATIONS

- Lead author, "Space Shuttle Public Entry Risk Assessment and Mitigation", AIAA Atmospheric Flight Mechanics Conference and Exhibit, August 2006.
- Author, "Space Shuttle Probabilistic Risk Assessment Incorporation into Entry Public Risk Estimates", AIAA Atmospheric Flight Mechanics Conference and Exhibit, August 2005.
- Coauthor, "Methods for Determining the Level of Autonomy to Design into a Human Spaceflight Vehicle: A Function Specific Approach", Performance Metrics for Intelligent Systems Workshop, September 2003.

- Coauthor, "Entry Vehicle and Jettisoned Debris Recontact Analysis", AIAA Atmospheric Flight Mechanics Conference and Exhibit, August 2003.
- Lead author, "Overview of Entry Risk Predictions", 2002 World Space Congress, October 2002.
- Author, "Entry Debris Field Estimation Methods with Application to Disposal of Compton Gamma Ray Observatory and Mir Space Station", 2002 (1st Annual) NASA Orbital Debris Colloquium, NASA Goddard Space Flight Center, March 2002.
- Author, "Entry Debris Field Estimation Methods and Application to Compton Gamma Ray Observatory Disposal", 2001 Goddard Space Flight Center Guidance, Navigation and Control Flight Mechanics Symposium, NASA Goddard Space Flight Center, June 2001.
- Author, "NASA Pre-Event Debris Footprint Estimates for the Deorbit of Space Station Mir", Mir Deorbit Workshop, European Space Operations Centre, European Space Agency, May 2001.

OTHER AFFILIATIONS AND INVOLVEMENT

Borderlands Research Institute, Sul Ross State University, Alpine, Texas, 2015 - Present
Graduate Research Assistant, Department of Natural Resource Management
Performing estimates of population size, including 95% credible intervals, of the mountain lion population residing in the Davis Mountains of Texas, using state-of-the-art Bayesian Spatial Capture-Recapture method.

Center for Space Research, The University of Texas at Austin, Austin, Texas, 1996 - 1998
Research and Teaching Assistant, Department of Aerospace Engineering
Performed simulation design. Tutored students, recommended curriculum changes, occasionally gave lectures, and graded homework and exams, for the following undergraduate classes, four semesters each: Flight Control Systems, Linear System Analysis, and Flight Dynamics Laboratory.

The University of Michigan, Ann Arbor, Michigan, 1994 - 1995
Assistant Project Manager, Aerospace System Design Course, Winter 1995
Assisted in developing overall class structure and daily class activities as part of a complete design of a space system. Developed and managed the project schedule. Directly supervised twenty students.