

CURRICULUM VITAE

OF

LINDA DAWSON

email: rocket_prof@hotmail.com

Senior Lecturer Emeritus

SUMMARY

A 10+ year Aerospace Engineering career at NASA and Boeing followed by a 25+ year career in higher education and STEM research. Upon retirement, author of space related topics: 2nd edition of *The Politics and Perils of Space Exploration* (2021) and *Space Wars* (2018) published by Springer Praxis Books, NY & Switzerland.

EDUCATION

BS, Engineering, Aeronautics and Astronautics, M.I.T.

MS, Engineering, Aeronautics and Astronautics, George Washington University
at NASA - Langley Research Center

Phd Program Studies, Aeronautics and Astronautics Engineering Dept., University of Washington, Seattle

AUTHOR, SPACE SCIENCE AND TECHNOLOGY

(2016 – present)

Springer Publishing Co., NY

- *The Politics and Perils of Space Exploration*, 2nd Edition (2021), 1st Edition (2017).
- *War in Space - The Science and Technology Behind Our Next Theater of Conflict* (2018).

AUTHOR, STATISTICS AND STATISTICAL EDUCATION

(1990s – 2016)

Pearson Education Publisher, Boston: authored instructor and student solution manuals and test banks using both Minitab and Excel:

- *Business Statistics, 3rd Edition* by Sharpe, De Veaux, Velleman, 2014 and updated volume, 2016.
- *Test bank for Business Statistics, 9th Edition* by Groebner, 2016 and *Introductory Statistics 13th Edition*, by Triola, 2016.
- *Minitab Manual for the 3rd edition of Statistics* by Agresti & Franklin, 2012.
- *Business Statistics* by Sharpe, De Veaux, and Velleman, 2011.
- *Minitab Manual for Business Statistics* by Sharpe, De Veaux, and Velleman, 2010.
- *Business Statistics, 1st edition* by Sharpe, De Veaux, and Velleman, 2009.

McGraw-Hill Publisher, Chicago:

- *Author several chapters of an online learning system (Learnsmart) for Business Statistics* by Jagglia, completed March, 2012.
- *Beta-test online learning materials (Learnsmart) for the 1st edition, Business Statistics: Communicating with Numbers* by Jagglia (2013).

Wiley, Inc. Publisher, New Jersey:

- Excel manual to supplement *Understanding Business Statistics* by Ned Freed, 2013.
- Excel manual to supplement the current edition of *Business Statistics* by Ken Black, 2013.
- Authored the Excel Manual for *Business Statistics* by Ken Black, 2011.

W.H. Freeman Publisher, New York:

- *The Enhanced Excel Manual for the Introduction to the Practice of Statistics* (Moore, McCabe), 2006.
- *The Enhanced Excel Manual for the Practice of Business Statistics*, 2005.
- Developed an Excel statistical add-in module to accompany the *Practice of Business Statistics* (Moore, McCabe, Duckworth, and Sclove), 2005.

STATISTICAL RESEARCH

(2002 – 2003)

City of Tacoma WA Police Department:

- **Racial Profiling Data Collection Study Final Report**, completed July, 2003.
 - Consultant hired by the Tacoma Washington Police Dept as a member of the Racial Profiling Task Force to analyze the statistics of police stops, collected throughout 2002.

FACULTY, INTERDISCIPLINARY ARTS AND SCIENCES

(1996 – 2017)

University of Washington Tacoma, WA

Teaching/Curriculum Development

- Curriculum developed and taught include: Undergraduate Calculus Based Physics Series for Scientists and Engineers including labs, Physical Science Principles, Applied Physics, Rocket and Space Science for Educators, Math and Computers, Quantitative Math Reasoning, Statistics – Intermediate and Advanced, Quantitative Methods for Business, Calculus Applications, Inquiry and Methods of Research, Women in Science, the History and Science of Space Exploration.
- Initiated and developed a campus-wide Math Lab which was later incorporated into the Teaching and Learning, Center. The current tutoring center serves UWT students from all disciplines.
- Initiated and developed collaborative learning workshops that developed into linked course for science and math core courses that are quantitatively challenging.

UW Committees/Duties/Service

- Lecturer Affairs Committee Chair: ad-hoc committee to Faculty Assembly and intended to address campus-wide lecturer issues such as stability, service requirements, and workload.
- Faculty Assembly: appointed to Executive Council for the 2010-2014 academic years. Taken on the consolidation of lecturer concerns for the Council and Faculty Affairs.
- Committees: Campus Technology Committee 2000-current; Gift of Service Award Committee 2000, 2008; Teaching and Learning Roundtable 2003-current; Award Ceremony Committee 2007; Campus Safety Committee 2007-2010; Hiring Committees for several faculty hires – Psychology, Environmental Science: Biology, Microbiology, Environmental Chemistry, Ecology, Chemistry, Math, and Physics 2001-current.
- Collaborative Learning for math and science: chaired a committee to initiate supplemental instruction for quantitatively intense courses, starting with a pilot program in Spring, 2014. Currently coordinating the program with sections providing peer instruction for pre-calc, chemistry, and biology.

Professional Service/Awards

- Awarded a full year sabbatical for the academic year 2014-15. First lecturer at UWT to be granted a sabbatical. Focused project was on collaborative learning and establishing learning communities.
- Appointed to be a member of the Museum of Flight's Space Committee (2006-current). The committee is responsible for evaluating space artifacts for acquisition by the museum. Meets at least once per quarter to review the space artifact acquisition plan.
- Member of the Museum of Flight Educational Advisory Board (1999-current). Includes quarterly meetings, evaluation of school programs.
- Member of the Northwest Engineering Technology Expansion Partnership (NW-ETEP) Community Advisory Board (2005-2007).
- Awarded the UW Brotman Award for Teaching Excellence as part of the Environmental Science Faculty (June, 2004).
- Nominated as Distinguished Faculty Member for the 2000-01 academic year.

Research Grants/Contracts

- Awarded over fifteen contracts with higher education publishers to author educational support material, provide research studies written up as textbook examples, build a statistical module in Excel to analyze data, and author textbook supplements focused on statistics curriculum. Products include:
 - McGraw-Hill development map for writing algorithms for problem solutions (2012).
 - McGraw-Hill supplemental business statistics online learning development (Learnsmart) (2012).
 - Wiley textbook supplemental materials, using Excel to solve business statistics problems, student manual (2010-current).
 - Pearson textbook supplemental materials, instructor and solution manuals, test banks (2006- 2017).

- Awarded a consultant position with the Tacoma Police Dept. to analyze racial profiling statistics, data collected in 2002. Final report completed July, 2003.
- Awarded grant money from two sources (Seed Technology Grant and Founder's Grant) to design and build computer interactive math modules to teach and test specific math skills via the internet or CD (1999).
- Initiated and developed a campus-wide Math Lab to be incorporated into the Teaching and Learning Center. The current tutoring center serves UWT students from all disciplines.

Talks/Papers/Presentations

Seattle Museum of Flight:

- Presentation on author's book entitled *War in Space - The Science and Technology Behind Our Next Theater of Conflict* (2019) followed by a book signing.
- Keynote speaker for Yuri Gagarin Day, April 15, 2017. Presentation followed by a book signing for the author's recent publication *The Politics and Perils of Space Exploration*.

Other talks:

- Book signing and talk for *The Politics and Perils of Space Exploration* at the UWT bookstore, April, 2017.
- Participated in a Learning Community Program at Oregon State University in May, 2016.
- Attended a writer symposium sponsored by Pearson Publisher, held in Boston, MA (March, 2013).
- Attended and gave a presentation on using case studies in the classroom as a teaching tool at an MIS Symposium in Austin, TX sponsored by McGraw Hill Publisher. (October 2006).

PREVIOUS EMPLOYMENT:

MATH AND COMPUTER SCIENCE INSTRUCTOR

University of Puget Sound, Tacoma, WA (8/92 - 5/93)

Highline Community College Continuing Education Center, Federal Way, WA (1991 - 1999)

ENGINEERING GRADUATE STUDENT

(6/90 - 10/91)

University of Washington

Seattle, WA

- Full-time Phd student in Aerospace Engineering.
- Women in Engineering Program Research Associate, and Mentoring Chair. Duties included recruiting industry mentors and matching with women engineering students, compiling a mentoring handbook, and counseling students.
- Part-time Lecturer of Engineering core courses, including Statics, FORTRAN, and Thermodynamics.

ENGINEERING INSTRUCTOR

(9/88 - 6/90)

Green River Community College

Auburn, Washington

- Responsible for teaching a variety of pre-engineering core courses, including Statics, Dynamics, Engineering Graphics, Material Science, Engineering Problems and Orientation.
- Actively involved with curriculum development to update and expand existing materials and develop a more interactive teaching approach.
- Participated in other tenure track activities, including committee work and advising. Served on a Multicultural Task Force with focus on minority student retention issues. Site coordinator for the "Expanding Your Horizons" conference, which exposes young women to math and science careers.

FACULTY COUNSELOR

(Summer, 1989)

NASA Space Life Sciences Training Program

Kennedy Space Center, Florida

- Six week college level course sponsored by NASA and Florida A & M University. Assisted students and scientists in the planning and execution of space flight experiments that were of interest to NASA. Specialized in the CELSS Project (Controlled Ecological Life Support System).

SENIOR SYSTEM SPECIALIST ENGINEER

(1/82 - 5/87)

Boeing Aerospace Company
Kent, Washington

- Responsible for requirements definition of air defense systems, military workstations, space plane concepts and space defense interceptors.
- Lead engineer in the development of a communications network simulation using interactive graphic displays.
- Instrumental in organizing a team of engineers in designing communications testbed displays and controls, including their hardware and software requirements.
- Developed system requirements, the coordination of support disciplines, and the definition of system level trade studies for a variety of government projects.
- Initially involved in evaluating guidance and navigation concepts for new proposals & technical studies on advanced missile concepts and space defense systems.

AERODYNAMIC FLIGHT CONTROLLER

(8/77 - 11/81)

NASA - Johnson Space Center
Houston, Texas

- Served as Aerodynamics Officer for the Mission Control Center Ascent and Entry Flight Control Teams during the first Space Shuttle mission. During orbit phases, served as an advisor of the impact of system failures on the orbiter's re-entry trajectory and configuration. From re-entry through touchdown, was responsible for monitoring the orbiter's stability and control, advising the crew of any necessary corrective actions.
- Developed the entry fuel budget for the first two Space Shuttle flights. Involved with assimilating aerodynamic, trajectory and propulsion data which affect orbiter fuel consumption from de-orbit through subsonic flight. Planned and conducted two extensive real-time flight engineering simulations which led to the establishment of the fuel redline.
- Performed simulation studies to develop crew procedures for anomalous entry conditions and assess system failure impacts. Developed mission rules and Mission Control Center requirements for real-time simulation and mission support.

RESEARCH SCHOLAR ASSISTANT

NASA - Langley Research Center
Hampton, Virginia

- Conducted "An Analytical Investigation of the Feasibility of Estimating Aerodynamic Coefficients Using a Free-Flight Model Technique" (thesis research). Involved the comparison of aerodynamic derivatives extracted from flight test data with those extracted from a model free flying in a full-scale wind tunnel.
- Also, investigated the stall/spin characteristics of fighter aircraft and possible flight control modifications to maintain a safe flight profile.