CURRICULUM VITAE

Bruce A. Conway
1620 Willow Cove
Newport News, VA 23602
(757) 877-0474 (H)
(757) 369-3683 (O)
(757) 817-5635 (M)

EDUCATION

Bachelor of Science in Aerospace Engineering, Virginia Polytechnic Institute, 1965

Master of Science in Aerospace Engineering, George Washington University, 1974

Ph.D. in Engineering Management, Old Dominion University, August 2003 [Dissertation: *Calibrating Expert Assessments of Advanced Aerospace Technology Adoption Impact*]

EMPLOYMENT HISTORY

March 1978 - Present: (currently) Professor, Engineering Sciences
Chair, Department of Engineering Sciences, College of Aeronautics, Embry-Riddle Aeronautical University Worldwide

- Teach undergraduate courses in mathematics and statistics, and graduate courses in aeronautical sciences (aerodynamics, aircraft and spacecraft development, aircraft and spacecraft systems, research methods and statistics, and management of R&D in the aviation/aerospace industry).

- Serves on Systems Engineering Project Advisor, covering a broad range of engineering-related topics.

- Currently serves as full-time ERAU Worldwide Faculty and Chair, Department of Engineering Sciences in the College of Aeronautics, responsible for development and management of graduate and undergraduate programs in engineering for Embry-Riddle Aeronautical University Worldwide.

- Teaches at various ERAU worldwide ground locations in the U.S. and Europe, as well as online and via EagleVision teleconferencing.

August 2003 – Present: (currently) Adjunct Assistant Professor, Department of Engineering Management and Systems Engineering, Old Dominion University

- Serves as instructor of record for ENMA 604, Project Management, for the NCPACE and MEM ASHORE programs in the Engineering Management and Systems Engineering Department.

February 1994 - January 1998: Special Assistant, Internal Operations Group, NASA - Langley Research Center Hampton, VA

- Responsible for planning, evaluating, and directing program reviews and special studies, strategic planning and process improvement, management information systems, and development of process and quality improvement strategies. (The Internal Operations Group consisted of 1250 civil service employees, and was responsible for the Center's program in construction and maintenance of facilities, electronic and mechanical systems support for space and aeronautical flight and ground facility testing, scientific and business computing, and logistics, acquisition, and scientific/technical information support.)

August 1989 - February 1994: Chief, Instrument Research Division
NASA - Langley Research Center, Hampton, VA

- Responsible for the overall management and technical direction of 140 civil servants and 270 support contractors engaged in measurements technology development and instrumentation support services for Langley's and NASA's aerospace research activities.

- Responsible for sensor and measurement technology in a wide variety of disciplines, including electro-mechanical instrumentation, nondestructive evaluation techniques and instrumentation, thermal instrumentation, nonintrusive gas parameter and optical spectroscopy measurements, photo-optical techniques, and pressure measurement instrumentation.

- Served as Chairman of Award Fee Evaluation Board for a $10 million/year support services contract covering Langley's instrumentation repair, calibration, and applications, and research data acquisition system design, development, and maintenance.

- Served as Chairman of a Source Evaluation Board for the acquisition of instrument support services at Langley. The resulting contract was a 5-year effort, with a total value more than $50M.

- Served as one of 13 members of the Langley Space Technology Strategy Development Team, contributing to the Team's recommendations to Langley Senior Management that space technology management become more focused, and that the Center concentrate in three focus areas.

- Served as a member of the Langley Institutional Management Assessment Blue Team, which developed a critical examination of the institutional support functions at Langley.

- Chaired a Langley Committee on Execution of Secondary Targeted Technology Transfer as part of an agency initiative to improve its record in technology transfer to both aerospace and non-aerospace industry.

February 1989 - August 1989: Assistant Chief, Instrument Research Division
NASA - Langley Research Center, Hampton, VA

- Assisted in the management and technical direction of civil servants and support contractors engaged in measurements technology development and instrumentation support services for Langley's and NASA's aerospace research activities.

- Served as Chairman of a Source Evaluation Board for the acquisition of aerospace research and development support services at Langley. The resulting contract was a 5-year effort, with a total value up to $250M.

April 1983 - February 1989: Assistant Chief, Flight Electronics Division,
NASA - Langley Research Center, Hampton, VA

- Managed more than 150 civil service and contractor personnel involved in electronics and instrumentation research and applications to spacecraft and aircraft flight experiments; managed a research, project, and program support budget of more than $8 million/year.

- Responsible for all aeronautics-related research and applications work in the Division, including development of new programs, coordination with aeronautics discipline Divisions.

- Served as Chairman of Award Fee Evaluation Board for a $20 million/year support services contract covering all disciplines of aerospace R&D (e.g. aircraft and spacecraft structures, aerodynamics, electronics and sensors, atmospheric science, projects, aircraft and spacecraft systems).

- Served as Chairman of a NASA Intercenter Working Group on Aeronautical Sensors, assessing state-of-the-art, defining needs, and developing research program advocacy.

- Organized and chaired an inter-Agency Workshop on Aircraft Wake Vortex Sensor Technology.

- Developed Agency program in optical disk recorder technology for high data rate and capacity spacecraft applications.

February 1981 - April 1983: Technical Assistant to the Director for Electronics,
NASA - Langley Research Center, Hampton, VA

- Served as the Langley Research Center's ADP and Computer Security Officer.
- Responsible for day-to-day operations of a research and program/project support Directorate of over 900 civil service and support contractor employees, with an annual budget of more than $30 million.
- Represented Electronics Directorate at NASA Headquarters management reviews in the aerospace disciplines of controls and guidance, electronics and data systems, and electromagnetics.
- Responsible for coordinating annual research program preparation and submittal from Electronics Directorate organizations, and for periodic monitoring and review of progress and accomplishments.

August 1976 - January 1981: Staff Assistant to the Director for Electronics,
NASA - Langley Research Center, Hampton, VA

- Served as member of NASA-wide team to develop an Agency plan in Avionics, Control and Human Factors as part of the aeronautics research program.
- Served as Langley Research Center coordinator and focal point for a series of inter-Center reviews of space research and technology.
- Served as principal Directorate liaison with Air Force, FAA, and other agencies involved in aeronautics research and development.

August 1975 - July 1976: Chief of Avionics, NASA Headquarters,
Washington, DC

- Served as Agency manager of Avionics and Flight Controls Research and Technology Base programs, including budget preparation and advocacy, program management and review, preparation of OMB and Congressional briefing material, and inter-Agency coordination.
- Participated on helicopter and V/STOL "theme teams" to develop new initiative advocacy for NASA management and Congress.
- Conducted and compiled extensive review of avionics and instrumentation research sponsored
by all NASA Headquarters aeronautics discipline program offices.

September 1972 - July 1976: Technical Assistant, Flight Dynamics and Control Division, NASA - Langley Research Center, Hampton, VA

- Served as Principal Investigator and project engineer for a Skylab space flight astronaut-manned experiment to assess disturbances to spacecraft control systems from onboard crew movements. Experiment was successfully conducted on Skylab 3 mission in 1973.

June 1965 - September 1972: Aerospace Technologist, Applied Materials and Physics Division/Flight Dynamics and Control Division NASA - Langley Research Center, Hampton, VA

- Conducted analytical and experimental research into manned spacecraft attitude control.
- Developed a zero-gravity astronaut mass measurement system for potential use in space.

March 1961 - June 1965: Cooperative Engineering Student Trainee, Virginia Polytechnic Institute/NASA - Langley

- Seven work periods in various NASA-Langley Divisions, alternated with academic quarters at Virginia Tech.

BIBLIOGRAPHY/PUBLICATIONS

1. Maine, R.B.; and Weitzmann, A.L.: Development of Prototype Mass Measurement System for Space Flight. NASA CR-66174, October 1966. (Bruce A. Conway, TRCO)

2. Tewell, J. R.; and Murrish, C.H.: Engineering Study and Experiment Definitions for an Apollo Applications Program Experiment on Vehicle Disturbances Due to Crew Activity. NASA CR-66277, March 1967. (Bruce A. Conway, TRCO)

3. Conway, Bruce A.: CMG Program Review, Langley Research Center, May 1967.

4. Maine, R.B.; and Weitzmann, A.L.: Development of Prototype Mass Measuring System for Space Flight Phase II. NASA CR-66479, November 1967. (Bruce A. Conway, TRCO)

5. Murrish, C.H.; and Smith, G.W.: Apollo Applications Program Crew Motion Experiment Program Definition and Design Development. NASA CR-66588, May 1968. (Bruce A. Conway, TRCO)

6. Conway, Bruce A.: An Analysis of the Operation of a Mass Measuring System in an Orbiting Spacecraft. NASA TN D-5039, February 1969.

7. Kyle, R.G.; Meetze, L.E.; and Conway, B.A.: Astronaut Control Console. Design and Operations Manual, June 1970.

8. Conway, Bruce A.: Development of Skylab Experiment T-013 Crew/Vehicle Disturbances. NASA TN C-6584, January 1972.

9. Conway, Bruce A.: Mathematical Crew Motion Disturbance Models for Spacecraft Control System Design. Thesis submitted to George Washington University toward M.S. degree, March 1974.

10. Conway, Bruce A.: Investigation of Crew Motion Disturbances on Skylab Experiment T-013. Paper presented to the American Astronautical Society Annual Meeting--Symposium on Living and Working in Space, Los Angeles, California, August 20-22, 1974.

11. Conway, Bruce A.; and Hendricks, T.C.: A Summary of the Skylab Crew/Vehicle Disturbances Experiment T-013. NASA TN D-8128, March 1976.

12. Kullas, M. Conlon: Handbook on Astronaut Crew Motion Disturbances for Control System Design. NASA RP-1025, May 1979. (Edited by Bruce A. Conway, TRCO)

13. Conway, B.A. (Compiler/Editor): Summary Report of a Workshop on Wake Vortex Detection Technology, held at NASA Langley Research Center, September 13-15, 1983.

14. Conway, B.A.: Position Paper on "ADP Management at Langley - 1983".

15. Conway, B.A. (Compiler/Editor): Summary Report of a NASA/DOD Coordination Meeting on Advanced Solid State Laser Technology, held at NASA Langley Research Center, January 16-17, 1984.

16. Allario, F.; and Conway, B.A.: "An Overview of NASA Requirements for Tunable Solid State Laser Systems and Technology". Presented at the 1st Annual Conference on Tunable Solid State Lasers, June 13-15, 1984.

17. Conway, B.A.; and Ciffone, D.L.: "Sensors for Aeronautical Applications". Presentation to OAST Sensors Working Group, November 6-7, 1984.

18. Conway, B.A.: "Sensors for Aeronautical Applications: A Strategy for Aerospace Plane, Aircraft Flight Research, and Wind Tunnel Testing." presentation to OAST Sensors Working Group, February 11-13, 1986.

19. Shull, T.A. and Conway, B.A.: "Spaceborne Optical Disk Controller Development." Presented at SPIE Optical Mass Storage Conference, August 18-23, 1986.

20. Conway, B.A.: "Sensor Technology - From Aerospace to Zephyrs." Keynote Address presented to the First Annual SENSORS EXPO, September 17-19, 1986.

21. Shull, T.A., Holloway, R.M., and Conway, B.A.: "NASA Spaceborne Optical Disk Recorder Development." Presented at SPIE Optical Storage Technology and Application Conference, January 10-15, 1988.

22. Conway, B.A.: "NASA Programs in Advanced Sensors and Measurement Technology for Aeronautical Applications." Presented at the 17th Congress of the International Council of the Aeronautical Sciences, Stockholm, September 9-14, 1990.

23. Conway, B.A.: "Aerospace Measurements: Challenges and Opportunities." Presented at the 18th Congress of the International Council of the Aeronautical Sciences, Beijing, September 20-25, 1992.

24. Unal, R. and B.A. Conway: "Survey to Determine Influence of Design Parameters on Operations & Support Complexity and Cost for Launch Vehicles." Final Report, NASA PO# L-12288 (Old Dominion University Research Foundation Project No: 104881). December 2000.

25. Conway, B.A. and R. Unal: "Use of Expert Judgment in Cost Estimating: An Application." Presented at the ASEM 2002 National Conference, Tampa, FL. October 2002.

26. Conway, Bruce A.: Calibrating Expert Assessments of Advance Aerospace Technology Adoption Impact (Doctoral dissertation, Old Dominion University, 2003). August 2003

27. Conway, B.A., T.M. Chytka, C.B. Keating, and R. Unal: " An Expert Judgment Approach to Uncertainty Assessment." Presented at the ASEM 2003 National Conference, St. Louis, MO. October 2003.

28. Unal, R., C. Keating, B. Conway, and T. Chytka: "Development of a Multi-Expert Judgment Aggregation Capability in a Conceptual Design Environment." Final Report, NASA PO# NASA NCC-1-02044 (Old Dominion University Research Foundation Project No: 130012). January 2004.

29. Chytka, T.M., B.A. Conway and R. Unal: "Uncertainty Quantification Using Expert Elicitation, Calibration and Aggregation in Aerospace Conceptual Design." Presented at 10th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Albany, NY. August 2004.

30. Unal, R., C. B. Keating, T.M. Chytka, and B.A. Conway: "Calibration of Expert Judgments Applied to Uncertainty Assessment." Engineering Management Journal, June 2005.

31. Unal, R., B.A. Conway, and T.M. Chytka: "An Expert Judgment Approach For Addressing Uncertainty In High Technology System Design." Presented at PICMET '06: Technology Management for the Global Future, Istanbul, Turkey. July 2006

32. Houston, S.J, R.O. Walton, and B.A. Conway: "Analysis of General Aviation Instructional Loss of Control Accidents." Journal of Aviation/Aerospace Education & Research, Fall 2012.

MANAGEMENT/EXECUTIVE TRAINING

	COURSE HOURS
PERT and Companion Cost System Workshop (1967)	20
Work Planning and Progress Review (1972)	16
Supervision and Management in NASA (1972)	40
Human Rights Training Seminar (1973)	8
Langley Policy and Procedures (1973)	12
Civil Service Middle Management Institute (1975)	40
Transactional Management (1975)	24
Career Development Program - NASA Headquarters ('75-'76)	2080
LaRC Supervisory Training in Personnel Administration (1978)	35
OPM Management Development Seminar (1982)	80
NASA Management Education Program (1984)	80
Harvard Program for Management Development (1986)	3 months
Federal Executive Institute (1989)	4 weeks
NASA Senior Executive Program (1991)	64

AWARDS

- NASA Skylab Achievement Award 1974
- LaRC Group Achievement Award 1975
  [Skylab Experiment T-013 Development]
- LaRC Group Achievement Award 1975
  [Control Moment Gyro Research Project]
- NASA Group Achievement Award 1979
  [Avionics, Controls, and Human Factors

Planning Activity]

- Outstanding Performance 1978
- Outstanding Performance 1980
- Outstanding Performance 1984
- NASA Group Achievement Award 1987
  [OAST Sensors Working Group Activity]
- Outstanding Performance 1987
- Outstanding Performance 1992
- Old Dominion University Engineering Management Faculty Award 2003
  For Graduate Student Achievement
- Inducted into Epsilon Mu Eta, Engineering Management 2003
  Honor Society

OTHER

- Date of Birth: November 6, 1942
- Place of Birth: Hampton, Virginia
- Family: Married (Carol), two grown children.
- Associate Fellow, AIAA
- Past Chairman, AIAA Technical Committee on Sensor Systems
- Member, American Society for Engineering Management
- Member, International Council on Systems Engineering (INCOSE)