Ann and H.J. Smead
Department of Aerospace Engineering Sciences
UNIVERSITY OF COLORADO BOULDER

Donna Sue (Edens) Gerren **1/23/2023**

Academic Rank: Principal Instructor

Degrees:
- Ph.D. - Aerospace Engineering, University of Kansas, Lawrence, 1995
- M.S.E. - Aerospace Engineering, University of Michigan, Ann Arbor, 1985
- M.S. - Aerospace Engineering Sciences, University of Colorado, Boulder, 1979
- B.S.- Aerospace Engineering Sciences, University of Colorado, Boulder, 1977

Number of Years of Service on this Faculty: 27 years, 1996 – present
- Principal Instructor in Aerospace Engineering Sciences, University of Colorado, Boulder, 2017 – present
- Senior Instructor in Aerospace Engineering Sciences, University of Colorado, Boulder, 1999 – 2017
- Lecturer in Aerospace Engineering Sciences, University of Colorado, Boulder, 1996 – 1999
- Served on Search Committee for Teaching Professor hire – 2022 - present
- Served on Instructors Reappointment Committee for Instructor Dr. Kathryn Wingate, 2020/2021
- Served on Instructors Reappointment Committee for Senior Instructor Trudy Schwartz, 2019
- Faculty mentor for Robert Hodgkinson – 2019 – present
- Faculty mentor for John Mah – 2018 - present
- Faculty mentor for Dr. Jelliffe Jackson – 2012 – 2022
- Aerospace Engineering Sciences Outreach Assistant to the Department, University of Colorado, Boulder, 2012 – 2014
- Served on the departmental Executive Committee, 2011 – 2012
- Served on the departmental Undergraduate Committee, 2010 – 2011, 2013 – 2015, 2016 - 2018
- Aerospace Engineering Sciences Alumni Relations and Communications Assistant to the Departmental Chair, University of Colorado, Boulder, 2004 – 2013
- Served on the departmental Curriculum and Teaching Upper Division Implementation Committee,1999 – 2000, 2006 – 2007

Other Related Experience:
- Worked at NASA Dryden Flight Research Center under a grant to the University of Kansas Center for Research, Inc. Performed research pertinent to doctoral dissertation, including designing a large transport aircraft, implementing this design on a fixed-base simulator, and performing simulator flight test experiments using NASA flight test pilots, 1992 - 1994

- Employed at Design, Analysis and Research Corporation (DARCorporation) in Lawrence, Kansas. Worked as an engineer involved in the development of Advanced Aircraft Analysis (AAA), an interactive computer program to perform preliminary design and analysis functions for fixed wing aircraft, 1991 - 1992

- Employed by McDonnell-Douglas Corporation in Long Beach, California. Participated in DC-10 noise certification program, DC-10 sustaining work, and in a variety of 2-dimensional transonic analyses, including supercritical airfoil design and design and analysis of high-aspect-ratio, transonic wings. Taught a class in structured FORTRAN to company engineers, 1980 – 1982

- Employed by Martin-Marietta Aerospace Division in Denver, Colorado. Worked as a mass properties engineer on Titan vehicles, 1979

- Employed by LTV Aerospace in Houston, Texas. Technical advisor in transcription of joint American-Soviet Apollo-Soyuz space mission tapes, 1975

Consulting:

- Consultant for Kennedy Aeronautics, Inc., 1998 – 2010
- Gathered data on propeller blades which were used and acknowledged by Dr. Daniel Raymer in his AIAA textbook "Aircraft Design: A Conceptual Approach", 4th through 6th Editions, 2005 -2018
- Consultant for Aeroscope, Inc., 2000 – 2004

Engineering Societies and Societies Related to Profession:

- AIAA - American Institute of Aeronautics and Astronautics (Associate Fellow)
- Faculty Row (America's Top Faculty)
- Order of the Engineer
- SAWE – Society of Allied Weight Engineers (Fellow; Vice-President of Academic Affairs, 2013 – present; on Board of Directors; on Executive, Academic Affairs, Scholarship, and Technical Committees)
- SGT - Sigma Gamma Tau (National Aerospace Engineering Honor Society)
- TBP - Tau Beta Pi (National Engineering Honor Society)
- The Ninety-Nines - International Organization of Women Pilots

Honors and Awards:

- Nominated for the John and Mercedes Peebles Innovation in Education Award, 2022
- President's Award from SAWE for contributions to the SAWE By-Laws and Operations Manual, 2022
- President's Award from SAWE for contributions to the SAWE Handbook, 2021
- President's Award from SAWE for the "Implementation of the Academic Liaison Initiative", 2020
- Second Place in the 2017 CU Boulder College of Engineering Top Teaching Performers
- Northrup Grumman Group Achievement Award for the Boundary Layer In Situ Sensing System (BLISS) Team "In Recognition of Outstanding Engineering Design, Implementation, and Prototyping to Develop an Autonomous Unmanned Aerial Vehicle and Instrumentation", 2015
- Charles Hutchinson Memorial Teaching Award, 2014
- Aerospace Engineering Department's Outstanding Undergraduate Teaching and Mentoring Award, 2014 (first time awarded)
- National AIAA Special Service Citation "In Recognition of Your Outstanding Leadership, Planning and Executing as General Chair for Region V Student Paper Conference 2012 Hosted by the University of Colorado Boulder", 2012
- AIAA Rocky Mountain Section Educator of the Year Award, 2009
- John and Mercedes Peebles Innovation in Education Award, 2009
- College of Engineering Outstanding Advisor Award, 2009
- Boeing Welliver Faculty Fellowship, 2007
- American Institute of Aeronautics and Astronautics (AIAA) National Faculty Advisor Award, 2007
- Subaru Educator Spotlight Award of $500 from Subaru of America Foundation, 2004

- National AIAA Special Service Citation “In Recognition of Your Outstanding Effort in Planning, Coordinating and Executing the 2003 Region V Student Conference”, 2003
- University of Colorado Distinguished Engineering Alumni Award (DEAA) in Education, 2002
- Nominated for Sullivan-Carlson Teaching Award, 2000
- AIAA Rocky Mountain Section Faculty Advisor Award, 1998, 1999 and 2000

Grants:

- Awarded $10,000 grant by General Dynamics as principal investigator of “Construction of a UCAV TestbedAircraft”. This grant supported testing of the Tactical Unmanned Aerial vehicle senior project (Fall 2001/Spring2002) built the previous year.
- Awarded $54,000 grant by General Dynamics as principal investigator of “Construction of a UCAV Testbed Aircraft”. This grant supported the Tactical Unmanned Aerial vehicle senior project (Fall 2000/Spring 2001).

Publications:

- “Optimal Maneuvers for Aircraft Conflict Resolution Based on Efficient Genetic Webs”, Malaek, S.M., Alaeddini, A. and Gerren, D. S., IEEE Transactions on Aerospace and Electronic Systems, October 2011, 47(4):2457 – 2472
- Gerren, Donna, "Design, Analysis, and Control of a Large Transport Aircraft Utilizing Engine Thrust as a Backup System for the Primary Flight Controls," NASA CR-192937, Mar. 1993.

Institutional and Professional Service:

- Represented CU Aerospace Engineering Department at College of Engineering alumni outreach function in Seattle, Aug.31st – Sept. 1st, 2016
- Requested by University of Kansas to serve on their Aerospace Engineering Advisory Board (from 2016 – 2018)
- Diener, Suzanna, N. Keyek-Franssen, G. Davis, K. Corkey, D. Corona, R. E. Lacy, J. Schenderlein, R. Sloss, D. Smith, and D. Gerren. (2016). "UAV Platform for In-Situ Boundary Layer Wind Measurements," 18th Symposium on Meteorological Observation and Instrumentation, American Meteorological Society abstract accepted
- Requested by Dean’s Office to serve on college’s Charles Hutchinson Memorial Teaching Award Selection Committee (from 2015 - 2017)
- Researched and developed “Dealing with Larger Classes – Problems and Mitigations” presentation delivered at May 5th, 2015, departmental retreat
- Presented “SAWE Academic Committee: What We Have Been Doing This Year and Why You Need to Know” at Society of Allied Weight Engineers (SAWE) International Conference, Alexandria, Virginia, May 18,2015
- Reviewed Manuscript ID 2014-09-C033213 entitled "Sliding Mode Longitudinal Control for a Four Engine Propulsion Controlled Aircraft" submitted for publication in the AIAA Journal of Aircraft, 2014
- Reviewer of master’s thesis of William J. Wheeler at Cranfield University entitled “Techniques for Estimating Aeroplane Dynamics from Recorded Data”, 2011
- Nominated CU alumnus Dr. John McMasters for the College of Engineering’s Distinguished Engineering Alumni Award (DEAA), which he won, September 2007
- Requested by Dean’s Office to serve on Distinguished Engineering Alumni Award Selection Committee(from 2003 - 2006) – served as Vice-Chairman in 2005 and Chairman in 2006
- Requested by Dean’s Office to serve on Advisory Board of the Colorado Engineering Magazine, 2002 -2012
- A judge for the Math, Engineering and Science Achievement (MESA) model glider competition held at theUniversity of Colorado for high school students, 2000 – 2002

- Faculty Advisor, CU Boulder Chapter of AIAA, 1998 – present
- Faculty Advisor, CU Boulder Chapter of SGT, 2007 – present
- Faculty Advisor, CU Boulder Chapter of TBP, 2021 - present
- Faculty Advisor, CU Skunks (NASA competition team), 2017 - 2019
- Faculty Advisor, Design, Build, Fly, 2007– present
- Faculty Advisor, Flying Club at CU, 2004 – present
- AIAA Rocky Mountain Section Leadership Council - Vice-Chairman of the Northern Section, 1998 – 2003, 2012 – 2015; Member-At-Large, 2015 - 2021
- Reviewer of doctoral dissertation of Lt. Col. Brian William Kowal at the University of Daytonentitled "The Theoretical Basis for Propulsion Control of Aircraft", 2000
- Have flown twice on NASA's KC-135 "Weightless Wonder" reduced gravity aircraft, better known as the "Vomit Comet", as a participant in NASA's Reduced Gravity Student Flight Opportunities Program. Participated as a journalist for two student teams from University of Colorado, 1999 and 2001

Special Skills: FAA-certified private pilot with some instrument and aerobatic training