



ROBERT C. WINN, Ph.D., P.E., FAIAA, FRAeS
PRINCIPAL EMERITUS

rcwinn@engsys.com

Dr. Winn is a Mechanical/Aeronautical Engineer and Principal Emeritus for Engineering Systems Inc. (ESi). He has been a Consulting Engineer since he retired in 1991 from the U.S. Air Force following a 22-year career and has been with ESi since 1994. Dr. Winn was an instructor pilot in four different Air Force aircraft and served as Chief Scientist of the USAF European Office of Aerospace Research and Development in London, England. He spent over 15 years teaching Aeronautical and Mechanical Engineering at the USAF Academy and Colorado Technical University. He is a Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and a Fellow of the Royal Aeronautical Society (RAeS). He has served as a member of the Society of Automotive Engineers AC-9C Subcommittee on Aircraft Icing Technology. Dr. Winn taught, directed research, published over 70 technical papers, technical reports, and articles, and has given numerous presentations on a wide variety of technical and education issues.

Areas of Specialization

- Airplane and helicopter performance and accident reconstruction
- Aircraft flight path reconstruction
- Interpretation and analysis of radar data and flight data/cockpit voice recorders
- Analysis and modeling of dynamic system
- Thermodynamics, heat transfer, and fluid dynamics
- Aircraft ice accretion and performance degradation prediction
- Aircraft anti-icing system performance
- Intellectual property rights, patent infringement

Education

- Ph.D., Mechanical Engineering, Colorado State University, 1982
- M.S., Mechanical Engineering, University of Illinois, 1969
- B.S., Mechanical Engineering, University of Illinois, 1968

Licensed Professional Engineer (P.E.)

- State of Alabama License No. 28130-E
- State of Colorado License No.16818

January 2020

Professional Affiliations/Honors

Tau Beta Pi, Engineering Honor Society

American Institute of Aeronautics and Astronautics (AIAA)

Fellow
Executive Nominating Committee
Member 2017 – present
Chairman 2017 – 2018
Member, Emerging Technologies Standing Committee, 2004 – present
Member, International Strategy Working Group, 2016 – present
Distinguished Lecturer, 2007 – present
Member, Ethics Committee, 2016 – present
Member, Investment Subcommittee, 2015 – 2018
Member, Institute Development Committee, 2005 – 2017
Vice President for Finance, 2011 – 2015
Vice President for Technical Activities, 2001 – 2005
Member, Finance Committee, 2009 – 2017
Director at Large, 2005 – 2008
Member, Board of Directors, 2001 – 2008, 2011 – 2015
Chairman, Emerging Technologies Standing Committee, 2004 – 2006
New Initiatives Subcommittee
Member 1990 – 2001
Chairman, 1999 – 2001
Deputy Director for Energy Conversion, 1990 – 2000
Terrestrial Energy Systems Technical Committee
Chairman, 1988 – 1993
Member, 1984 – 2000
Rocky Mountain Section
Vice Chairman, 1984 – 1985
Secretary, 1983 – 1984

Royal Aeronautical Society (RAeS)

Fellow
Member, Council, 2015 – present
Member, International Strategy Working Group, 2015 – 2018

Society of Automotive Engineers (SAE)

Member/Consultant, SAE AC-9C, Aircraft Icing Technology Subcommittee
1995 - 2013
Certificate of Achievement – Motor Vehicle Accident Reconstruction, March 2003

FAA General Aviation Joint Steering Committee, Controlled Flight into Terrain Working Group

Member, 2017 – 2019

AIAA Distinguished Service Award, 2017

AIAA Energy Systems Award, 2009

AIAA Sustained Service Award, 2001

International Advisory Committee, Centre of Excellence for Integrated Aircraft Technologies, Queen's University Belfast
Member, 2003 - 2006

Math, Science, and Engineering Advisory Board, Colorado Technical University,
Member, 1992 - 2017

Department of Aeronautics Advisory Panel, USAF Academy
Member, 1991 - present

Colorado Engineering Council Certificate of Merit
1986

Daley Award to the Outstanding Member of the USAFA Dept. of Aeronautics
1986

Positions Held

Engineering Systems Inc., Colorado Springs, Colorado

Principal Emeritus, 2018 - present
Chairman of the Board, Principal, and Director-Aviation, 2009 - 2018
Principal, Director of Colorado Operations, 2002 - 2009
Senior Consultant, 1994 - 2002

Self Employed, Colorado Springs, Colorado

Consulting Engineer, 1991 - 1994

Colorado Technical University, Colorado Springs, Colorado

Adjunct Professor, 1991 - 2000

Department of Aeronautics- USAF Academy, Colorado

Professor and Deputy for Operations, 1988 - 1991
Associate Professor, 1982 - 1986
Assistant Professor, 1976 - 1979

USAF European Office of Aerospace R&D, London, England

Chief Scientist, 1986 - 1988

USAF 61st Tactical Airlift Squadron, Little Rock AFB, Arkansas

C-130 Aircraft Commander and Instructor Pilot, 1974 - 1976

USAF, 14th Student Squadron, Columbus AFB, Mississippi

T-37 Instructor Pilot and Academic Instructor, 1970 - 1974

Publications

Morris, S. and **Winn, R.C.**, "Unconventional Sources of Data for Accident Reconstructions," American Bar Association, Aviation and Space Law, Committee News, Summer 2019.

Fox, C., Lucek, J., Morris, S., **Winn, R.C.**, and Kenner, M., "The Use of Virtual Reality in Aviation Accident Analysis and Reconstruction," SMU Air Law Symposium, Dallas, TX, March 2019.

Winn, R.C., Fox, C., Morris, S., Kenner, M., Lucek, J., "Aviation Accident Reconstruction Using Virtual Reality and Other New Technologies," DRI 2019 Product Liability Seminar, Austin, TX, February 2019.

Jung T., Morris, S., and **Winn, R.C.**, "The Use of Virtual Reality in Accident Reconstruction," ATS-2018 American Institute of Aeronautics and Astronautics Rocky Mountain Section Annual Technical Symposium, October 2018.

Smith, K.M., Slane, J.H., and **Winn, R.C.**, "Trajectory Analysis of Free-Floating Objects: A Drift Prediction Model," SNAME 2013 Annual Meeting, Bellevue, WA, November 2013.

Graue, R.M., Edwards, J.E., Slane, J.H., **Winn, R.C.** and Klosinski, K.B., "Smoothing CDR Radar Data," ISASI Forum, July-September 2010.

Winn, R.C., "Aircraft Icing for Dummies," Skywritings, The newsletter of the DRI Aerospace Law Committee, Fall 2008, pages 25-29.

Butler, R., **Winn, R.C.**, Morris, S., Slane, J., Turnquist D., and Wooddell, M., "Using GPS-based Data Acquisition to Evaluate Vehicle and Driver Performance," AIAA-2008-1146, Reno NV, January 2008.

Slane, J.H., Butler, R.J., Emmerling, J.J., Morris, S.L., **Winn, R.C.**, Kumley, K.B. "Evaluation of a General Aviation Flight Data Recorder," AIAA 2007-6365, Hilton Head SC, August 2007.

Winn, R.C., "Cost-Effective Demonstrative Exhibits: The ESi Approach," American Bar Association Aviation Litigation CLE Seminar, New York, NY, June 2007.

Winn, R.C., "The Cold Truth About Aircraft Icing," Proceedings of the Forty-First Annual SMU Air Law Symposium, Dallas, TX, February, 2007.

Winn, R.C., "Probing the Causes of Aircraft Accidents," Aerospace America, Vol. 44. No. 9, September 2006.

Winn, R.C., Slane, J. H., and Morris, S.L., "Aerodynamic Effects in the Milwaukee Baseball Stadium Heavy-Lift Crane Collapse," AIAA 2005-24272, Reno NV, January 2005.

- Winn, R.C.** and Morris, S.L., "Compensating for the Lag in Flammable Vapor Concentration Meters," 1st International Energy Conversion Engineering Conference, Portsmouth, VA, August 2003.
- Winn, R.C.** (Sponsor), "Ice Shape Measurement and Comparison Techniques Workshop," SAE Aerospace Resource Document, ARD5906, April 2003.
- Winn, R.C.**, Slane, J.H., and Morris, S.L., "Assessment of the Accuracy of Flight Path Reconstruction from ATC Radar Data Using Various Smoothing and Reconstruction Techniques," AIAA 2002-0391, Reno, NV, January 2002.
- Kohlman, D.L. and **Winn, R.C.**, "Analytical Prediction of Trajectories of Ice Pieces after Release in an Airstream," AIAA 2001-0680, Reno, NV, January 2001.
- Winn, R.C.**, and Slane, J.H., "The Curvilinear Approach to Flight Path Reconstruction from Recorded Radar Data," AIAA 2001-0411, Reno, NV, January 2001.
- Slane, J.H. and **Winn, R.C.**, "Accurate Flight Parameter Reconstruction from ATC Radar Data – a New Approach," SAE Transactions 1999 – Journal of Aerospace, Vol. 108, Sept. 2000.
- Slane, J.H. and **Winn, R.C.**, "Smoothing ATC Radar Data," ISASI Forum, Volume 33, No. 1, January-March 2000.
- Slane, J.H. and **Winn, R.C.**, "Accurate Flight Parameter Reconstruction from ATC Radar Data – a New Approach," World Aviation Congress, San Francisco, CA, SAE Paper No. WAC99-61, October 1999.
- Slane, J.H. and **Winn, R.C.**, "Accurate Flight Parameter Reconstruction from Smoothed ATC Radar Data," International Society of Air Safety Investigators Conference, Boston, MA, August 1999.
- Winn, R.C.**, "Analytical Calculation of Pressure Distribution on a Residential Roof," Proceedings of the 34th Intersociety Energy Conversion Engineering Conference, Vancouver, BC, August 1999.
- Winn, R.C.**, Kenner, M.T., and Kohlman, D.L., "Optimal Wing Design for Top-Fuel Dragsters," AIAA99-0464, Reno, NV, January 1999.
- Winn, R.C.** and Slane, J.H., "Optimal Smoothing of Low Frequency, Low Resolution Data," Proceedings of the 33rd Intersociety Energy Conversion Engineering Conference, Colorado Springs, CO, August 1998.
- Winn, R.C.**, Kohlman, D.L., and Kenner, M.T., "Improving the Aerodynamics of Top Fuel Dragsters," Proceedings of the 33rd Intersociety Energy Conversion Engineering Conference, Colorado Springs, CO, August 1998.
- Winn, R.C.** and Green, R.S., "Applying Total Quality Management to the Educational Process," International Journal of Engineering Education, 15 August 1998.
- Winn, R.C.** and Kohlman, D.L., "Computer Simulation of Aircraft and Automobile Behavior Upon Water Impact," AIAA Aerospace Sciences Meeting, Reno, NV, January 1998.

- Winn, R.C.** and Morin, C.R., "Low Cost Shadowgraph Technique for Flammable Vapor Visualization," Proceedings of the 32nd Intersociety Energy Conversion Engineering Conference, Honolulu, HI, July 1997.
- Shanefelt, D.Y. and **Winn, R.C.**, "A Paradigm Shift in Solar Collectors," Proceedings of the 31st Intersociety Energy Conversion Engineering Conference, Washington, D.C., August 1996.
- Winn, R.C.** and Green, R.S., "Total Quality Management in Curriculum Development," Proceedings of the 1993 AIAA Aerospace Sciences Conference, Reno, NV, January 1993.
- Bowman, W.J. and **Winn, R.C.**, "Transient Heat-Pipe Modeling, A Quasi-Steady, Incompressible Vapor Model," AIAA Journal of Thermophysics and Heat Transfer, Vol. 6, No. 3, July-September 1992, pages 571-574.
- Winn, R.C.**, "Application of Optimal Control Theory to Utility Demand Management," Proceedings of the 27th Intersociety Energy Conversion Engineering Conference, San Diego, CA, August 1992.
- Green, R.S. and **Winn, R.C.**, "Application of Total Quality Management to Engineering Education," Proceedings of the ASEE Annual Conference, Toledo, OH, July 1992.
- Green, R.S., **Winn, R.C.** and Smith, M.L., "Integrating Total Quality Management into a Thermodynamics Course," Proceedings of the First International Conference on Post High School Technical Education, Jerusalem/Tel Aviv, Israel, December 1991.
- Winn, R.C.**, Fernand, J.M., Hecker, J.B., and Plumley, R.L., "Planned Experimentation in Aircraft Design," ASEE Computers in Education Journal, Vol. 1, No. 4, October/December 1991.
- Bowman, W.J. and **Winn, R.C.**, "Transient Heat-Pipe Modeling, A Quasi-Steady, Incompressible Vapor Model," Proceedings of the 26th Intersociety Energy Conversion Engineering Conference, Boston, MA, August 1991.
- Winn, R.C.**, "Terrestrial Energy Systems," Aerospace America, Vol. 28. No.12, December 1990.
- Seymour, J.C., Grycewicz, T. and **Winn, R.C.**, "Hybrid Motor Vehicle Design Problem," Proceedings of the 26th Joint Propulsion Conference, Orlando, FL, June 1990.
- Winn, R.C.**, Fernand, J.M., Hecker, J.B., and Plumley, R.L., "Planned Experimentation in Aircraft Design," Proceedings of the ASEE Annual Conference, Toronto, Canada, July 1990.
- Winn, R.C.**, "How Much Testing Is Enough?," Proceedings of Frontiers in Education '90, Vienna, Austria, July 1990.
- Stiles, R.J., Smith, M.L., Russell, J.H., and **Winn, R.C.**, "Teaching Basic Skills in Engineering," Proceedings of Frontiers in Education '90, Vienna, Austria, July 1990.

- Schmidt, S.R., **Winn, R.C.**, Fernand, J.M., Hecker, J.B., Plumley, R.L., and Bernardi, L., "Planned Experimentation in Aircraft Design," Proceedings of the 1st National Conference on Design for Manufacturing Competitiveness in the Aerospace & Defense Industries, Los Angeles, CA, January 1990.
- Winn, R.C.**, "Terrestrial Energy Systems," Aerospace America, Vol. 27, No.12, December 1989.
- Stiles, R.J., Smith, M.L., Russell, J.H., and **Winn, R.C.**, "Teaching Aeronautics with Spreadsheets," Proceedings of the ASEE Annual Conference, Lincoln, NE, July 1989.
- Byerley, A.R. and **Winn, R.C.**, "CAI in Thermodynamics at the USAF Academy," Engineering Education, Vol. 76, No. 4, February 1986.
- Winn, R. C.**, "How to Fairly Account for an Excused Exam," USAF Academy Technical, Report 85-1 1, September 1985.
- Winn, R.C.** and Winn, C.B., "Optimal Control of Auxiliary Heating of Passive Solar Heated Buildings," Journal of Solar Energy, Vol. 35, No. 5, 1985, pages 419-427.
- Winn, R.C.**, "New Controls of Advanced Residential Heating Systems," USAF Academy Technical Report 83-15, Fall/Winter 1982.
- Winn, C.B. and **Winn, R.C.**, "Optimal Control of Solar and Off-Peak Energy Storage Installations," ASME Journal of Solar Energy Engineering, Vol. 105, February 1983, pages 50-57.
- Winn, R.C.**, "Optimal Control of Residential Heating and Cooling Systems," Ph.D. Dissertation, Colorado State University, Fort Collins, CO, 1982.
- Winn, C.B., **Winn, R.C.**, Baer, C., and Armstrong, P., "Preferred Systems Controls for Optimizing the Performance of Solar Heating and Cooling and Heat and Cool Storage Installations," Summary Report, EPRI Project 1670-1, May 1982.
- Winn, C.B. and **Winn, R.C.**, "Optimal Control of Passive Solar Buildings with Load Managed Storage," Proceedings of the Annual Meeting of the American Section of the International Solar Energy Society, Houston, TX, 1982.
- Winn, C.B. and **Winn, R.C.**, "Optimal Control of Solar and Off-Peak Load Managed Heating and Cooling Systems," Proceedings of the Annual Meeting of the American Section of the International Solar Energy Society, Houston, TX, 1982.
- Winn, C.B. and **Winn, R.C.**, "Optimal Control of Solar Energy and Off-Peak Storage Installations," Proceedings of the ASME Solar Energy Conference, Albuquerque, NM, 1982.
- Winn, R.C.** and Winn, C.B., "Optimal Control of Mass Flow Rates in Flat Plate Solar Collectors," ASME Journal of Solar Energy Engineering, Vol. 103, No. 2, May 198 1, pages 113-120.

Winn, R.C. and Winn, C.B., "Optimal Control of Solar Energy Collection in Solar House 11 at Colorado State University," Proceedings of the Joint Automatic Control Conference, San Francisco, CA, 1980.

Winn, R. C. and Winn, C.B., "Implementation of an Optimal Controller of the Second Kind," Proceedings of the System Simulation and Economic Analysis Conference, San Diego, CA, 1980.

Winn, R.C., "Optimization of Low Quality Energy Conversion," USAF Academy Technical Report 79-7, Spring 1979.

Stoecker, W.F., **Winn, R.C.**, and Pedersen, C.O., "Optimization of Air-Supply Duct Systems," Proceedings of the National Bureau of Standards Conference, Washington, D.C., 1969.

Winn, R. C., "A Computer Program to Optimize the Design of Air-Supply Duct Systems," M.S. Thesis, University of Illinois, Urbana, 1969.

Engineering Reports

Winn, R.C. and Morris, S.L., "Analysis of the Ice Accretion on the Ejector of the Really Quiet Hush Kit for the Gulfstream II and III," REALLY Quiet LLC, Report No. 10719C-1, December 2001.

Winn, R.C. and Kohlman, D.L., "Analysis and Recommendations Concerning the Malibu Meridan Nose Wheel Steering Investigation," The New Piper Aircraft, Inc., Report No. 10231C-1, September 2001.

Winn, R.C., "Ejector Ice Accretion Analysis for the QTG, Gulfstream GII/GIII Stage 3 Hushkit," Quiet Technology Gulfstream Inc. Report No. QTG-4005, May 2001.

Winn, R.C. and Morris, S.L., "Ice Accretion Analysis on a UAV Wing – Part 4," Israel Aircraft Industries Report 8454C-4, May 2001.

Winn, R.C. and Morris, S.L., "Ice Accretion Analysis on a UAV Wing – Part 3," Israel Aircraft Industries Report 8454C-3, March 2001.

Winn, R.C. and Morris, S.L., "Ice Accretion Analysis on a UAV Wing – Part 2," Israel Aircraft Industries Report 8454C-2, March 2001.

Winn, R.C. and Morris, S.L., "Ice Accretion Analysis on a UAV Wing," Israel Aircraft Industries Report 8454C, December 2000.

Winn, R.C., "BAC 1-11 400 Series Acoustic Ejector Ice Accretion Analysis," Quiet Technology Ventures Report No. QTV-3027, January 2000.

Winn, R.C., "BAC 1-11 400 Series Extended Inlet Bullet Anti-Ice Analysis," Quiet Technology Ventures Report No. QTV-3026, December 1999.

Winn, R.C. "Effects of Aircraft Speed on Critical Icing Design Conditions," Burbank Aeronautical Corporation II, Engineering Systems Inc. Report No. 5359C-2, 21 October 1998.

Winn, R.C. "Induction System Icing Protection Analysis," Burbank Aeronautical Corporation II, Engineering Systems Inc. Report No. 5359C-1, 20 October 1998.

Winn, R.C. "Inlet Bullet Anti-Icing Analysis," Burbank Aeronautical Corporation II Report No. 707-TR-263, 9 October 1998.

Kohlman, D.L. and **Winn, R.C.**, "Analysis of Stability and Performance Changes to the Falcon 50 and Falcon 900 Resulting from Ice Accretion on the Proposed Radome," JetCorp Report No. 13-402R001, September 1998.

Kohlman, D.L. and **Winn, R.C.**, "Analysis of DC-8-61 Controllability with In-Flight Thrust Reverser Deployment," Quiet Nacelle Corporation Report No. QNC-2032, October 1996.

Winn, R.C. and Kohlman, D.L., "Ejector Ice Shape Prediction," Quiet Nacelle Corporation Report No. QNC-2106, February 1995.

Winn, R.C. and Kohlman, D.L., "Inlet Ring Thermal Analysis," Quiet Nacelle Corporation Report No. QNC-2105, December 1994.

Winn, R.C. and Kohlman, D.L., "Ejector Pressure Profile," Final Report, Quiet Nacelle Corporation Project QNC-2104, September 1994.

Winn, R.C. and Kohlman, D.L., "Analysis and Design of the Anti-Icing System for the Acoustic Ring on the DC-8 Hushkit," Final Report, Quiet Nacelle Corporation, May 1994.

Baer, C., Hewett, D., Stephens, M., Tully, W., and **Winn, R.C.**, "Global Positioning System Simulation," Final Report, USAF Project RDA-TR-18-0306, January 1993.

Winn, C.B., **Winn, R.C.**, Baer, C. and Armstrong, P., "Preferred Systems Controls for Optimizing the Performance of Solar Heating and Cooling and Heat and Cool Storage Installations," Final Report, EPRI Project 1670-1, May 1982.

Presentations

Winn, R.C., "Anatomy of an In-Flight Breakup," AIAA Indiana Section, Indianapolis, IN, January 2020.

Gross, R. and **Winn, R.C.**, "Dealing with Expert Witnesses: See and Avoid These Common Mistakes," American Bar Association, Tort Trial & Insurance Practice Section, Washington, DC, October 2019.

Winn, R.C., "Accident Reconstruction Needs Data – Where to Get It and How to Use It," AIAA Carolina Section, Charlotte, NC, September 2019.

Fox, C. and **Winn, R.C.**, "How Virtual Reality Aids Our Understanding of Events," Lloyds of London, September 2019.

Winn, R.C., "Accident Reconstruction Needs Data – Where to Get It and How to Use It," AIAA Region V Student Conference, Minneapolis, MN, April 2019.

- Winn, R.C.**, “My Experience Solving Airplane Accident Mysteries,” The Museum of Flight, Seattle WA, March 2019.
- Winn, R.C.** and Fox, C., “The Use of Virtual Reality Technology in Aviation Accident Reconstruction,” DRI 2019 Product Liability Seminar, Austin, TX, February 2019.
- Winn, R.C.**, “The Use of Virtual Reality Technology in Aviation Accident Reconstruction,” AIAA Pacific Northwest Region, November 10, 2018.
- Winn, R.C.**, “New Tools in Aviation Accident Reconstruction,” AIAA Pacific Northwest Region, November 10, 2018.
- Winn, R.C.**, “New Methods for Simulating, Animating, and Presenting Aviation Accident Reconstructions,” Aircraft Builders Council 2017 Annual Conference, San Francisco, CA, September 18, 2017.
- Winn, R.C.**, “Animations v. Simulations,” Royal Aeronautical Society, London, UK, June 20, 2017.
- Winn, R.C.**, “How Expert Witnesses Can and Do Influence the Outcome,” Xchanging Seminar Series, London, UK, November 2, 2016.
- Winn, R.C.**, “Anatomy of an In-Flight Breakup,” Bradt Lecture Series, University of Alabama, Tuscaloosa, AL, August 31, 2016.
- Winn, R.C.**, “The Miller Park Crane Collapse,” AIAA Huntsville Section, Huntsville, AL, February 25, 2016.
- Winn, R.C.**, “Anatomy of an In-Flight Breakup,” AIAA Atlanta Section, Atlanta, GA, September 24, 2015.
- Winn, R.C.**, “New Tools in Aircraft Accident Reconstruction,” AIAA Albuquerque Section, Albuquerque, NM, May 21, 2015.
- Winn, R.C.**, “Animations v. Simulations,” Tau Beta Pi Ohio Eta Chapter, Dayton, OH, December 5, 2014.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA Tucson Section, Tucson, AZ, December 5, 2013.
- Bradley, P., Ellis, S., King, B., and **Winn, R.C.**, “Trial of Lidle v. Cirrus Design Corporation: Liability and Damages Defense,” DRI Product Liability Conference, National Harbor, MD, April 3, 2013.
- Winn, R.C.**, “New Techniques in Aircraft Accident Reconstruction,” GBF Aviation Law Afternoon Workshop, Zurich, Switzerland, March 6, 2013.
- Winn, R.C.**, “New and Advanced Techniques in Aircraft Accident Reconstruction,” AIAA Rocky Mountain Section’s Technical Symposium, Denver, CO, October 26, 2012.

- Winn, R.C.**, “New and Advanced Techniques for Aircraft Accident Reconstruction,” Royal Aeronautical Society, London, UK, October 22, 2012.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA Rocky Mountain Section, Denver, CO, May 2, 2012.
- Winn, R.C.**, “Aircraft Accident Reconstruction – Science Fair Projects for Fun and Profit,” USAFA/Department of Aeronautics Dining Out, USAF Academy, October 14, 2011.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA-USAFA Science, Technology, Engineering, and Mathematics Workshop,” USAF Academy, CO, June 22, 2011.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA Long Island Section, Farmingdale, NY, May 26, 2011.
- Winn, R.C.**, “Mistakes and Deception in Aircraft Accident Reconstruction – Anatomy of an In-Flight Breakup,” Atlanta Chapter of ASM International, Atlanta, GA, November 16, 2010.
- Winn, R.C.**, “Aircraft Accident Reconstruction Using Aero 315,” USAF Academy Department of Aeronautics, USAF Academy, October 2010.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA-USAFA Science, Technology, Engineering, and Mathematics Workshop,” USAF Academy, CO, July 15 and 20, 2010.
- Turnquist, D.A. and **Winn, R.C.**, “Metallurgy and Mechanical in Product Liability,” Colorado Defense Lawyers Association Continuing Legal Education Seminar, Denver, CO, April 7, 2010.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA Indiana Section, Indianapolis, IN, May 7, 2009.
- Winn, R.C.**, “How To Properly Prepare for and Conduct a Wreckage Inspection,” Aviation Insurance Association Annual Meeting, San Francisco, CA, April 28, 2009.
- Winn, R.C.** and Butler, R.J., “The State of the Art in Accident Reconstruction,” Association of Defense Trial Attorneys Annual Meeting, Scottsdale, AZ, April 17, 2009.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA Southwest Texas Section, San Antonio, TX, December 11, 2008.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA Orange County Section, Santa Ana, CA, April 16, 2008.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA Phoenix Section, Scottsdale, AZ, April 17, 2008.
- Winn, R.C.**, “Mistakes and Deceptions in Aircraft Accident Reconstructions,” AIAA New Orleans Section, Slidell, LA, December 18, 2007.

- Winn, R.C.**, "Mistakes and Deceptions in Aircraft Accident Reconstructions," AIAA Atlanta Section, Marietta, GA, November 27, 2007.
- Winn, R.C.**, "Mistakes and Deceptions in Aircraft Accident Reconstructions," AIAA University of Colorado – Colorado Springs Student Chapter, Colorado Springs, CO, October 25, 2007.
- Winn, R.C.**, "Mistakes and Deceptions in Aircraft Accident Reconstructions," AIAA Albuquerque Section, Albuquerque, NM, September 27, 2007.
- Winn, R.C.**, "Mistakes and Deceptions in Aircraft Accident Reconstructions," AIAA Western Region Leadership Meeting, El Segundo, CA, September 16, 2006.
- Winn, R.C.** and Turnquist, D.A., "Accident Reconstruction: Simulation versus Animation," Rocky Mountain Association of Special Investigation Units, Aurora, CO, August 15, 2006.
- Winn, R.C.**, "Mistakes and Deceptions in Aircraft Accident Reconstructions," Aviation Insurance Institute Annual Meeting, Dallas, TX, April 2006.
- Winn, R.C.**, "Analytical Prediction of the Trajectories of Tumbling Objects," SAE AC-9C Conference on Aircraft Icing, Albuquerque, NM, October 2002.
- Morin, C.R., Wojnowski, D.A., **Winn, R.C.**, Wilkinson, J.A., Kenner, M.T., Smith, S.J., and Kenner, A.V., "Miller Park Crane Collapse – Root Cause Investigation," Department of Civil and Environmental Engineering, University of Illinois, Urbana-Champaign, March 2001.
- Winn, R.C.**, "Quality Systems," Presented to the Colorado Springs Police Department, Colorado Springs, CO, January 1998.
- Winn, R.C.**, "Aircraft Accident Investigation," Presented to the Dayton/Cincinnati Section of the AIAA, Dayton, OH, January 1997
- Winn, R. C.**, "Using Radar Data in Aircraft Accident Reconstruction," Invited lecture to USAF Academy course, Aircraft Mishap Investigation, August 1995 and October 1999.
- Winn, R.C.** and Kohlman, D.L., "Using LEWICE as a Design Tool," Presented to NASA Lewis LEWICE Workshop, Cleveland, OH, June 1995.
- Winn, R.C.**, Kohlman, D.L., and Marshall, R.T., "Using LEWICE in the Design of an Add- On Hot Air Anti-Icing System," Presented to SAE Subcommittee AC-9C Aircraft Icing Technology Meeting No. 22, Seattle, WA, April 1995.
- Winn, R.C.**, "Total Quality Management at the University," Presented to the Faculty of the Black Hills State University and the South Dakota School of Mines and Technology, Rapid City, SD, April 1993.
- Winn, R. C.**, "Total Quality Education and Application of TQM to the Educational Process," Presented to the Engineering Faculty of the Catholic University of America, Washington, DC, December 1992.

Winn, R.C., "Course Fullness Analysis," Presented at the Annual Meeting of the Rocky Mountain Section of the ASEE, Colorado Springs, CO, March 1992.

Winn, R.C., "An Introduction to TQM," Presented to the Solar Energy Research Institute, Golden, CO, November 1991.

Winn, R.C., "Educational Theories," Presented to the Faculty-Wide New Instructor Orientation Program, USAF Academy, CO, August 1991.

Winn, R.C., "Cooperative Learning, Basic Principles and Some Applications," Presented to the Department of Mathematics, USAF Academy, CO, August 1991