



**JEAN H. SLANE, Ph.D., P.E.**  
**SENIOR CONSULTANT**

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Dr. Slane is an aeronautical/mechanical engineer and a Senior Consultant for Engineering Systems Inc. (ESi). Prior to joining ESi in 1996, she served in the U.S. Air Force with duties including lead flight control engineer for the Space Shuttle West Coast Launch Project at Vandenberg Air Force Base. She was also a design engineer for the C-17 aircraft at Honeywell Defense Avionics Systems Division. Dr. Slane is an Associate Fellow of the American Institute of Astronautics and Aeronautics (AIAA), where she served as a member of the Modeling and Simulation Technical Committee. Her design work at ESi has included the development of mathematical models for aircraft flight simulators including the Beech 1900D, Lockheed C130J, McDonnell Douglas KC10, Airbus A320 and Cessna 172. Dr. Slane's consulting work has included aircraft accident reconstruction, simulator development for accident investigation, aircraft anti-icing analysis, and analysis of flight data including radar, flight data recorder, and cockpit voice recorder. She developed ESi's industry leading software to reconstruct flight parameters from radar data and has published seven papers on this topic.

**Areas of Specialization**

Aircraft Flight Mechanics, Performance and Simulation  
Aircraft Ice Accretion and Anti-Icing System Analysis  
Aircraft Flight Path Reconstruction  
Flight Data Recorder Analysis  
Cockpit Voice Recorder Sound Analysis  
Modeling of Dynamic Systems  
Aircraft/Spacecraft Stability and Control

**Education**

Ph.D., Aerospace Engineering, University of Colorado, 2010  
M.S., Aeronautical Engineering, Air Force Institute of Technology, 1983  
B.S., Aerospace Engineering, University of Kansas, 1982

**Licensed Professional Engineer (P.E.)**

State of Colorado ..... License No. 33375  
State of Alabama ..... License No. 28112-E

*January 2020*

## **Professional Affiliations/Honors**

**University of Colorado at Colorado Springs, Outstanding PhD Student of the Year, 2010**

**American Institute of Aeronautics and Astronautics (AIAA)**

Associate Fellow

**Modeling and Simulation Technical Committee**

Member, 2005- 2013

Conference and Technical Chair, 2013

**Air Force Institute of Technology, Wright Patterson AFB**

Distinguished Graduate

## **Positions Held**

**Engineering Systems Inc., Colorado Springs, Colorado**

Senior Consultant, 2003 to present

Associate Consultant, 2002 to 2003

Senior Engineer, 1996 to 2001

**School District 11, Colorado Springs, Colorado**

Secondary Math Teacher, 1994 to 1996

**Cibola High School, Albuquerque, New Mexico**

Secondary Math Teacher, August to 1993

**Honeywell Defense Avionics System Division, Albuquerque, New Mexico**

C-17 Flight Control System/Software Engineer, 1988 to 1989

**University of New Mexico, Albuquerque, New Mexico**

Teacher; Electrical Engineering Laboratory, 1987

**United States Air Force, Vandenberg AFB, California**

Lead Flight Control Engineer, 1983 to 1986

**Chapman College, Vandenberg AFB, California**

Teacher; Electronics Engineering, 1985 to 1985

## United States Air Force, Wright Patterson AFB, Ohio

Graduate Student, 1982 to 1983

## Continued Education

Digital Signal Processing, Penn State University, August – December, 2017

Flight Data Analysis Course, Southern California Safety Institute  
November 07-09, 2016, Long Beach, CA

Basic Aircraft Accident Investigation Course, US Department of Transportation, Transportation and Safety Institute, April 26 - May 05, 2011, Oklahoma City, OK

Mishap/Accident Investigation and Management Course, Embry-Riddle Aeronautical University  
June 2004, Prescott, AZ

## Publications

### Papers

Klosinski, K., **Slane, J.**, Osteros, R., Saracino, D., and Jeffery, J., "A New Method of Flight Path Reconstruction Using the j2 Universal Tool-kit" 2016 AIAA Modeling and Simulation Technologies Conference, San Diego, CA, January, 2016.

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.

**Slane, J.H.**, and Tragesser S., "Stability and Control of Tethered Satellite Formations," AIAA/AAS-2012-4658, Minneapolis, MN, August, 2012.

**Slane, J.H.**, and Tragesser S., "Analysis of Periodic Nonautonomous, Inhomogeneous Systems," Nonlinear Dynamics and Systems Theory, An International Journal of Research and Surveys, Vol. 11, November, 2, 2011, ISSN 1562-8353.

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.

**Slane, J.H.**, and Tragesser S., "Stability Analysis for a Nonautonomous, Inhomogeneous System with Application to Tethered Satellite Formations," AIAA-2009-6186, Chicago, IL, August, 2009.

**Slane, J.**, Butler, R., Morris, S., "Using GPS and Accelerometer Data to Reconstruct Aircraft Flight Parameters," AIAA-2008-7032, Honolulu, HI, August, 2008.

- Morris, S., Butler, R., **Slane, J.**, McLaughlin, T., Gamble, C., and Martin, J., "Analysis of a Hoverwing in Ground Effect," AIAA-2008-0431, Reno NV January, 2008.
- Butler, R., Winn, R., 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.
- 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., **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.
- 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 Smoothed ATC Radar Data," International Society of Air Safety Investigators Conference, Boston, MA, August 1999.

## Reports

- Slane, J.H.**, "Analysis of Periodic Nonautonomous, Inhomogeneous Systems," Ph.D. Dissertation, University of Colorado at Colorado Springs, 2010.
- Kohlman, D.L. and **Slane, J.H.**, "Analysis of Ice Accretion on the Embraer ERJ-170 Regional Jet", Embraer-Empresa Brasileira de Aeronautica S/A, Report No. 7815C, November 2, 2000.
- Kohlman, D.L. and **Slane, J.H.**, "Flight Test Results and Simulator Proof of Match for a UC-12B Aircraft," Training Devices, Inc., Engineering Systems Inc. Report No. 4848-1, November 1998.
- Slane, Jean H.**, "Robust Flight Controllers," M.S. Thesis, Air Force Institute of Technology, Wright Patterson AFB, 1983.

## **Presentations**

Klosinski, K., **Slane, J.**, Osteros, R., Saracino, D., and Jeffery, J., "A New Method of Flight Path Reconstruction Using the j2 Universal Tool-kit" 2016 AIAA Modeling and Simulation Technologies Conference, San Diego, CA, January, 2016.

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

**Slane, J.H.**, and Tragesser S., "Stability Analysis for a Nonautonomous, Inhomogeneous System with Application to Tethered Satellite Formations," AIAA-2009-6186, Chicago, IL, August, 2009.

**Slane, J.H.** and Klepacki, D.G. "Animation – Cartoon vs. Engineering Simulation and the Laws of Physics," Embry Riddle Aeronautical University Annual Aviation Law and Insurance Symposium, Orlando, FL, January 2008.

**Slane, J.H.** and Tragesser, S. "Stability of Tethered Satellites Using Floquet Theory for a Non-equilibrium Reference," AAS08-148, Galveston, TX, 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.

**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.

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.