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Professional Experience

- 2005-present Associate Professor, Department of Aerospace Engineering, The Pennsylvania State University
- 2004-present Director of Graduate Studies, Department of Aerospace Engineering, The Pennsylvania State University
- Summer 2002 Member of the Technical Staff, NASA Jet Propulsion Laboratory (ASEE Summer Faculty Fellowship Program)
- 1999-2005 Assistant Professor, Department of Aerospace Engineering, The Pennsylvania State University
- 1998-1999 Deputy Branch Chief, Space Sensing and Vehicle Control Branch, Air Force Research Laboratory
- 1996-1999 Chief, Space Flight Dynamics and Control Group, and Space Debris Research Program Manager, Air Force Research Laboratory
- 1995-1996 Space Debris Research Program Manager and Orbital Dynamics Program Manager, Air Force Phillips Laboratory
- 1994-1995 Deputy Space Debris Research Program Manager and Orbital Dynamics Program Manager, Air Force Phillips Laboratory
- 1990-1994 Air Force Senior Knight Fellow, University of Colorado, Boulder and Aerospace Engineer, Air Force Phillips Laboratory
- 1985-1990 Member of the Technical Staff, Astrodynamics Department, The Aerospace Corporation, Los Angeles, California
- 1983-1985 Graduate Research Assistant, School of Aeronautics and Astronautics, Purdue University, West Lafayette, Indiana

Education

- 1990-1994 Ph.D. in Aerospace Engineering Sciences, University of Colorado, Boulder, Colorado
Dissertation: *An Analytical Solution Method for Near-Optimal, Continuous-Thrust Orbit Transfers*
Dissertation Advisor: Robert D. Culp

- 1983-1985 M.S. in Aeronautics and Astronautics,
Purdue University, West Lafayette, Indiana
Thesis: *The Gravitational Influences of a Fourth Body on Periodic Halo Orbits*
Thesis Advisor: Kathleen C. Howell
- 1979-1983 B.S. in Mechanical Engineering,
University of Kentucky, Lexington, Kentucky

Honors and Awards

- SAE Ralph R. Teetor Educational Award, 2006
Penn State Engineering Society (PSES) Outstanding Teaching Award, 2004
Elected Associate Fellow, AIAA, 1998
USAF Palace Knight Senior Fellow, 1991-1994
Tau Beta Pi, National Engineering Honorary, 1984
Pi Tau Sigma, National Mechanical Engineering Honorary, 1983

Academic and Professional Service Highlights

Service Activities

- Penn State Faculty Senate (Senate Committee on Research), 2005-present
College of Engineering Faculty Council, 2001-2006
Chair, 2004-2005
Vice Chair, 2003-2004
Secretary, 2002-2003
External Advisory Board, Department of Mechanical Engineering, University of Kentucky,
1998-present

Journal Activities

- Associate Editor, *Journal of Spacecraft and Rockets*
Reviewer, *Journal of Guidance, Control, and Dynamics*
Reviewer, *Journal of Spacecraft and Rockets*
Reviewer, *Journal of the Astronautical Sciences*
Reviewer, *IEEE Transactions*

Professional Society Activities and Memberships

- Vice President, Publications, AAS, 2006-present
Chair, AIAA Astrodynamics Technical Committee, 2004-2006
Member, AIAA Astrodynamics Technical Committee, 1995-2001, 2002-present
Member, AAS Spaceflight Mechanics Technical Committee, 1996-2000
Member, AIAA Public Policy Committee, 2002-present
Member, International Academy of Astronautics Subcommittee on Orbital Debris
Associate Fellow, AIAA
Senior Member, AAS
Member, American Society of Engineering Education

Member, American Society of Mechanical Engineers
Member, Society of Automotive Engineers

Symposium Activities

Technical Chair

2004 AIAA/AAS Astrodynamics Specialists Conference
2001 AAS/AIAA Astrodynamics Specialists Conference

General Chair

1997 AAS/AIAA Astrodynamics Specialists Conference

Session Chair

2007 AAS/AIAA Astrodynamics Specialists Conference
2007 AAS/AIAA Spaceflight Mechanics Meeting
2006 AIAA/AAS Astrodynamics Specialists Conference
2006 AAS/AIAA Spaceflight Mechanics Meeting
2005 AIAA/AAS Astrodynamics Specialists Conference
2005 AAS/AIAA Spaceflight Mechanics Meeting
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1999 AAS/AIAA Spaceflight Mechanics Meeting
1998 AAS/AIAA Spaceflight Mechanics Meeting
1996 AAS/AIAA Spaceflight Mechanics Meeting
1995 AAS/AIAA Spaceflight Mechanics Meeting
1994 AIAA/AAS Astrodynamics Specialists Conference

Organizing Committees for several conferences, symposia, and workshops

Academic Instruction

Astrodynamics (AERSP 550) – Spring 2001, 2002, 2003, 2004

Statistical Orbit Determination (AERSP 597C) – Spring 2005, 2007

Orbit and Attitude Control of Spacecraft (AERSP 450) – Fall 2001, 2003-present

Preliminary Spacecraft Design (AERSP 401A) – capstone design, Fall 2001-2004

Detailed Spacecraft Design (AERSP 401B) – capstone design, Spring 2002-2005

Introduction to Astronautics (AERSP 309) – Fall 1999-2002, 2007-present

Dynamics and Control of Aerospace Systems (AERSP 304) – Spring 2000

Aerospace Explorer (AERSP 001S) – First Year Seminar, Fall 2004, Spring 2006/Fall 2006, Spring 2007

Hands-on Space – rocketry project integrated into senior laboratory courses and senior and graduate student independent studies

Graduate and Undergraduate Honors Theses Supervised

Current Students

Ph.D. Students

Student Name	Dissertation Topic
Chris Scott	Dynamical Systems Theory as Applied to Transport of Objects in the Solar System
Young Tae Ahn	Attitude Dynamics and Control of Tethered Spacecraft Systems
Julio Benavides	TBD
Matthew Ferringer	TBD

M.S. Students

Student Name	Thesis Topic
Jung Soo Kim	Numerical Comparison and Calibration of Atmospheric Density Models
Dan Jordan	Trade Space Exploration: Applications to Aerospace Systems
Patrick Williams	Evaluation of Low-Thrust Trajectory Optimization Methods

Former Students

Ph.D. Students

Student Name	Date	Dissertation Title
Hideaki Yamato	8/03	Trajectory Design Methods for Restricted Problems of Three Bodies with Perturbations

M.S. Students

Student Name	Date	Thesis Title
Julio Benavides	5/07	Orbit Insertion into Triangular Libration Points in the Restricted Three-Body Problem
Theodore Stodgell	12/06	Multiobjective Evolutionary Optimization of Satellite Rendezvous Tours
Denise Brown	12/06	Optimal Maneuver Determination for Formation Flying Satellite Constellations
Jeffrey O'Malley	8/06	Formation Flight Control Near a Collinear Libration Point for Interferometric Aperture Plane Modeling
Christopher Bessette	5/06	Optimal Interplanetary Trajectories via Evolutionary Algorithms
Abraham Mathew	8/05	Incorporating Cooperative Learning Activities into Traditional Aerospace Engineering Curricula

Dennis Haeberle	5/05	Investigation of Interplanetary Navigation Using Large Antenna Arrays with Varied Baselines
Ryan Kobrick	5/05	Optimizing Trajectories for Suborbital Human Spaceflight
Chris Scott	5/05	Optimal Bounded Low-Thrust Reconfiguration for Close Proximity Earth Orbiting Satellites
Matthew Feringer	5/05	Satellite Constellation Design Optimization via Multiple-Objective Evolutionary Computation
Matthew Wissler	5/05	An Orbit Stability Analysis Method Applied to Trajectories for the Dawn Spacecraft Near Vesta
Jugo Igarashi	8/04	Optimal Continuous Thrust Orbit Transfers Using Evolutionary Algorithms
Phill-Sun Hur	5/04	Attitude Determination and Control of a Spinning Nanosatellite Using the Geomagnetic Field Data and Sun Sensors
Keith Akins	12/03	Dynamic Atmosphere Modeling for Precision Orbit Determination
Young Tae Ahn	8/02	Optimal Reconfiguration of Formation Flying Satellites
Anthony Faulds	5/02	Satellite Collision Analysis Using Genetic Algorithms, Parallel Processing and Stochastic Methods
Young Ha Kim	5/01	Optimal Rendezvous of Spacecraft Using Genetic Algorithms

***B.S. Honors
Students***

Student Name	Date	Thesis Title
Donald Sampson (Eng. Sci. & Mech.)	12/04	Reconfigurable Control of Dynamical Systems to Compensate for Failure
Josh Geiple	12/03	Orbit Optimization Study for the Mars Microsatellite Atmospheric Research Constellation
Martin Ozimek	12/03	Mars Science Laboratory Abort Entry Study and Abort Guidance Development
Rebecca Thomas	12/03	Analysis of Differential Correction Accuracy in Low-Earth Orbit Satellites
William Chadwick	5/03	Utilization of Martian Moons for Precision Navigation for Mars Missions
David Navara	5/03	Formation Flying Satellite Reconfiguration During Build-up
Chris Scott	5/03	The Effects of Right Ascension on Orbit Lifetime in the Restricted Three Body Problem
Daniel Silianoff	12/02	Error Modeling for Space Debris Analysis
Chris Ranieri	12/01	The Analysis and Modeling of the Deployment of NASA's X-38 Parafoil
Sara Sheffler	12/01	Dynamic Atmospheric Effects on Satellite Orbits

Publications

Journals:

1. Mathew, A., and D.B. Spencer, "Incorporating Cooperative Learning Activities into Traditional Aerospace Engineering Curricula", accepted for publication, *The Journal of Aviation/Aerospace Education and Research*, 2007.
2. Bessette, C.R., and D.B. Spencer, "A Performance Comparison of Stochastic Search Algorithms on the Interplanetary Gravity Assist Trajectory Problem", *Journal of Spacecraft and Rockets*, Vol. 44, No. 3, pp. 722-724, 2007.
3. Kobrick, R.L, and D.B. Spencer, "Optimizing Trajectories for Suborbital Human Spaceflight", *Journal of Spacecraft and Rockets*, Vol. 44, No. 2, pp. 460-463, 2007.
4. Wissler, M.A., D.B. Spencer, and R.G. Melton, "Coast-Arc Orbit Stability During Spiral-Down Trajectories about Irregularly Shaped Body", *Journal of Spacecraft and Rockets*, Vol. 44, No. 1, pp. 254-263, 2007.
5. Scott, C.J., and D.B. Spencer, "Optimal Reconfiguration of Satellites in Formation", *Journal of Spacecraft and Rockets*, Vol. 44, No. 1, pp. 230-239, 2007.
6. Bilén, S.G., C.R. Philbrick, T.F. Wheeler, J.D. Mathews, R.G. Melton, and D.B. Spencer, "An Overview of Space Science and Engineering Education at Penn State", *Aerospace and Electronic Systems Magazine*, IEEE, Vol. 21, Issue 7, pp. S23-S27, 2006.
7. Ferringer, M.P. and D.B. Spencer, "Satellite Constellation Design Trade-offs Using Multiple-Objective Evolutionary Computation", *Journal of Spacecraft and Rockets*, Vol. 43, No. 6, pp. 1404-1411, 2006.
8. Chadwick, W.J. III, D.B. Spencer, and R.G. Melton, "Visibility of Ground Sites for Beacon/Relays on the Martian Moons", *Journal of Spacecraft and Rockets*, Vol. 43, No. 1, pp. 228-230, 2006.
9. Spencer, D.B., R.G. Melton, and S.G. Chianese, "Selecting Projects for a Capstone Spacecraft Design Course from Real World Solicitations", *Journal of Aviation/Aerospace Education and Research*, Vol. 16, No. 1, pp. 27-40, 2006.
10. Igarashi, J. and D.B. Spencer, "Optimal Continuous Thrust Orbit Transfer Using Evolutionary Algorithms," *Journal of Guidance, Control and Dynamics*, Vol. 28, No. 3, pp. 547-549, 2005.
11. Yamato, H., and D.B. Spencer, "Orbit Transfer via Tube Jumping in Planar Restricted Problems of Four Bodies", *Journal of Spacecraft and Rockets*, Vol. 42, No. 2, pp. 321-328, 2005.
12. Yamato, H., and D.B. Spencer, "Trajectory Design for Planar Circular and Elliptical Restricted Three-Body Problems with Perturbation", *Journal of Guidance, Control and Dynamics*, Vol. 27, No. 6, pp. 1035-1045, 2004.
13. Faulds, A.L., and D.B. Spencer, "Satellite Close Approach Filtering Using Genetic Algorithms," *Journal of Spacecraft and Rockets*, Vol 40, No. 2, pp. 248-252, 2003.
14. Kim, Y.H., and D.B. Spencer, "Optimal Orbital Rendezvous Using Genetic Algorithms," *Journal of Spacecraft and Rockets*, Vol 39, No. 6, pp. 859-865, 2002.
15. Herman, A.E., and D.B. Spencer, "Optimal, Low-Thrust Earth-Orbit Transfers Using Higher-Order Collocation Methods", *Journal of Guidance, Control, and Dynamics*, Vol 25, No. 1, pp. 40-47, 2002.

16. Cichan, T., R.G. Melton, and D.B. Spencer, "Control Laws for Minimum Orbital Changes - The Satellite Retrieval Problem", *Journal of Guidance, Control, and Dynamics*, Vol. 24, No. 5, pp. 1231-1233, 2001.
17. Spencer, D.B., K.K. Luu, W.S. Campbell, M.E. Sorge, A.B. Jenkin, "Orbital Debris Hazard Assessment Methodologies for Satellite Constellations", *Journal of Spacecraft and Rockets*, Vol. 38, No. 1, pp. 120-125, 2001.
18. Spencer, D.B., C.B. Hogge, W.S. Campbell, M.E. Sorge, and S.R. McWaters, "Some Technical Issues of an Optically-Focused Small Space Debris Tracking and Cataloguing System", *Space Debris* 2(3): 137-160, 2000.
19. Spencer, D.B., and R.D. Culp, "Designing Continuous-Thrust Low-Earth-Orbit to Geosynchronous-Earth-Orbit Transfers", *Journal of Spacecraft and Rockets*, Vol. 32, No. 6, pp. 1033-1038, 1995.
20. Chobotov, V.A., and D.B. Spencer, "Debris Evolution and Lifetime Following an Orbital Breakup", *Journal of Spacecraft and Rockets*, Vol. 28, No. 6, pp. 670-676, 1991.
21. Howell, K.C., and D.B. Spencer, "Periodic Orbits in the Restricted Four-Body Problem", *Acta Astronautica*, Vol. 13, No. 8, pp. 473-479, 1986.

Conference Proceedings and Presentations:

1. Stodgell, T.R., and D.B. Spencer, "Satellite Rendezvous Tours Using Multiobjective Evolutionary Optimization:", AAS 07-382, AAS/AIAA Astrodynamics Specialists Conference, Mackinac Island, MI, August 2007.
2. Benavides, J.C., and D.B. Spencer, "Sun-Earth Triangular Lagrange Point Orbit Insertion and Satellite Station Keeping", AAS 07-234, AAS/AIAA Space Flight Mechanics Meeting, Sedona, AZ, January 2007.
3. Bessette, C.R., and D.B. Spencer, "Identifying Optimal Interplanetary Trajectories through a Genetic Approach", AIAA 2006-6306, AIAA/AAS Astrodynamics Specialists Conference, Keystone, CO, August 2006.
4. O'Malley, J.R., and D.B. Spencer, "Formation Flight Control for Modeling Interferometric Aperture Planes", AIAA 2006-6017, AIAA/AAS Astrodynamics Specialists Conference, Keystone, CO, August 2006.
5. Bessette, C.R. and D.B. Spencer, "Optimal Space Trajectory Design: A Heuristic-Based Approach", AAS 06-197, AAS/AIAA Space Flight Mechanics Meeting, Tampa, FL, January 2006.
6. Kobrick, R.L. and D.B. Spencer, "Optimizing Trajectories for Suborbital Human Spaceflight", AAS 06-199, AAS/AIAA Space Flight Mechanics Meeting, Tampa, FL, January 2006.
7. Ferringer, M.P., and D.B. Spencer, "Satellite Constellation Design Optimization via Multiple-Objective Evolutionary Computation", AAS 05-280, AAS/AIAA Astrodynamics Specialists Conference, Lake Tahoe, CA, August 2005.
8. Bilén, S.G., C.L. Croskey, R.G. Melton, D.B. Spencer, D.A. Levin, and M.M. Micci, "Students designing and building satellites: Penn State's LionSat and the University Nanosat Program," 2005 ASEE Annual Conference, Portland, Oregon, 13-15 June 2005.
9. Scott, C.J., and D.B. Spencer, "Optimal Bounded Low-Thrust Reconfiguration for Close Proximity Earth Orbiting Satellites," AAS 05-101, AAS/AIAA Space Flight Mechanics Meeting, Copper Mountain, CO, January 2005.

10. Spencer, D.B., and F.A. Acon-Chen, "An Analytical Approach for Continuous-Thrust, LEO-Molniya Transfers," AIAA 2004-5090, AIAA/AAS Astrodynamics Specialists Conference, Providence, RI, August 2004.
11. Igarashi, J., and D.B. Spencer, "Optimal Continuous Thrust Orbit Transfer Using Evolutionary Algorithms," AIAA 2004-5085, AIAA/AAS Astrodynamics Specialists Conference, Providence, RI, August 2004.
12. Haeberle, D.W., D.B. Spencer, and T.A. Ely, "Interplanetary Navigation Using a Distributed Deep Space Network Architecture," AIAA 2004-4744, AIAA/AAS Astrodynamics Specialists Conference, Providence, RI, August 2004.
13. Wissler, M.A., D.B. Spencer, and R.G. Melton, "Low Altitude Orbit Stability of the Dawn Spacecraft Around the Asteroid Vesta," AIAA 2004-4861, AIAA/AAS Astrodynamics Specialists Conference, Providence, RI, August 2004.
14. Hur, Phill-Sun, R.G. Melton, and D.B. Spencer, "Attitude Determination and Control of a Nanosatellite Using the Geomagnetic Field Data and Sun Sensors", AAS 04-144, AAS/AIAA Space Flight Mechanics Meeting, Maui, HI, February 2004.
15. Scott, C.J., and D.B. Spencer, "Coupled Effects of Initial Orbit Plane on Orbit Lifetime in the Three Body Problem", AAS 04-290, AAS/AIAA Space Flight Mechanics Meeting, Maui, HI, February 2004.
16. Chadwick, W.J. III, D.B. Spencer, and R.G. Melton, "Geometric Analysis of Visibility of Mission Support Infrastructure for Phobos and Deimos", AAS 04-135, AAS/AIAA Space Flight Mechanics Meeting, Maui, HI, February 2004.
17. Spencer, D.B., R.G. Melton, and S.G. Chianese, "Selecting Projects for a Capstone Spacecraft Design Course", AAS 03-503, AAS/AIAA Astrodynamics Specialists Conference, Big Sky, MT, August 2003.
18. Akins, K.A., L.M. Healy, and D.B. Spencer, "Localized Atmospheric Density Model Validation Using High Eccentricity Satellite Observations", AAS 03-628, AAS/AIAA Astrodynamics Specialists Conference, Big Sky, MT, August 2003.
19. Yamato, H., and D.B. Spencer, "Numerical Investigation of Perturbation Effects on Orbital Classifications in the Restricted Three-Body Problem", AAS 03-235, AAS/AIAA Space Flight Mechanics Meeting, Ponce Puerto Rico, February 2003
20. Ahn, Y.T., and D.B. Spencer, "Optimal Reconfiguration of a Formation Flying Constellation", IAC-020A.2.07, 53rd International Astronautical Congress, Houston, TX, October 2002.
21. Sheffler, S.E., A.M. Segerman, and D.B. Spencer, "A Comparison of Generated Ephemerides Using SpecialK with Various Atmospheric Models", AIAA 2002-4542, AIAA/AAS Astrodynamics Specialists Conference, Monterey, CA, August 2002.
22. Yamato, H., and D.B. Spencer, "Trajectory Design of Spacecraft Using Invariant Manifolds," ISTS 2002-s-16, International Symposium on Space Technology and Science, Matsue, Japan, May 2002.
23. Faulds, A.L., and D.B. Spencer, "Satellite Collision Analysis Using Genetic Algorithms as a Filter", AAS 02-117, AAS/AIAA Space Flight Mechanics Meeting, San Antonio, TX, January 2002.
24. Spencer, D.B., and Y.H. Kim, "Optimal Orbital Rendezvous Using Genetic Algorithms", AAS 01-477, AAS/AIAA Astrodynamics Specialists Conference, Quebec City, Canada, July-August 2001.

25. Spencer, D.B., and H. Yamato, "Very Long-Term Stability of Extrasolar Planets in Binary Star Systems", American Astronomical Society Division on Dynamical Astronomy, 32nd Annual Meeting, Houston, TX, April 2001.
26. Spencer, D.B., and K.A. Akins, "Uncertainty Assessment for the Breakup of Satellites Due to Hypervelocity Impacts", 3rd European Conference on Space Debris, Darmstadt Germany, March 2001.
27. Cooke, W.J., D.B. Spencer, B.J. Anderson, and R.M. Suggs, "Tether Survivability and Collision Avoidance: Is LEO the Right Place for Tethered Systems", Space Technology and Applications International Forum, Albuquerque, NM, February 2001
28. Cichan, T., R.G. Melton, and D.B. Spencer, "Control Laws for Minimum Orbital Changes - The Satellite Retrieval Problem", AIAA 2000-4430, AIAA/AAS Astrodynamics Specialists Workshop, Denver, CO, August, 2000.
29. Spencer, D.B., C.B. Hogge, W.S. Campbell, M.E. Sorge, and S.R. McWaters, "Orbital Debris and the Environmental Restoration of Space: A Report to the Congressional Defense Committees", presented at the Space Control Conference, M.I.T. Lincoln Laboratory, Lexington, MA, April 2000.
30. Spencer, D.B., K.K. Luu, W.S. Campbell, M.E. Sorge, and A.B. Jenkin, "Orbital Debris Hazard Assessment Methodologies for Satellite Constellations", AAS 00-138, AAS/AIAA Spaceflight Mechanics Conference, Clearwater, FL, January 2000.
31. Herman, A.E., and D.B. Spencer, "Optimal, Low-Thrust LEO to GEO/MEO/HEO Trajectories", AAS 99-408, AAS/AIAA Astrodynamics Conference, Girdwood, AK, August 1999.
32. Herman, A.E., V. Coverstone-Carroll, C.A. Hartman, and D.B. Spencer, "Optimal Spacecraft Trajectories via Higher Order Differential Inclusions", AAS 99-128, AAS/AIAA Space Flight Mechanics Conference, Breckenridge, CO, February 1999.
33. Spencer, D.B., and Luu, K.K., "Overview of the Second European Conference on Space Debris", AAS 97-638, AAS/AIAA Astrodynamics Specialists Conference, Sun Valley, ID, August 1997.
34. Spencer, D.B., and W.S. Campbell, "Space Debris Research in the U.S. Department of Defense", 2nd European Conference on Space Debris, Darmstadt Germany, March 1997.
35. Madler, R.A., Jorgenson, K., Spencer, D.B., and R.D. Culp, "Estimating the Area of Artificial Space Debris", 2nd European Conference on Space Debris, Darmstadt Germany, March 1997.
36. Spencer, D.B., et al, "The Expanding Capabilities of the Debris Analysis Workstation", SPIE 2813-12, SPIE's International Symposium on Optical Science, Engineering, and Instrumentation, session on Characteristics and Consequences of Orbital Debris and Natural Space Impactors, Denver, CO, August 1996.
37. Campbell, W.S., M.E. Sorge, D.B. Spencer, and S.R. Maethner, "Proposed Development of Department of Defense (DOD) Debris Mitigation Guidelines", AAS 96-112, AAS/AIAA Spaceflight Mechanics Meeting, Austin, TX, February 1996.
38. Spencer, D.B., S.R. Maethner, K.W. Yates, and R.A. Madler, "Program DEEP: A Modeling Approach for Estimating the Space Debris Environment and its Effects", 46th IAF Congress, Oslo, Norway, October 1995.
39. Spencer, D.B., and K.K. Luu, "Methodology for Predicting the Space Debris Environment into the Next Millennium", UA12A-08, IUGG Congress, Boulder, CO, July 1995.

40. Sidoran, J.L., C.L. Burns, S.R. Maethner, D.B. Spencer, and H. Bond, "A Case Study on Rapid Systems Prototyping and its Impact on System Evolution", 6th IEEE International Workshop on Rapid System Prototyping, Chapel Hill, NC, June 1995.
41. Spencer, D.B., A.J. Shubert, S.R. Maethner, and K.W. Yates, "The Debris Analysis Workstation: From Concept to Reality", SPIE 2483-10, SPIE's International Symposium on Aerospace/Defense Sensing and Dual-Use Photonics, Session on Space Environmental, Legal, and Safety Issues, Orlando, FL, April 1995.
42. Maethner, S.R., D.B. Spencer, and A.B. Jenkin, "The Space Debris Research Program at the USAF Phillips Laboratory and The Aerospace Corporation", AAS/AIAA Spaceflight Mechanics Conference, Albuquerque, NM, February 1995.
43. Maethner, S.R., D.B. Spencer, and K.W. Yates, "Space Debris Environment and Effects Modeling", AIAA 95-0663, AIAA Aerospace Sciences Meeting, Reno, NV, January 1995.
44. Spencer, D.B., and R.D. Culp, "An Analytical Approach for Continuous-Thrust, LEO-GEO Transfers", AIAA 94-3760-CP, AIAA/AAS Astrodynamics Conference, Scottsdale, AZ, August 1994.
45. Spencer, D.B., and R.D. Culp, "An Analytical Solution Method for Near-Optimal, Continuous-Thrust Orbit Transfers", AAS 93-663, AAS/AIAA Astrodynamics Conference, Victoria B.C., Canada, August 1993.
46. Sorge, M.E., and D.B. Spencer, "The Collision Hazard Posed by the Combined Release and Radiation Effects Spacecraft's Canisters", AIAA-90-2979-CP, AIAA/AAS Astrodynamics Conference, Portland, OR, August 1990.
47. Chobotov, V.A., and D.B. Spencer, "A Review of Orbital Debris Modeling at The Aerospace Corporation", AIAA-90-1356-CP, AIAA/NASA/DOD Orbital Debris Conference, Baltimore, MD, April 1990.
48. Chobotov, V.A., and D.B. Spencer, "Debris Evolution and Lifetime Following an Orbital Breakup", AIAA-90-0085-CP, AIAA Aerospace Sciences Meeting, Reno, NV, January 1990.
49. Spencer, D.B., and B.E. Winn, "GPS Constellation Buildup Plan", AIAA-88-4309-CP, AIAA/AAS Astrodynamics Conference, Minneapolis, MN, August 1988.
50. Spencer, D.B., "The Effects of Eccentricity on the Evolution of an Orbiting Debris Cloud", AAS 87-473, AAS Astrodynamics Conference, Kalispell, MT, August 1987.
51. Howell, K.C., and D.B. Spencer, "Periodic Orbits in the Restricted Four-Body Problem", 36th IAF Congress, Stockholm, Sweden, October 1985.

Reports to Sponsors:

1. Spencer, D.B., Melton, R.G., and Wissler, M.A., "An Orbit Stability Analysis Method Applied to Trajectories for the Dawn Spacecraft Near Vesta," NASA/Jet Propulsion Laboratory, Contract 1248334 MOD 2, June 2005.
2. Spencer, D.B., and Haeberle, D.W., "Interplanetary Navigation Using a Distributed Deep Space Network Architecture", NASA/Jet Propulsion Laboratory, Contract 1246742, February 2005.
3. Spencer, D.B. (Editor), "Orbital Debris and the Environmental Restoration of Space: A Report to the Congressional Defense Committees", AFRL-VS-PS-TR-1998-1024, February 1998.

4. Chobotov, V.A., D.B. Spencer, et al, "Kinetic Energy Weapon (KEW) ASAT Debris Study," The Aerospace Corporation, TOR-0090(5909-02)-1, February 1990.
5. Spencer, D.B., "Space Debris Hazard Software: Programs IMPACT and DEBRIS," The Aerospace Corporation, TOR-0089(4487-04)-1, December 1988.
6. Chobotov, V.A., D.B. Spencer, et al, "Dynamics of Debris Motion and the Collision Hazard Posed to Spacecraft Resulting from an Orbital Breakup," The Aerospace Corporation, SD-TR-88-96, January 1988.
7. Howell, K.C., and D.B. Spencer, "Gravitational Influence of a Fourth Body on Periodic Halo Orbits", National Science Foundation, Contract No. MEA 83-07288, November 1985.

Miscellaneous:

1. "Space Debris" entry in 2007 Edition of the World Book Encyclopedia, World Book Publishing, Chicago, 2007.
2. "Space Modeling and Simulation: Roles and Applications Throughout the System Lifecycle," Larry Rainey, editor, The Aerospace Press, 2004.
 - a. Chapter 12 (Orbital Mechanics and Mission Design),
 - b. Chapter 14 (Orbital Debris)
3. Astrodynamics 2001, Advances in the Astronautical Sciences, Volume 109, Parts I, II & III, co-editor with C.A. Seybold, A. Misra, and R. Lisowski, AAS Publication by Univelt, 2001, 2568 pages.
4. Astrodynamics 1997, Advances in the Astronautical Sciences, Volume 97, Parts I & II, co-editor with F.R. Hoots, B. Kaufman and P.J. Cefola, AAS Publication by Univelt, 1997, 2162 pages.
5. Spencer, D.B., "Book Review: Spaceflight Dynamics, Second Edition", *Journal of Guidance, Control, and Dynamics*, November-December 1997.
6. Spencer, D.B., "Orbital Debris and Space Operations", *Aerospace America*, February 1997, pp. 38-42.
7. Spencer, D.B. "Astrodynamics 1995", *Aerospace America*, December 1995.