University of Illinois
at Urbana-Champaign

Department of Aerospace Engineering
Victoria Coverstone
306 Talbot Laboratory
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College of Engineering
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217 244-0720 (fax)
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December 2, 2015

Associate Dean of the College of Engineering Search Committee,

I write to submit my application for the position of Associate Dean of the College of Engineering at San Diego State University.

Skill, commitment, and vision are required from a successful associate dean, and my experience has prepared me well for this position. Through my holding the position of Associate Dean for Graduate and Professional Programs in the College of Engineering at Illinois for six years, I have demonstrated my ability to lead faculty groups, pull together disparate viewpoints to build a consensus and get things done. I have worked successfully with top campus administrators. The Associate Dean of Graduate and Professional Programs office oversees all graduate education programs in the college of engineering, including online courses and extramural programs, diversity programs, professional degree programs and other issues affecting the 2700 graduate students in the College of Engineering. Prior to becoming Associate Dean in the college, I was Associate Head of the Aerospace Engineering Department at Illinois. I was appointed to participate in a very selective academic leadership program that is organized by the Committee on Institutional Cooperation, which is the academic organization of the Big Ten-plus consortium of universities. For twelve years, I served as the campus program director for the Aerospace Illinois Space Grant Consortium. My latest accomplishment in these various leadership roles at Illinois include the recent development and approval of a college-wide M.Eng degree to respond to the national need for more interdisciplinary and systems-level training of engineers. I have experience in all aspects of staff development, from creating new positions to setting salaries.

I am an AIAA fellow and former Chair of the Council of Institution for the Universities Space Research Association which has 105 member institutions and forms the largest and most technically diverse university association serving the space research community. Being the chair is a unique honor and a position of responsibility and influence in the university space community. I have been called as a witness by the Strategic Forces Subcommittee of the House Armed Services Committee, giving testimony on the topic of space professionals.

I am a co-founder of a small aerospace company, CU Aerospace. CU Aerospace has 16-years of experience with operations as a government Prime Contractor and is engaged in identifying and developing promising new aerospace technologies with the ultimate goal being commercialization and distribution of those technologies.

I have a passionate commitment to students and an equally passionate commitment to research and teaching in the engineering field. The position of Associate Dean at San Diego State University is attractive to me because it offers a place that I can put my passions to work, and an opportunity to make an impact. I am energized by the possibilities that exist.

I feel that nearly every professional experience I have had – whether teaching, advising, research, administration, campus leadership, working in a large aerospace company and starting up a small aerospace company – has prepared me for this position. In each of these areas, I have tried to achieve excellence. I would strive to bring that same level of excellence to the role of Associate Dean. I hope to have the opportunity to discuss the position further with you, and with the search committee. I appreciate your consideration.

Sincerely,

Victoria Coverstone

COLLEGE OF ENGINEERING BIOGRAPHICAL DATA
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Department (% appointment) Aerospace Engr. (100%)

Date November 2015

1. Name Coverstone Victoria L. Date of Birth Feb. 5, 1963
(last) (first) (middle)
Citizenship USA

2. Present Academic Rank Professor

3. Tenure Status *(as listed in the budget)* A

4. Administrative Title *(if any now held)* Associate Dean of Graduate and Professional Programs

List the following information, starting with the most recent date. *(attach additional pages, as needed)*

5. Degrees *(field, institution, year awarded)*

B.S.	Aeronautical & Astronautical Engineering	University of Illinois at Urbana-Champaign	1985
M.S.	Aeronautical & Astronautical Engineering	University of Illinois at Urbana-Champaign	1986
Ph.D.	Aeronautical & Astronautical Engineering	University of Illinois at Urbana-Champaign	1992

6. Academic Positions at U of I and elsewhere *(rank, institution, inclusive dates) (show % if you hold multiple appointments)*

Research Assistant, Aeronautical & Astronautical Engineering, University of Illinois	1985-1986
Teaching Assistant, Aeronautical & Astronautical Engineering, University of Illinois	1988-1991
Assistant Professor, Aeronautical & Astronautical Engineering,	1992-1998

University of Illinois

Associate Professor, Aeronautical & Astronautical Engineering, University of Illinois	1998-2005
Professor, Aerospace Engineering, University of Illinois	2005-present
Associate Head, Aerospace Engineering, University of Illinois	2006-2008
Professor, Information Trust Institute, University of Illinois, 0% time	2007-present
Interim Associate Dean of Graduate and Professional Programs University of Illinois, 50% time	2008
Associate Dean of Graduate and Professional Programs University of Illinois, 49% time	2008-2013

7. a. Other Professional Employment *(title, organization, location, inclusive dates)*

Member of the Technical Staff/Mission and System Engineer,
TRW Space and Technology Group at Redondo Beach, CA 1987-1988

b. Major Consulting Activities *(past five years) (list organization and location)*

Abrams, Teller, and Madson, Inc., Chicago, IL.	1996
CU Aerospace, Urbana, IL.	1999-present
TRW, Redondo Beach, CA.	2001
Spectrum Astro Inc., Gilbert, AZ	2001
Jet Propulsion Laboratory, Pasadena, CA	2004
KinetX, Inc., Tempe, AZ	2007

c. Professional Registrations *(field, location, date)*

8. Honors, Recognition and Outstanding Achievements (*list year*)

a. Teaching/Advising

Everitt Award for Teaching Excellence, College of Engineering, 1995

Teacher of the Year, AAE Department, AIAA Student Branch, 1995, 1997, 2001

An Incomplete List of Teachers Ranked as Excellent by Their Students, Fall 1994, Spring 1995, Fall 1995, Spring 1996, Fall 1996, Spring 1997, Spring 1998, Spring 2000, Fall 2000, Spring 2005

College of Engineering Teaching Excellence Award, 2001

College of Engineering Stanley H. Pierce Award, 2008

Campus Award for Excellence in Undergraduate Teaching, Honorable Mention, 2001

College of Engineering Award for Excellence in Advising, 1993, 1994, 1996, 1997,1999, 2003, 2006, 2007, 2008, 2009, 2011,2012

Faculty advisor; First place winner, 1994/95 AIAA/LORAL National Undergraduate Team Space Design Competition

Faculty advisor; First place winner, 1999/2000 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; First place winner, 2000/2001 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; First place winner, 2002/2003 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; First place winner, 2003/2004 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Third place winner, 2004/2005 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Second place winner, 2005/2006 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Third place winner, 2006/2007 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; First place winner, 2007/2008 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Third place winner, 2009/2010 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Finalist, 2014, NASA RASC-AL National Undergraduate Team Competition, Cocoa Beach, FL.

Faculty advisor; Finalist, 2015, NASA RASC-AL National Undergraduate Team Competition, Cocoa Beach, FL.

b. Research

NASA/ASEE Summer Faculty Fellowship
Jet Propulsion Laboratory 1993

National Academy of Engineering Symposium on Frontiers of Engineering
Academies' Beckman Center in Irvine, CA 2002

National Academy of Engineering Gallery of Women Engineers Website
http://www.engineergirl.org 2002

National Academy of Engineering Seventh German-American Frontiers of Engineering Symposium
Academies' NAS Building, Washington, DC 2004

Department of Navy Best Paper Award
37th Annual Alan Berman Research Publications Award 2004

National Academy of Engineering Organizing Committee/
Session Chair for the German-American Frontiers of Engineering Symposium
Alexander von Humboldt Foundation in Germany 2005

NASA Space Act Award for technical innovation "Ultra-Large Solar Sail Technology" (MFS-32524-1) 2008

NSF Women's International Research Engineering Summit, Barcelona Spain 2009

2010 UK-US Collaboration Development Award Programme, Glasgow Scotland 2010

Visiting Investigators Partnership at the Marshall Space Flight Center, Huntsville, AL 2012-2013

Fellow, AIAA 2013-present

NASA NIAC fellow 2015-2016

NASA Summer Faculty Fellowship
Marshall Space Flight Center 2015

c. Public Service

Finalist, NASA Astronaut/Mission Specialist 1994

Witness, Strategic Forces Subcommittee of the House Armed Services Committee, Testimony on Space Professionals 2004

AIAA GNC/AFM/MST/ASC/ASE Joint Conference General Chair, Toronto Canada 2010

Vice-Chair of the Council of Institutions (COI), University Space Research Association (USRA) National Organization 2011-2012

Chair of the Council of Institutions (COI), University Space Research Association (USRA) National Organization 2012-2014

FACTUAL INFORMATION

A. Resident Instruction and Continuing Education (past ten years)

1. Resident Instruction *(verify the information on the appended page for sections in which you had primary responsibility; pencil in corrections)*

2. Continuing Education *(credit courses only)*
3. Other Instructional Activities *(prelim and final exams, course development, short courses, etc.)*

Preliminary/Final Committee Chair/Director for Kangsik Lee (AAE)
Preliminary/Final Committee member for Ashok Gopalarathnam (Prof. Selig)
Preliminary/Final Committee member for Gregory Toussaint (Prof. Basar)
Preliminary/Final Committee member for Kazuhiro Horie (Prof. Conway)
Preliminary/Final Committee member for Prasun Desai (Prof. Conway)
Preliminary/Final Committee member for Suzanna Sandrik (Prof. Prussing)
Preliminary/Final Committee member for Bradley Wall (Prof. Conway)
Preliminary/Final Committee Chair/Director for Aaron Trask (AAE)
Preliminary/Final Committee Chair/Director for William Todd Cerven (AAE)
Preliminary/Final Committee Chair/Director for Byoungsam Woo (AE)
Preliminary/Final Committee Chair/Director for John William Hartman (AE)
Preliminary/Final Committee Chair/Director for Jennifer Hargens Rysanek (AE)
Preliminary/Final Committee member for Christian Chilan (AE)
Preliminary/Final Committee member for Purvesh Thakker (ECE)
Preliminary /Final Committee Chair/Director for Andy Pukniel (AE)
Preliminary Committee Chair/Director for Brian Jamison (AE)
Preliminary Committee Chair/Director for Alex Ghosh (AE)
Preliminary Committee Chair for John Westerhoff (AE)
Final Committee member for Scot Campbell (AE)
Developed new course AAE 201, Principles of Aerospace Systems

Developed new course AAE 350, Spacecraft Attitude Dynamics and Control (taught as AAE 391)
Developed senior spacecraft design courses, AE 440/441, Aerospace Vehicle Design.
Developed freshman design courses, AAE 100 SD and HAB, Spacecraft Design and High Altitude Ballooning

4. Undergraduate Advising, current year only

a) academic advising _20__ *(number of students)*

b) student organizations *(list)*

1994 AIAA Region III Student Paper Competition, Cleveland, OH, supervised undergraduate student in writing paper, "Optimal Low-Thrust Power-Limited Orbit Transfers With Path Constraints in a Linearized Gravity Field."

AIAA Student Branch Faculty Advisor, 1996-1997, 2001-present

1996 AIAA Region III Student Paper Competition, Purdue, IN, Faculty Advisor, Third Place Winner, "Control of an Underactuated Two-Link Manipulator."

c) design teams *(past five years)*

Faculty co-advisor, University of Illinois Cubesat, (ION2, Illinois Orbiting Nanosat), College of Engineering, 2006-present.

Faculty co-advisor, University of Illinois Cubesat, (ION, Illinois Orbiting Nanosat), College of Engineering, 2001-2006.

Faculty advisor; First place winner, 2002/2003 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; First place winner, 2003/2004 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Third place winner, 2004/2005 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Third place winner, 2004/2005 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Second place winner, 2005/2006 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Third place winner, 2006/2007 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; First place winner, 2007/2008 AIAA National Undergraduate Team Space Design Competition

Faculty advisor; Third place winner, 2009/2010 AIAA National

Undergraduate Team Space Design Competition

Faculty advisor; Finalist, 2014, NASA RASC-AL National Undergraduate Team Competition, Cocoa Beach, FL.

Faculty advisor; Finalist, 2015, NASA RASC-AL National Undergraduate Team Competition, Cocoa Beach, FL.

d) other *(individual projects, engineering open house, etc,.)*

Undergraduate Research Projects:

Launch Vehicle Assessment	1993-1994
Optimal Power-Limited Transfers Around Obstacles,	1993-1994
Optimal Characteristic Velocity for Low Thrust Interplanetary Missions	1993-1994
Spacecraft Database Development	1994
Automated Spacecraft Docking	1994-1995
Software/Hardware Development to Control an Underactuated Three-Link Robot	1995-1996
User Interface to Create an Input File For a Spacecraft Mission Planning Tool	1995-1996
Spacecraft Mission Planning Animation With Matlab	1995-1996
Mining Asteroids; A Feasiblity Study	1995
Simulation of an Underactuated Spacecraft using Mathematica	1995
Optimization Via Dynamic Hill Climbing	1996-1997
Trajectory Optimization Using Genetic Programming	1996-1997
Trajectory Optimization Using Parallel Recombinative Simulated Annealing	1997-1999
Design of Missions to Lagrangian Points Via SWINGBY	2000-2001
Matlab for Spacecraft Attitude Determination	2007
SROP Student	2014

B. Research, Creative, and Other Scholarly Activities

1. List publications in print or accepted, with authors' names ordered the way they appear on the publications. Provide inclusive page numbers for papers in proceedings and journals. Follow the outline given below for the organization of the list of publications. Within each category place items in chronological order.

   Place a single asterisk(*) before any publication which has undergone stringent editorial review by peers. Place a double asterisk(**) before any publication which was invited and carries with it prestige and recognition. Place an s before any publication based on your work as a student. Place a w before any publication co-authored with students you supervise. Indicate by ! up to five publications that you consider to represent your most important contribution of the past decade.

   a_1. Books Authored or Co-Authored, Original Editions

   a_2. Books Authored or Co-Authored, Revisions

   b_1. Books Edited or Co-Edited, Original Editions

   b_2. Books Edited or Co-Edited, Revisions

c. Chapters in Books

P.Thakker, D. Ames, L. Arber, M. Dabrowski, A. Dufrene, A. Pukniel, A. Rein, V. Coverstone, and G. Swenson, "Overview of ION as applied to atmospheric research and technology testing problems," in *Emergence of Pico- and Nanosatellites for Atmospheric Research and Technology Testing*, Progress in Astronautics and Aeronautics, pp.329-375, 2010.

d. Monographs [longer than an article, but shorter than a book]

e_1. Articles in Journals

s *Coverstone-Carroll, V., and Prussing, J.E.,"Optimal Cooperative Power-Limited Rendezvous Between Neighboring Circular Orbits," *Journal of Guidance, Control, and Dynamics*, Vol. 16, No. 6, Nov.-Dec. 1993, pp. 1045-1054.

s *Coverstone-Carroll, V., and Prussing, J.E.,"Optimal Cooperative Power-Limited Rendezvous Between Coplanar Circular Orbits," *Journal of Guidance, Control, and Dynamics ,* Sept.-Oct. 1994, pp. 1096-1102.

*Coverstone-Carroll, V., and S. N. Williams, "Optimal Low Thrust Trajectories Using Differential Inclusion Concepts," *The Journal of the Astronautical Sciences*, Vol. 42, No. 4, Oct-Dec. 1994, pp. 379-393.

*Taur, D.-R., Coverstone-Carroll, V., and J. E. Prussing, "Optimal Impulsive Time-Fixed Orbital Rendezvous and Interception with Path Constraints", *Journal of Guidance, Control, and Dynamics*, Vol. 18, No. 1, Jan.-Feb. 1995, pp. 54-60.

s *Coverstone-Carroll, V., and J. E. Prussing, "Optimal Cooperative Power-Limited Rendezvous with Propellant Constraints," *The Journal of the Astronautical Sciences*, Vol. 43, No. 3, July-September, 1995, pp. 289-305.

w!*Coverstone-Carroll, V., and N. M. Wilkey, "Optimal Control of a Satellite-Robot System Using Direct Collocation with Nonlinear Programming," *Acta Astronautica,* Vol. 36, No. 3, 1995, pp. 149-162.

*Selig, M.S. and Coverstone-Carroll, V., "Genetic Algorithms with a Novel Constraint Technique Applied to Wind Turbine Design," *ASME Journal of Energy Resources Technology*, Vol. 118, March, 1996, pp. 22-28.

*Coverstone-Carroll, V.,"Detumbling and Reorienting an Underactuated Rigid Spacecraft", *Journal of Guidance, Control, and Dynamics*, Vol. 19, No. 3, 1996, pp. 708-710.

w*Rauwolf, G., and V. Coverstone-Carroll, "Low-Thrust Orbit Transfers Generated by a Genetic Algorithm," *Journal of Spacecraft and Rockets*, Vol.33, No. 6, November-December, 1996, pp. 859-862.

*Coverstone-Carroll, V.,"Near-Optimal Low-Thrust Trajectories Via Micro-Genetic Algorithms", *Journal of Guidance, Control, and Dynamics*, Vol. 20, No. 1, 1997, pp. 196-198.

w*Lee, K., S. Coates, and V. Coverstone-Carroll, "Variable Structure Control Applied to Underactuated Robots," *Robotica*, Vol. 15, Part 3, May 1997, pp. 313-318.

*Williams, S., and V. Coverstone-Carroll, "Benefits of Solar Electric Propulsion for the Next Generation of Planetary Exploration Missions," *The Journal of the Astronautical Sciences*, Vol. 45, No. 2, April-June, 1997, pp. 143-159.

*Prussing, J.E., and Coverstone-Carroll, V., "Constant Radial Thrust Acceleration Redux", *Journal of Guidance, Control, and Dynamics*, Vol. 21, No. 3, 1998, pp. 516-518.

w*Lee, K., and Coverstone-Carroll, V., "Control Algorithms to Stabilize Underactuated Robots", *Journal of Robotic Systems*, Vol. 15, No. 12, 1998, pp.681-697.

w!*Hartmann, J.W, Coverstone-Carroll, V., and Williams, S. N., "Optimal Spacecraft Interplanetary Trajectories via a Pareto Genetic Algorithm", *The Journal of the Astronautical Sciences*, Vol. 46, No. 3, 1998, pp. 267-282.

!*Williams, S., and V. Coverstone-Carroll, "Mars Missions Using Solar Electric Propulsion," *The Journal of Spacecraft and Rockets*, Vol. 37, No. 1, 2000, pp.71-77.

w**Coverstone-Carroll, V., Hartmann, J.W., and Mason, W. M., "Optimal Multi-Objective Low-Thrust Spacecraft Trajectories", *Computer Methods in Applied Mechanics and Engineering*, 186, 2000, pp.387-402.

w!*Cerven, W. T. and Coverstone-Carroll, V., "Optimal Reorientation of a Multibody Spacecraft through Joint Motion Using Averaging Theory",*The Journal of Guidance, Control, and Dynamics*, Vol. 24, No. 4, 2001, pp. 788-795.

w*Powers, B., and Coverstone-Carroll, V. "Optimal Solar Sail Orbit Transfers to Synchronous Orbits", *The Journal of The Astronautical Sciences*, Vol. 49, Issue #2, 2001, pp. 269-281.

!*Coverstone-Carroll, V. and Prussing, J.E., "A Technique for Earth Escape Using a Solar Sail", *The Journal of Guidance, Control, and Dynamics*. Vol. 26, No. 4, 2003, pp. 628-634.

w*Woo, B. and Coverstone V.,"Orbit Transfers to Lower Altitude Orbits Using Aerobraking", *The Journal of Astronautical Sciences*, Vol. 51, Issue #3, 2003, pp. 307-317.

w*Trask, A., Mason, W. and Coverstone, V., "Optimal Interplanetary Trajectories Utilizing Constant Radial Thrust and Gravitational Assists", *The Journal of Guidance, Control and Dynamics*. Vol. 27, No. 3, 2004, pp.503-506.

w*Cerven, W., Bullo, F. and Coverstone, V., "Vehicle Motion Planning with Time-Varying Constraints", *Journal of Guidance, Control and Dynamics*, Vol. 27, No. 3, 2004, pp.506-509.

w*Trask, A. and Coverstone, V., "Optimal Low Thrust Trajectories Combined with an Aeroassist Maneuver", *The Journal of Spacecraft and Rockets*, Vol. 41, No. 4, 2004, pp.629-634.

w* Woo, B., Coverstone, V.,Hartmann, J. and Cupples, M."Trajectory and System Analysis For Outer-Planet Solar-Electric Propulsion Missions", *The Journal of Spacecraft and Rockets*, Vol. 42, No. 3, 2005, pp. 510-516.

Woo, B., Coverstone, V. and Cupples, M., "Low-Thrust Trajectory Optimization Procedure for Gravity-Assist, Outer-Planet Missions",*Journal of Spacecraft and Rockets*, Vol. 43, No. 1, 2006, pp.121-129.

Donahue, B., Green, S. and Coverstone, V., "Chemical and Solar-Electric Propulsion Systems For Mars Sample Return Missions",*Journal of Spacecraft and Rockets,* Vol.43, No. 1, 2006, pp.170-177.

Cupples, M., Green, S., and Coverstone, V."Solar Electric and Chemical Propulsion For a Titan Mission",*Journal of Spacecraft and Rockets,* Vol.43, No. 5, 2006, pp.1077-1083.

Woo, B., Coverstone, V. and Cupples, M., "Application of Solar Electric Propulsion to a Comet Surface Sample Return Mission", *Journal of Spacecraft and Rockets*, Vol. 43, No. 6, 2006, pp. 1225-1230.

Botter, T., Coverstone, V., and Burton, R., "Structural Dynamics of Spin-Stabilized Solar Sails with Applications to UltraSail",*Journal of Guidance, Control and Dynamics,* Vol. 31, No. 2, 2008, pp. 402-413.

Jackson, K., and Coverstone, V., "Optimal Trajectories From The Moon To Sun/Earth-Moon L1 Point With Ballistic Launch", *Journal of Guidance, Control and Dynamics,* Vol. 31, No. 3, 2008, pp. 712-719.

Jamison, B., and Coverstone, V., "Improved Orbit Transfer Switching Function Analysis By An Extended Frequency Study", *Journal of Guidance, Control and Dynamics,* Vol. 33, No. 1, 2010, pp.235-245.

Kang, J., and Coverstone, V., "Analytical Model for Momentum Transfer of Spacecraft Containing Liquid," *Journal of Guidance, Control and Dynamics,* Vol. 33, No. 3, 2010, pp. 991-994.

Pukniel, A., Coverstone, V., Burton, R., and Carroll, D., "The Dynamics and Control of the CubeSail mission: A solar Sailing demonstration", *Advances in Space Research*, Vol. 48, Issue 11, 2011, pp. 1902-1911.

Woo, B., Ertmer, K., Coverstone, V.,Burton, R., Benavides, G., and Carroll, D., "Deployment Experiment for Ultralarge Solar Sail System (UltraSail)", *Journal of Spacecraft and Rockets*, Vol. 48, No. 5, 2011, pp. 874-880.

Ghosh, A., and Coverstone, V., "Optimal Cooperative CubeSat Maneuvers Obtained Through Parallel Computing", *Acta Astronautica,* Vol. 107, February–March, 2015, pp 130–149.

e_2. Articles in Conference Proceedings

Taur, D-R, Prussing, J. E., and Coverstone-Carroll, V., "Optimal Impulsive Time-Fixed Orbital Rendezvous and Interception with Path Constraints," Preprint AIAA 90-2972, *AIAA/AAS Astrodynamics Conference*, Portland, OR, pp. 899-906.

Coverstone-Carroll, V. and Prussing, J. E., "Optimal Cooperative Power-Limited Rendezvous," Paper No. AAS 91-444, *AAS/AIAA Astrodynamics Conference,* Durango, CO, August 1991; also in *Advances in the Astronautical Sciences*, Vol. 76, Part III, pp. 1989-2009, Eds. B. Kaufman et al., AAS Publications Office, San Diego, CA.

Coverstone-Carroll, V. and Prussing, J. E., "Optimal Cooperative Power-Limited Rendezvous With Propellant Constraints," Paper No. AAS 92-4508, Proceedings of the 1992 *AAS/AIAA Astrodynamics Conference,* Hilton Head, SC, August 1992, pp. 246-255.

Coverstone-Carroll, V. and Williams, S.N., "Optimal Low Thrust Trajectories Using Differential Inclusion Concepts", Paper No. AAS 94-173 *AIAA /AAS Space Flight Mechanics Meeting ,* Cocoa Beach, FL, February 1994; also in *Advances in the Astronautical Sciences*, Volume 87, Eds. J. E. Cochran, Jr.,AAS Publications Office, San Diego, CA.

Selig, M.S. and Coverstone-Carroll, V., "Genetic Algorithms with a Novel Constraint Technique Applied to Wind Turbine Design," 14th ASME Wind Energy Symposium, Houston, TX, Jan.-Feb., 1995.

Coverstone-Carroll, V.,"Detumbling and Reorienting an Underactuated Rigid Spacecraft", Paper No. AAS 95-413 *AAS/AIAA Astrodynamics Conference*, August 14-17, 1995, Halifax, Nova Scotia, Canada; also in *Advances in the Astronautical Sciences*, , Volume 90, Part I, pp. 1001-1015, Eds. K. Terry Alfriend, et.al., AAS Publications Office, San Diego, CA.

Biggs, M. and Coverstone-Carroll, V., "Low Cost Launch System For Competitive Near-Term Return on Investment: Preliminary Results," Space Technology and Applications International Forum, Albuquerque, NM, January, 1996; also in American Institute of Physics Conference Proceedings #361, Part Two, Woodbury, New York, pp.589 - 600.

Rauwolf, G., and V. Coverstone-Carroll, "Near-Optimal Low-Thrust Orbit Transfers Generated by a Genetic Algorithm," SECTAM XVIII Developments in Theoretical and Applied Mechanics Conference, Tuscaloosa, AL, April 14-16, 1996; also in Developments in Theoretical and Applied Mechanics, Vol. XVIII, The University of Alabama, Tuscaloosa, pp. 431-442.

Deal, S., and V. Coverstone-Carroll, "A Low-Cost Wireless Power Transmission Experiment," AIAA/USU Conference on Small Satellites, Logan, Utah, Sept. 16-19, 1996.

Deal, S., and V. Coverstone-Carroll, "A Simplified Use of Quality Function Deployment as a System Tool for Designing-to-Cost," AIAA/USU Conference on Small Satellites, Logan, Utah, Sept. 16-19, 1996.

Hartmann, J.W, Coverstone-Carroll, V., and Williams, S. N.. "Generation of Optimal Spacecraft Trajectories via a Pareto Genetic Algorithm", Paper No. AAS 98-202, *8th AAS/AIAA Space Flight Mechanics Meeting,* Monterey, CA, February 1998.

Mason, W., Coverstone-Carroll, V., and Hartmann, J.W., "Optimal Earth Orbiting Satellite Constellations Via A Pareto Genetic Algorithm", Paper No. 98-4381 AIAA/AAS Astrodynamics Specialist Conference*,* Boston, MA, August 1998.

Prussing, J.E. and Coverstone-Carroll, V., "Constant Radial Thrust Acceleration Redux ", Paper No. 98-4545 AIAA/AAS Astrodynamics Specialist Conference*,* Boston, MA, August 1998.

Coverstone-Carroll, V., Hartman, C., Herman, A. and Spencer, D., "Optimal Spacecraft Trajectories Via Higher Order Differential Inclusion", Paper No. AAS 99-128, 9th AAS/AIAA Spaceflight Mechanics Conference, Breckenridge, CO. February 1999.

Powers, B., Coverstone-Carroll, V. and Prussing, J.E., "Solar Sail Optimal Orbit Transfers to Synchronous Stable Orbits", Paper No. AAS 99-334, AAS/AIAA Astrodynamics Specialist Conference, Girdwood, Alaska, August 1999.

Coverstone-Carroll, V. and Prussing, J.E., "A Technique for Earth Escape Using a Solar Sail", Paper No. AAS 99-333, AAS/AIAA Astrodynamics Specialist Conference, Girdwood, Alaska, August, 1999.

Cerven, W. T. and Coverstone-Carroll, V., "Optimal Reorientation of a Multibody Spacecraft through Joint Motion Using Averaging Theory", Paper No. AAS 00-203, AAS/AIAA Spaceflight Mechanics Meeting, Clearwater, Florida, January, 2000.

Lakso, J. and Coverstone-Carroll, V., "Optimal Tether Deployment/Retrieval Trajectories Using Direct Collocation", Paper No. AIAA 2000-4349, AIAA /AAS Astrodynamics Specialist Conference, Denver, CO, August, 2000.

Trask, A. and Coverstone, V., "Optimal Low Thrust Trajectories Combined with an Aeroassist Maneuver About Mars", Paper No. AAS 01-212,

AAS/AIAA Space Flight Mechanics Meeting, Santa Barbara, CA, February, 2001.

Woo, B. and Coverstone, V.,"Orbit Transfers to Lower Altitude Orbits Using Aerobraking", Paper No. AAS 02-113, AAS/AIAA Space Flight Mechanics Conference, San Antonio, TX, Jan, 2002.

Hargens, J. and Coverstone, V., "Low-Thrust Interplanetary Mission Design Using Differential Inclusion", Paper No. AIAA-2002-4730, AIAA/AAS Astrodynamics Specialist Conference, Monterey, CA, Aug, 2002.

Trask, A., Mason, W. and Coverstone, V.,"Optimal Interplanetary Trajectories Utilizing Constant Radial Thrust and Gravitational Assists", Paper No. AIAA-2002-4731, AIAA/AAS Astrodynamics Specialist Conference, Monterey, CA, Aug, 2002.

George, J., Hoffman, S., Rachocki, K., Edgett, L., Dow, S., Herman, A and Coverstone, V., "A Near-Term Mars Sample Return Spacecraft Design Utilizing Solar Electric Propulsion", Paper No. IAC-02-Q.3.3.05, 53rd International Astronautical Congress, The World Space Congress – 2002, Houston, TX, Oct., 2002.

Woo, B., Coverstone, V., Hartmann, J. and Cupples, M., "Factors Influencing Solar Electric Propulsion Vehicle Payload Delivery For Outer Planet Missions", Paper No. AAS-2003-242, AAS/AIAA Space Flight Mechanics Meeting, Ponce, Puerto Rico, February, 2003.

Cupples, M., Green, S. and Coverstone, V.,"Systems Analysis for Outer Planet Mission Using Solar-Electric Ion Propulsion", Paper No. AAS-2003-123, AAS/AIAA Space Flight Mechanics Meeting, Ponce, Puerto Rico, February, 2003.

Trask, A. and Coverstone, V., "Autonomous Artificial Neural Network Star Tracker for Spacecraft Attitude Determination", Paper No. AAS-2003-192, AAS/AIAA Space Flight Mechanics Meeting, Ponce, Puerto Rico, February, 2003.

Cupples, M., Green, S., Donahue, B., and Coverstone, V.,"Solar Electric and Chemical Propulsion for a Titan Mission", 39th Joint Propulsion Conference, AIAA 2003-4728, Huntsville, Alabama, July, 2003.

Hartmann, J., Coverstone, V. and Prussing, J., "Optimal Counter-Intuitive Solar Sail Escape Trajectories", Paper No. AAS 04-279, AAS/AIAA Space Flight Mechanics Meeting, Maui, Hawaii, February, 2004.

Cupples, M., Coverstone, V. and Woo, B.. "Application of Solar Electric Propulsion to a Comet Surface Sample Return Mission", Paper No. AIAA-2004-3804, 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Fort Lauderdale, FL, July 2004.

Donahue, B., Green, S., Coverstone, V., and Woo, B., "Chemical and Solar Electric Propulsion Systems Analyses for Mars Sample Return Missions", Paper

No. AIAA-2004-3807, 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Fort Lauderdale, FL, July 2004.

Woo, B., Coverstone, V., Hartmann, J. and Cupples, M., "Effects of Gravity-Assist Timing on Outer-Planet Missions Using Solar Electric Propulsion", Paper No. AIAA-2004-5397, AIAA/AAS Astrodynamics Specialist Conference, Providence, RI, Aug, 2004.

Cupples, M., Green, S., Coverstone, V. and Hartmann, J.,"Solar Electric Propulsion System Sensitivity to Thruster Isp Variation", Paper No. AIAA-2004-xxxx, AIAA/AAS Astrodynamics Specialist Conference, Providence, RI, Aug. 2004.

Burton, R. L., Coverstone, V. L., Hargens-Rysanek, J., Ertmer, K. M., Botter, T., Benavides, G., Woo, B., Carroll, D. L., Gierow, P., Farmer, G., and Cardin, J., "UltraSail, Ultra-Lightweight Solar Sail Concept," AIAA No. 2005-4117, 2005.

Dachwald, B., Baturkin, V., Coverstone, V., et al., "Potential Effects of Optical Solar Sail Degradation on Trajectory Design", Paper No. AAS 05-413, AAS/AIAA Astrodynamics Specialists Conference, Lake Tahoe, CA, Aug. 2005.

Botter, T., Coverstone, V., and Burton, R., "Structural Dynamics of a Spin-Stabilized, Mast-free SolarSail Design",Paper No. AAS 06-224, AAS/AIAA Space Flight Mechanics Meeting, Tampa, FL, January 2006.

Jackson, K., and Coverstone, V., "Optimal Trajectories From The Moon To Sun/Earth-Moon L1 Point With Ballistic Launch",Paper No. AAS 07-231, AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007.

Hargens-Rysanek, J., Coverstone, V. and Burton, R., "Orbital Precession Via Cyclic Pitch For The UltraSail System",Paper No. AAS 07-166, AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007.

Swenson, G., Thakker, P., Kamalabadi, F., Frank, M. , Coverstone, V and H. Voss, "Optical sensing atmospheric emissions from Cubesats and Nanosats", in SPIE Sensors and Systems for Space Applications, 2007, vol. 6555, p. 655506.

Jamison, B., and Coverstone, V., "Improved Orbit Transfer Switching Function Analysis By An Extended Frequency Study" ,Paper No. AAS 07-416, AAS/AIAA Astrodynamics Specialist Conference, Mackinac Island, Michigan, August 2007.

Kang, J., and Coverstone, V., "Further Study on Attitude Acquisition of a Satellite with Partially Filled Liquid Tank",Paper No. AAS 09-204, 19th AAS/AIAA Space Flight Mechanics Meeting, Savannah, Georgia, February 2009.

Pukniel, A., Coverstone, V., Burton, R. and Warner, J., "A Preliminary Study of the Dynamics and Control of the Cubesail Spacecraft" ,Paper No. AAS 09-417,

AAS/AIAA Astrodynamics Specialist Conference, Pittsburg, Pennsylvania, August 2009; also Vol. 135, Advances in the Astronautical Sciences, 2009.

Pukniel, A., Kang, J. and Coverstone, V., "Determination of Acquisition Time and Wheel Control for Spacecraft Using a Momentum Transfer Technique", Paper No. AIAA – 2009 - 6110, Guidance, Navigation and Control Conference, Chicago, Illinois, August 2009.

Ghosh, A., and Coverstone, V., "A Study of Low-Thrust Trajectories for Low Orbit Multiple Cubesat Missions", Paper No. AAS 10-174, 20th AAS/AIAA Space Flight Mechanics Meeting, San Diego, California, February 2010.

Burton, R., Coverstone, V., "Initial Development of the CubeSail/UltraSail Spacecraft", Paper No. JANNAF-1388, JANNAF Conference, Colorado Springs, CO, May 2010.

Pukniel, A., Coverstone, V., Burton, R., and Carroll, D., "Attitude Control of the Cubesail Solar Sailing Spacecraft in Low Earth Orbit", International Symposium on Solar Sailing, New York, NY, July 2010.

Schlapkohl,T., Kang, J. and Coverstone, V., "Analytical Control Law for Spacecraft Reorientation via Lyapunov Theory Control", Paper No. AIAA – 2010 - 7894, Guidance, Navigation and Control Conference, Toronto, Canada, August 2010.

Jagannatha, B. and Coverstone, V.,"Orbital Dynamics of Earth-orbiting Particles under Peturbing Forces", Paper No. AAS 12-417, AAS/AIAA Astrodynamics Specialist Conference, Minneapolis, MN, August 2012.

Ghosh, A., Kroeker, E., Haddox, P., and Coverstone, V, "Development of the Illinisat-2 Attitude Determination and Control System Testing Suite", Paper No. AAS 13-365, 23rd AAS/AIAA Space Flight Mechanics Meeting, Kauai, HI, February 10-14, 2013.

Ghosh, A., and Coverstone, V,"Developing a tool for the Trajectory Planning of Cubesat Missions", Paper No. AAS 13-298, 23rd AAS/AIAA Space Flight Mechanics Meeting, Kauai, HI, February 10-14, 2013.

Ghosh, A. et.al., "Increasing Cubesat Form Factor to 6U: the Lower Atmosphere/Ionosphere Coupling Experiment", Paper No. IAC-14-B4.4.10, 65th International Astronautical Congress, Toronto, Canada, September, 2014.

Luo, G., Ghosh, A., Trakhtenberg, D. and Coverstone, V, "Lifetime Simulation of Attitude Changing CubeSat Maneuvers", Paper No. AAS 15-365, 25th AAS/AIAA Space Flight Mechanics Meeting, Williamsburg, VA, February 11-14, 2015.

Kroeker, E., Ghosh, A., and Coverstone, V. "One-Dimensional Magnetic Attitude Control with Aerodynamic Stabilization for the LAICE Satellite", Paper No. AAS 16-XXX, 26th AAS/AIAA Space Flight Mechanics Meeting, Napa Valley, CA, February 14-18, 2016.

f. Publications in above categories which have been submitted for publication but not yet accepted.

Ghosh, A., and Coverstone, V., "Optimal Cooperative CubeSat Maneuvers Obtained Via Parallel Computing", submitted for publication in *Acta Astronautica.*

Coverstone, V. and Johnson, L., "Mitigating Climate Change With Earth Orbital Sunshades", submitted for publication in *Acta Astronautica*.

Ahern, D., Lorenz, C., Richardson, L. and Coverstone, V., "Solar System Unfinished: Mission Studies on the Exploration of Kuiper Belt Objects", submitted for publication in *Acta Astronautica*.

Invited Lectures

University of Washington, "Propellant-Minimizing Multi-Cubesat Cooperative Maneuvers; Tool Development and Case Studies", April, 2014.
University of Iowa, "Cubesat Mission Design at Illinois", April, 2013.
Virginia Tech, "Mission Planning for Low-Thrust Spacecraft Propulsion Technologies", November 2002.
Goddard Space Flight Center, "Optimal Spacecraft Trajectories", June 2002.
Portuguese Space Initiative Working Group, "Research at UIUC Computational Astrodynamics Research Laboratory", October 1997.
Pennsylvania State University, "Partial Feedback Linearization and Variable Structure Control of Underactuated Systems", May 1995.
University of Arizona, "Optimal and Variable Structure Control of Continuous Dynamic Systems", March 1995.
Jet Propulsion Laboratory, "Optimal Low Thrust Trajectory Analysis Using Differential Inclusion With Nonlinear Programming", August 1993.
Northwestern University, Multidisciplinary Research in Astrophysics and Aerospace, October, 1992.
University of Illinois at Urbana-Champaign, Aerospace Alumni Constituent Board Meeting, October, 1992.

h. Other *(patents, designed and marketed software, magazine articles, etc.)*

Coverstone-Carroll, V., and Prussing, J. E., "Reply by Authors to Yurij P. Ulybyshev", *Journal of Guidance, Control, and Dynamics*, Vol. 18, No. 5, September-October, 1995, p. 1224.

Coverstone-Carroll, V.L., Book review of Modern Astrodynamics: Fundamentals and Perturbation Methods. By Victor R. Bond and Mark C. Allman, Princeton University Press 1996,*Journal of Guidance, Control, and Dynamics*, Vol. 20, No. 1, January-February, 1997, pp. 215-216.

Flying on Sunshine, Science News, September 10, 2011, pp. 18-21.

2. Grants, contracts and gifts received for your research and teaching

a) For Research

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	Funding Allocated to this Professor	# of PI's & Lead PI if not this professor
1995-1996	Nonlinear Control of Underactuated Systems	Campus Research Board	$30,000	$30,000	1
1995-1996	Launch Vehicle Analysis	NASA Langley Research Center	$22,000	$22,000	1
1995-1997	Low Thrust Mission Design Software	NASA Jet Propulsion Lab	$128,802	$128,802	1
1995-1998	Aerospace Illinois Space Grant	NASA	$2,233,000	$30,000	4, Solomon (UIUC AE)
1997-1998	Space System Mission Anaysis: Phase I	Spectrum Astro/USAF Phillips Lab	$74,597	$74,597	1
1998-2000	Space System Mission Anaysis: Phase II	Spectrum Astro/USAF Phillips Lab	$ 754,977	$253,605	2
1998-1999	Analysis For Solar Sail Escape Trajectories	NASA Jet Propulsion Lab	$ 10,004	$ 10,004	1
1998-1999	Optimal Orbit Transfer Analysis: Phase I	Spectrum Astro/NASA Goddard SFC	$90,000	$21,407	2
1999-2001	Optimal Orbit Transfer Analysis: Phase II	Spectrum Astro/NASA Goddard SFC	$600,000	$202,322	2
1999-2000	Optimization of S/C Maneuvers for the OrbView Program	CU Aerospace	$19,044	$19,044	1
1999-2000	Engineering Support For the OrbView Program	Orbital Sciences Corporation	$29,950	$29,950	1
2000-2001	Artificial Neural Network Star Tracker for Celestial Navigation	Campus Research Board	$20,000	$20,000	1

2001-2003	Integrated Technology Assessment Contract	Science Applications International Corporation	$238,938	$131,416	2, Co-PI with Burton (UIUC AE)
2001-2002	Enabling Navigation of the ST7 Solar Sail System	Jet Propulsion Laboratory	$7,000	$7,000	1
2001-2002	Optimal Trajectory Analysis for Future Propulsion Systems	NASA MSFC	$49,894	$49,894	1
2002-2003	Advanced Methods For Optimal Trajectory Design	NASA GSFC	$40,793	$40,793	1
2002-2003	Multi-Function Stochastic Optimization For Space Mission Design	NASA GSFC	$20,848	$20,848	1
2002-2003	Orbital Propagation of Momentum Exchange Tether Systems	NASA MSFC	$24,000	$24,000	1
2003	Ultra Large Solar Sail Technology: Phase I	CU Aerospace/ NASA MSFC	$99,904	$55,770	2
2003-2005	In-Space Technology Assessment Contract	Science Applications International Corporation	$525,720	$289,146	2, Co-PI with Burton (UIUC AE)
2003-2004	Orbital Propagation of Momentum Tether Systems, Part II	NASA MSFC	$24,000	$24,000	1
2004-2006	Ultra Large Solar Sail Technology: Phase II	CU Aerospace/ NASA MSFC	$499,947	$166,026	4
2004-2005	JIMO Mars Transfer Vehicle (MTV) Derivative Study	Boeing Phantom Works	$10,529	$10,529	1
2007-2008	Advanced Dynamic Theory and Modeling into MATLAB /SIMULINK	Boeing Company	$23,000	$23,000	1
2007-2008	Ultra Sail Solar Sail Flight Experiment:	CU Aerospace/	$99,997	$31,132	2

	Phase I	NASA MSFC			
2008-2011	Ultra Sail Solar Sail Flight Experiment: Phase II	CU Aerospace/ NASA MSFC	$599,993	$280,376	2
2014-2015	Advancement Opportunities in Spacecraft Trajectory Optimization	NASA GSFC	$94,035	$94,035	2, Ghosh (postdoc at UIUC)
2014	Parallel Nonlinear Optimization for Astrodynamic Navigation	NASA GSFC	$100,000	$40,000	1
2015-2016	APERTURE: A Precise Extremely large Reflective Telescope Using Re-configurable Elements	NASA NIAC	$100,000	$43,187	1
2015-2017	Small Spacecraft Integrated Power System with Active Thermal Control	NASA	$200,000	$200,000	2

b) For Instruction

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	Funding Allocated to this Professor	# of PI's & Lead PI if not this Professor
1993-1995	Flight Simulator	National Science Foundation	$48,843	$0	1, Sivier (UIUC AE)
1995-1997	Teacher Environmental Training	Globe	$86,483	$86,483	1
2004	Workforce Development	NASA	$100,001	$25,756	4 (Geubelle, UIUC AE)
2014	RASC-AL Competition	National Institute of Aerospace	$6,000	$6,000	1
2015	JPL Space Design Competition	Jet Propulsion Laboratory	$5,000	$5,000	1
2015	RASC-AL Competition	National Institute of Aerospace	$6,000	$6,000	1

2015	Strategic Instructional Innovations Program	College of Engineering, Illinois	$51,382	$0	6, Woodard

3. Areas of Research *(brief description, key words are adequate)*

Space Mission Analysis and Design

Computing Optimal Low-Thrust Spacecraft Trajectories For Advanced Propulsion Concepts (Solar Sail, Solar Electric Propulsion, Nuclear Electric Propulsion)

4. Graduate Thesis Research Advising *(list co-advisor, if any)*

(a) M.S. Degrees Granted *(name and year)*

1. N. Wilkey, 1994, Optimal Control of a Satellite Robot System Using Direct Methods
2. G. Rauwolf, 1995, Near-Optimal Low-Thrust Orbit Transfers Generated by a Genetic Algorithm
3. S. Coates, 1996, Control of a Underactuated Two-Link Manipulator
4. S. Deal, 1996, Design of a Low-Cost Wireless Power Transmission Experiment
5. M. Biggs, 1996, Cost-Effective Launch System for Competitive Near-Term Return on Investment
6. D. Thunnissen, 1996, Low Thrust Trajectory Optimization Using Differential Inclusion Concepts
7. G. Rogers, 1997, Spacecraft Design and Orbit Selection with Environmental Disturbances
8. J. Hartmann, 1999, Low Thrust Trajectory Optimization Using Stochastic Search Techniques
9. B. Powers, 1999, Solar Sail Optimal Orbital Transfers to Earth Synchronous Stable Orbits
10. T. Cerven, 1999, Optimal Spacecraft Reorientation Using Movable Appendages
11. C. Hartman, 1999, Spacecraft Trajectory Optimization Based on Higher Order Differential Inclusion
12. Trask, 2000, Optimal Powered Aeroassisted Orbit Transfers Using Solar Electric Propulsion
13. W. Mason, 2001, Optimal Earth Orbiting Satellite Constellations Via a Pareto Genetic Algorithm
14. J. Hargens, 2001, Trajectory Optimization Using Differential Inclusion and Modified Equinoctial Elements
15. S. Neurauter, non-thesis,2002
16. H. Kenevan, non-thesis,2003
17. J. Westerhoff, 2004, Rendezvous Maneuver Feasibility For Momentum Exchange Tethers
18. Siegel, 2004 (non-thesis)
19. S. Wake,2006 (non-thesis)
20. T. Botter,2006, Structural Dynamics of Ultrasail: A Spin-Stabilized, Mast-Free Solar Sail Design
21. K. Ertmer, 2006, Design and Operation of a Thin-Film Vacuum Deployment Experiment for Ultrasail Concept Validation
22. A. Pukniel, 2006, Attitude Determination And Three-Axis Active Control System For Nanosatellites With Magnetic Torque Actuation

23. K. Jackson, 2006, Optimal Trajectories From The Moon To Sun/Earth-Moon L1 Point With Ballistic Launch
24. R. Page, 2007 (non-thesis)
25. B. Jamison, 2007, Improved Orbit Transfer Switching Function Analysis By An Extended Frequency Study
26. H. Jiang, 2008, MS also in AgE, Coupled Optimization Analysis for Life Support System Cost and Reliability
27. A. Ghosh, 2009, Study of Atmospheric Drag Recovery Trajectories of Low-Thrust Cubesats
28. N. Chillemi, 2009 (non-thesis)
29. J. Warner, 2009, Attitude Determination and Control of Nano-satellites
30. R. Beeson, 2010, (non-thesis)
31. J. Majcan, 2010, (non-thesis)
32. S. Szopinski, 2010, (non-thesis)
33. B. Jagannatha, 2012, Solar Radiation Pressure, Drag and Gravitational Effect on Dust Particles in Earth Orbits
34. V. Shikova, 2013, (non-thesis)
35. A. Osouf, 2013, Numerical Simulations of Experimental Results In A Power Unit To Validate The Energy Output Resulting From Gas Pressurizations On Nanoparticles
36. P. Haddox, 2014, A Novel Magnetic Field Approach To Simulate Spacecraft Attitude Determination And Control
37. L. Richardson, 2015, The Non-Linear Parallel Optimization Tool: A Software Overview and Efficiency Analysis

(b) M.S. Thesis Students Supervised at Present *(name)*

Joshua Aurich
Craig Babiarz
Devin Bunce
Marie-Caroline Corbineua
Ankit Jain
Tristan Sarton DuJonch
Jose Sepulveda
Vishwa Shah
Thibaut Wenger

(c) Ph.D. Degrees Granted *(name and year)*

1. K. Lee, 1998, Swing-Up and Balancing Control of Underactuated Robotic Systems
2. A. Trask, 2002, Autonomous Artificial Neural Network Star Tracker For Spacecraft Attitude Determination
3. T. Cerven, 2003, Efficient Hierarchical Global Motion Planning For Autonomous Vehicles
4. B. Woo, 2004, Efficient Trajectory Optimization Procedure For Designing Solar-Electric Propulsion, Gravity-Assist Outer-Planet Missions
5. J. Hartmann, 2005, Counter-Intuitive Behavior in Locally Optimal Solar Sail Escape Trajectories
6. J. Hargens, 2006, The Dynamics and Control of the UltraSail System
7. A. Pukniel, 2010, The Dynamics and Control of the CubeSail Mission-A Solar Sailing Demonstration

8. A. Ghosh, 2013, Multi-Cubesat Mission Planning Enabled Through Parallel Computing

(d) Ph.D. Thesis Students Supervised at Present *(name)*

A. Beeson, passed qualifiers, 2012
B. Haddox, passed qualifiers, 2015
C. Jagannatha, passed qualifiers 2014
D. Kroeker, passed qualifiers, 2010, Prelim 2015

5. Editorships of Journals or Other Learned Publications

Associate Editor of the AIAA Journal of Guidance, Control and Dynamics (2001-2004)

7. Post-doctoral Associates and Visiting Scientists (>3 months stay) in the past three years *(list name, year(s), country of origin, permanent employer)*

Visiting Scholar, Ja-Young Kang, 2008-2010, Associate Professor, Korea Aerospace University.

Visiting Scholar, Cesar Ocampo, 1994, USA, University of Colorado Center for Astrodynamics Research.

8. Other Scholarly Activities in the past five years *(conferences organized or chaired, unpublished presentations, etc.)*

AIAA GNC/AFM/MST/ASC/ASE Joint Conference General Chair, Toronto Canada 2010

Session Chair

Session Chair, Optimization, AAS/AIAA Spaceflight Mechanics Conference, Tampa, FL, January 2006.
Session Chair, Optimized Trajectory Design, AIAA/AAS Astrodynamics Specialist Conference, Monterey,CA, August 2002.
Session Chair, Navigation and Control, AIAA/AAS Astrodynamics Specialist Conference, Boston, MA, August 1998.
Session Chair, Mission Design-Near Earth, AAS/AIAA Spaceflight Mechanics Conference, Austin, Texas, February 1996.
Session Chair, Orbit Transfer, AAS/AIAA Astrodynamics Specialists Conference, Halifax, Nova Scotia, Canada, August 1995.
Session Chairman, Robot Control, Thirtieth Annual Allerton Conference on Communication, Control, and Computing, Allerton House, Monticello, IL, 1992.

Professional Reviewer for NASA

The New Horizons Pluto Mission Design Peer Review, 2003
Space Technology (ST-9) Review, 2006

Unpublished Presentations

Donahue, B., Cupples, M., Green, S., Coverstone, V., and Woo , B., "In-Space Propulsion Options for Mars Sample Return Missions", Space Technologies and Applications International Forum, Albuquerque, NM, Feb. 8-11, 2004.

C. Service in the Past Three Years

1. Professional Society *(list membership; office held, with dates; major committees or boards)*

Member:

American Institute of Aeronautics and Astronautics (Fellow, 2013)
Space Flight Mechanics Technical Committee, American Astronautical Society (AAS), 1996-2000, 2006-2010
AAS Conference Administration Subcommittee (2007-2010)
Astrodynamics Technical Committee, AIAA, 1994-1997
Mechanics and Control of Flight Award Selection Committee, AIAA, 1995, 1997
American Astronautical Society (Senior Member)
American Society for Engineering Education
The Planetary Society
Phi Kappa Phi Honorary Society
Tau Beta Pi Honorary Society
The Order of the Engineer
Illinois State Academy of Science

Technical Reviewer:

Journal of Dynamic Systems, Measurement, and Control
Journal of Spacecraft and Rockets, AIAA
Acta Astronautica
IEEE Transactions on Control Systems Technology
IEEE Transactions on Systems, Man and Cybernetics
IEEE Robotics and Automation Society
Optimal Control Applications & Methods
IEEE Transactions on Automatic Control
Journal of Guidance, Control and Dynamics, AIAA
Journal of Robotic Systems
Mechanics Research Communications, Basic and Applied

2. University *(department, college and campus committees, administration, etc.)*

National and International Scholarships Program	2010-present
Graduate College Working Group on Online Education	2012-present
Goldwater Scholarship Campus Review Committee	2012
Graduate College Career Advisory Committee	2010-2011
Campus Executive Women's Conversation Group	2010
College of Engineering Associate Dean Search Committee	2007-2008
Provost's Initiative Teaching Advancement Board	2007-2010
Committee on Institutional Cooperation, Academic Leadership Prog.	2007-2008
Chancellor's Committee on Commencement	2003-2004
University Restricted Research Committee	2006
Member, Aerospace Illinois Space Grant Consortium Director's Board	1992-2007
UIUC Program Director, Aerospace Illinois Space Grant Consortium	1995-2007
University Space Research Association Council of	1994-present

Institutions Representative	
College of Engineering Associate Dean of Undergraduate Programs Search Committee	2013-2014
WaterCAMPWS REU speaker	2010
College of Engineering Associate Dean Search Committee	2007-2008
Industrial & Enterprise Systems Engineering (IESE) Head Search Committee	2006
Aerospace Engineering Head Search Committee	2006-2007
Chaired Aerospace Engineering Faculty Search Committee	2006
Engineering College Undergraduate Control Laboratory Revitalization Committee	1992
Chair, Engineering College Design Council	1998-1999
Member, Engineering College Design Council	1994-2001
GE 380 – "Engineering Design Optimization" Review Subcommittee	1998
ECE 386 – "Optical Remote Sensing" Review Subcommittee	2004
Guest speaker – "Why Graduate School and How to Apply" – WaterCAMPWS	2010
Session Facilitator, Higgerson Forum on Entrepreneurship through Engineering	1996
Speaker, UIUC COE Workshop for Prospective Engineering Student's with Disabilities	1996
Speaker, UIUC COE Advisory Board	1998
College Honors Symposium	1998
Member, External Affairs Subcommittee	1999-2000 2002-present
AE Advisory Committee	2014-present
Member, Engineering Workstation System Advisory Comm.	2002-2003
Women Engineering Faculty Retreat	2000
AAE Graduate Admissions Committee	1992-1995
Faculty Contact For Outstanding Incoming Freshmen	1993-1995
AAE Graduate Fellowship Committee	1993-2003
AAE Strategic Planning Committee	1996-1997
AAE Strategic Planning Committee	1999-2001
AAE Advisory Committee	1996-1998
AAE Advisory Committee	2002-2004
AAE Advisory Committee	2005-2007

3. Federal and State *(government commissions or panels, community, industrial extension, etc.)*

Illinois Aerospace Institute Summer Camps, Faculty Advisor	1995
Illinois Junior Academy of Science Judge	1997
NRC Aeronautics and Space Engineering Reviewer	2001-present
AIAA Economics Technical Committee Meeting "Space Research at the University of Illinois"	2003

4. Other Outside Service

"Small Wheels Play Big Role on Kepler Spacecraft," H. Fountain, *New York Times*,	May 20, 2013
Themis Magazine, "Zeta With Zest"	2006
Student Exploration and Development of Space (SEDS) Conference Speaker	2005
WILL AM Radio	2004
WHFH FM Radio	2004
News Gazette Interviews	2003-2004
NSF Faculty Patterns and Needs Research Project Participant	2003
WIMSE Program Speaker, Trelease, Florida Residency Hall	2000
Golden Z Club Mentor	1996-1998
Sigma Gamma Tau Presentation "Astronaut Selection Process"	1996
Illinois Space Development Society Presentation "Astronaut Selection and Training"	1995
Society of Women Engineers Scholarship Selection Committee	1993
Member of the Champaign-Urbana Zonta Club Amelia Earhart Presentation (1995) "Our Future in Space" (1999)	1992-present

E. Improvement Activities *(List any specific programs in which you have participated to improve teaching and professional competence)*

University of Illinois Proposal Development Institute	1993
Dean's Seminar on Teaching Improvement	1996,1998

University of Illinois
at Urbana-Champaign

Department of Aerospace Engineering
Victoria Coverstone
306 Talbot Laboratory
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Professional Interest

Skill, commitment, and vision are required from a successful associate dean, and my experience has prepared me well for this position. Through my holding the position of Associate Dean for Graduate and Professional Programs in the College of Engineering at Illinois for six years, I have demonstrated my ability to lead faculty groups, pull together disparate viewpoints to build a consensus and get things done. I have worked successfully with top campus administrators. The Associate Dean of Graduate and Professional Programs office oversees all graduate education programs in the college of engineering, including online courses and extramural programs, diversity programs, professional degree programs and other issues affecting the 2700 graduate students in the College of Engineering. Prior to becoming Associate Dean in the college, I was Associate Head of the Aerospace Engineering Department at Illinois. I was appointed to participate in a very selective academic leadership program that is organized by the Committee on Institutional Cooperation, which is the academic organization of the Big Ten-plus consortium of universities. For twelve years, I served as the campus program director for the Aerospace Illinois Space Grant Consortium. My latest accomplishment in these various leadership roles at Illinois include the recent development and approval of a college-wide M.Eng degree to respond to the national need for more interdisciplinary and systems-level training of engineers. I have experience in all aspects of staff development, from creating new positions to setting salaries.

I am an AIAA fellow and former Chair of the Council of Institution for the Universities Space Research Association which has 105 member institutions and forms the largest and most technically diverse university association serving the space research community. Being the chair is a unique honor and a position of responsibility and influence in the university space community. I have been called as a witness by the Strategic Forces Subcommittee of the House Armed Services Committee, giving testimony on the topic of space professionals.

I am a co-founder of a small aerospace company, CU Aerospace. CU Aerospace has 16-years of experience with operations as a government Prime Contractor and is engaged in identifying and developing promising new aerospace technologies with the ultimate goal being commercialization and distribution of those technologies.

I have a passionate commitment to students and an equally passionate commitment to research and teaching in the engineering field. The position of Associate Dean at San Diego State University is attractive to me because it offers a place that I can put my passions to work, and an opportunity to make an impact. I am energized by the possibilities that exist.

I feel that nearly every professional experience I have had – whether teaching, advising, research, administration, campus leadership, working in a large aerospace company and starting up a small aerospace company – has prepared me for this position. In each of these areas, I have tried to achieve excellence. I would strive to bring that same level of excellence to the role of Associate Dean.

The College of Engineering at SDSU has tremendous strengths. To maintain and improve such quality, continual self-reflection is required. My vision for the College of Engineering at SDSU is to expand the research and teaching portfolio for the faculty and students with the ultimate goal of increasing the national visibility of the college. I will work with the dean to develop a strategic plan to identify goals that are important to our students, staff, faculty, dean and campus administrators. Let me first discuss some strategies that I believe will enable the college to move toward a more prominent national presence.

First, we must **sustain and enhance academic excellence through strategic faculty hires**. The college's outstanding research must continue to be supported through additional faculty hires. In addition, we must discuss promoting emerging areas. I will push to increase the faculty size to allow us to grow excellence and in doing so, support a larger number of undergraduate and graduate students. In addition to faculty hires, I will recommend faculty for national awards to publically recognize achievements.

A second strategy is **to grow the research portfolio and the leadership roles** of the faculty. The faculty is engaged in many large-scale research initiatives. We should reward faculty that take leadership roles in large-scale research initiatives. Examples of opportunity for growing our research portfolio include leading ERC, IGERT and MURI proposals. For interested senior faculty, I will nominate these faculty to participate and lead national committees or become directors of offices of national importance such as NSF and DARPA.

A third strategy is **to strengthen linkage to external and internal constituencies**. I believe that communicating the research and educational strengths both internally to the campus and to SDSU friends and alumni are essential. Although budget is required for developing effective communication material, I would work to secure and commit funds (perhaps through alumni gifts) to showcase the activities within the college.

A fourth strategy is **to greatly improve the diversity of the students and faculty in the college**. Improving diversity ensures the future of the engineering profession by educating talented individuals from all segments of the population, and lives up to the university's promise to be a path of advancement for all people of commitment and ability. I would start by making retention, and more importantly graduation, the top priority of our diversity efforts.

University of Illinois
at Urbana-Champaign

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