

PAUL R. GRIESEMER

Education

- August 2009 Ph.D., Dept. of Aerospace Engineering and Engineering Mechanics
The University of Texas, Austin, Texas
- GPA: 3.7/4.0
 - Dissertation: “Automated Generation and Optimization of Low Energy Transfers from the Earth to the Moon;” Advisor: Cesar Ocampo, Ph.D.
- May 2008 M.S.E., Dept. of Aerospace Engineering and Engineering Mechanics
The University of Texas, Austin, Texas
- January 2001 B.S., Department of Mechanical Engineering and Materials Science
Rice University, Houston, Texas
- GPA: 3.4/4.0

Experience

- 2011-Present Assistant Professor, University of Mary Hardin-Baylor, Belton Texas
- Instructor of undergraduate engineering courses with a typical 12 semester hour course load.
 - Advisor of 15 students per semester.
 - Led undergraduate research teams in robotics and artificial intelligence through the RoboCup Robot Soccer program
 - Founder and advisor of the UMHB Geeks with a Mission student organization
 - Research interests in Control Systems and Artificial Intelligence
- 2009-2011 Senior Technical Staff, Princeton Satellite Systems, Plainsboro, New Jersey
- Principal Investigator of a Phase II Small Business Innovative Research (SBIR) contract with the U. S. Missile Defense Agency for the investigation of cooperative guidance and navigation methods for the optimization of the target state solution in the ballistic missile defense scenario. Duties included theoretical expansion of cooperative guidance methods and implementation of the theory in a simulation testbed. Led a team of software developers in the development of a high-fidelity simulation.
 - Principal Investigator of a Phase I SBIR contract with NASA for the implementation of low energy methods into Princeton Satellite Systems' Spacecraft Control Toolbox and integration with NASA's mission design software tool, GMAT. Researched optimization methods for spacecraft trajectories, and expanded the theory developed in my dissertation research to the general lunar transfer problem.

- Lead Engineer on the Space Rapid Transit development project, a two-stage-to-orbit horizontally launched and landed space launch vehicle being designed to meet the needs of the U.S. Air Force's responsive launch requirements. Responsibilities include project management, lifting body shape design, trajectory optimization, hypersonic system integration, control system design, and requirements definition.
 - Member of the engineering team on a Phase II SBIR contract through the U.S. Air Force to develop satellite proximity operations for the evasion of threatening scenarios.
 - Participated in active research in hypersonic aerodynamics, optimal spacecraft trajectories, nonlinear estimation techniques, multi-agent guidance strategies and spacecraft system integration.
 - Responsible for mentoring three groups of interns and externs, including advising a MIT student in their Bachelor's thesis.
 - Responsible for multiple research grant proposals.
- 2003-2009 Teaching Assistant, Department of General Engineering, University of Texas
- Differential Equations, Principal Instructor (2004-2007, 2008-2009)
 - Physics I, Principal Instructor (2003)
 - Calculus I, Principal Instructor (2003)
 - Responsible for creating lectures, creating and grading problem sets and evaluation for daily classes. Incorporated cooperative learning techniques into science and engineering courses. Mentored group study sessions and tutored students needing supplemental support.
- 2006-2007 Summer Research Fellow, NASA Goddard Space Flight Center, Greenbelt, Maryland
- Integrated a Fortran 90 ballistic lunar capture targeting algorithm into STK/Astrogator
 - Advised mission planners on the optimality of lunar transfers
- 2005 Summer Intern, Odyssey Space Research, Houston, Texas
- Programmed a simulation of communication and control between the HTV transfer vehicle and a ground control station
 - Debugged elements of the TRICK simulation environment
- 2002 Research Engineer, Stewart Automotive Research, Houston, Texas
- Designed an apparatus to test the permeability of composite pre-forms with consideration of fluid flow, structural analysis, data acquisition and experiment control
 - Wrote proposals for grant submission to (do you remember who?)
- 2001-2002 Associate Engineer, Lockheed Martin Aeronautics Company, Fort Worth, Texas
- Created crack growth models for durability and damage tolerance analysis, and residual life studies of the F-16
 - Created service life reports and presentations for customer governments

- 1999 Practicum, Daimler Chrysler Aerospace Airbus, Bremen, Germany
- Aided in the development and calibration of a non-destructive testing system for laserbeam welded stringers in a 100% German speaking work environment

Technical Skills

- General Skills:* Numerical and analytical optimization, mission analysis and design, control system design, guidance algorithm design.
- Computer skills:* Fortran 90, C++, Harwell Subroutine Library, Matlab, COPERNICUS, STK/Astrogator, GMAT, Python, pyQT, Simulink, C, TRICK, Unix, I-DEAS, Photoshop, Corel Photopaint, Paint Shop Pro, Mac, Windows, Linux, Excel.
- Language Experience:* Twelve semester hours of German for Engineers. Four months in a German work environment in Bremen, Germany.

Honors and Awards

- 2016 UMHB Faculty Development Grant
- 2014 National Instruments Elite Educator
- 2012 UMHB Summer Research Grant
- 2007 William S. Livingston Outstanding Graduate Employee Award (awarded to the outstanding Teaching Assistant at the University of Texas)
- 2005-2008 Research Fellow, NASA Graduate Student Researchers Program
- 2007 NASA Student Research Ambassador, 58th International Aeronautical Congress, Hyderabad, India
- 2007 Gold Medal, Graduate and Industry Networking conference paper competition
- 2005 Guest Speaker, University of Texas Colloquium for Graduate Student Instructors
- 2005 College of Engineering Award for Excellence in Tutoring
- 1999 Scholarship, International Association of Student Exchange for Technical Experience

Presentations and Publications

Dula, T. A., Griesemer, P. R., and Albrecht, J., "Machine Learning Model for Prediction Emotional Affect in Music," International Conference on Music Perception and Cognition, July 2016 in San Francisco, CA.

Griesemer, P. R. and Eaton, L., "Student Learning in a Computer Science Flipped Course", Teaching Professor Technology Conference, October 2013 in New Orleans, LA.

Mueller, J. B., Griesemer, P. R., and Thomas, S. J., "Avoidance Maneuver Planning Incorporating Station-Keeping Constraints and Automatic Relaxation", Journal of Aerospace Information Systems, Volume 10, Number 6, June 2013.

Griesemer, P. R., Ocampo, C. A., and Cooley, D. S., "Optimal Low Energy Earth-Moon Transfers", Acta Astronautica, Volume 76, July/August 2012.

Griesemer, P. R., Ocampo, C. A., and Cooley, D. S., "Targeting Ballistic Lunar Capture Trajectories Using Periodic Orbits", AIAA Journal of Guidance, Control, and Dynamics, Volume 34, Number 3 May/June, 2011.

Griesemer, P. R., Mueller J. B., Paluszek M. A. and Du, J., "System Design of a Reusable, Horizontal Take-Off/Horizontal Landing Two Stage to Orbit Vehicle", 2010 Joint Propulsion Conference, 5 - 28 July 2010 in Nashville, TN.

Mueller J. B., Griesemer, P. R., Paluszek M. A. and Du, J., "Unified GN&C System for the Space Rapid Transit Launch Vehicle", 2010 AIAA GN&C Conference, 2 - 5 August 2010 in Toronto Ontario, Canada

Mueller, J. B. , Griesemer, P. R., and Thomas, S., "Avoidance Maneuver Planning Incorporating Station-Keeping Constraints and Automatic Relaxation," AIAA Infotech, April 2010 in Atlanta, Georgia.

Griesemer, P. R., "Automated Generation and Optimization of Ballistic Lunar Capture Transfer Trajectories", Ph.D. Dissertation, University of Texas at Austin, 2009.

Griesemer, P. R., Ocampo, C., and Cooley, D. S., "An Efficient Strategy for Targeting Ballistic Lunar Capture Trajectories," Presented at the 16th AIAA/AAS Space Flight Mechanics Meeting, January 2006 in Tampa, FL.

Griesemer, P. R., Ocampo, C., and Cooley, D. S., "The Primer Vector History of Low Energy Earth-Moon Transfers," Presented at the 58th International Aeronautical Congress, September 2007 in Hyderabad, India.

Griesemer, P. R., and Ocampo, C., "Targeting Low Energy Transfers in a Four Body System," Presented at the 2007 University of Texas Graduate and Industry Networking Conference, February 2007 in Austin, TX.