



67th International Astronautical Congress

Guadalajara, Mexico

September 26 – September 30, 2016

Student Researcher



John Alcorn

University of Colorado Boulder

john.alcorn@colorado.edu

Presentation:

Date: September 26, 2016

Time: 15:15

Room: Salon Jalisco E6

Research Title:

Simulating Attitude Actuation Options Using The Basilisk
Astrodynamics Software Architecture

Biographical Sketch

John Alcorn is a PhD student in Aerospace Engineering Sciences at the University of Colorado Boulder. John works as a graduate research assistant under Dr. Hanspeter Schaub at the Colorado Center for Astrodynamics Research supporting the Laboratory for Atmospheric and Space Physics (LASP)/Mohammed Bin Rashid Space Centre (MBRSC) Emirates Mars Mission (EMM). John received his B.S. in Aerospace Engineering at the University of Alabama Huntsville in 2014, and worked as a defense contractor before pursuing his PhD at CU Boulder. His research interests include high-fidelity modeling of spacecraft actuators, specifically reaction wheel imbalance and structural dynamics. John plans to use his expertise in modeling, simulation, and flight software to pursue career opportunities in commercial space.

Research and Education Activities

- 2015-present: Graduate Research Assistant, Colorado Center for Astrodynamics Research
- 2014-2015: Space Systems Engineer, Scitor Corporation
- 2013-2014: Undergraduate Research Assistant, Adaptive Structures Laboratory
- 2013; Intern: NASA Goddard Space Flight Center
- 2012; Intern:, NASA Marshall Space Flight Center



67th International Astronautical Congress

Guadalajara, Mexico
September 26 – September 30, 2016
Student Researcher



Anna Colleen Crouch

University of Michigan
accrouch@umich.edu

Presentation:

Date: September 28, 2016
Time: 13:15
Room: Jalisco Hall C

Research Title:

Thermoregulation by Sex: A Cardiovascular MRI Study

Biographical Sketch

Colleen is currently a third year PhD candidate in Mechanical Engineering at the University of Michigan. Her interest in space travel and research started at a young age having grown up close to Huntsville, Alabama and attended space camp. As an undergraduate at the Georgia Institute of Technology, she began her research in cardiovascular health and thermoregulation. Her background in material science and biomedical engineering provide a unique approach to her research by combining engineering concepts and physiology. Colleen hopes to continue her research as a professor and inspire the next generation of scientists and researchers.

Research and Education Activities

- 2016-present: Translational Cardiovascular Research and Entrepreneurship (NIH T32) Trainee
- 2016: Engineering Graduate Symposium Co-chair
- 2015-present: Rackham Graduate School Student Government Representative
- 2016: NSF Graduate Research Fellowship Honorable Mention
- 2014-present: Rackham Merit Fellow
- 2012-2014: Undergraduate Research Assistant in the Cardiovascular Fluid Mechanics Lab, Georgia Institute of Technology
- 2013: President's Undergraduate Research Award
- 2012: Research Experience for Undergraduate (REU) with the Center for Energy Efficient Electronic Science (E3S)
- 2010-2014: Georgia Tech President's Scholar



67th International Astronautical Congress

Guadalajara, Mexico

September 26 – September 30, 2016

Student Researcher



Christine Fanchiang

University of Colorado Boulder

christine.fanchiang@colorado.edu

Presentation:

Date: September 28, 2016

Time: 13:15

Room: Interactive Presentation Area

Research Title:

Using a Crew Performance Centered Approach for Designing and Evaluating Human Spacecraft

Biographical Sketch

Christine Fanchiang received her Bachelor's Degree in Aeronautics and Aerospace Engineering from MIT and is now finishing her doctoral thesis in the Aerospace Engineering Sciences Department at the University of Colorado at Boulder with an emphasis in Bioastronautics. Her research focuses on defining a crew performance metric for human-rating space vehicles to better understand the effects of spacecraft design on crew performance. Her other interests include researching new technologies for regenerative life support systems and developing a long-term lunar outpost with a specific focus on biologically-engineered systems. Living in Colorado, she enjoys hiking, camping, snowboarding, and building satellites.

Research and Education Activities

- NASA Harriet G. Jenkins Graduate Fellowship, 2013 - present
- FAA Center of Excellence, Graduate Research Assistant, 2011 – 2013
- NASA eXploration Habitat (X-Hab) Academic Innovation Challenge for Robotic Plant Gardening, 2012 – 2014
- 1st place team at Silicon Valley Space Startup Weekend, 2014
- Hawai'i Space Exploration Analog and Simulation (HI-SEAS) Design Consultation, 2011–2012
- 1st place graduate team for NASA's Revolutionary Aerospace Systems Concept Academic Linkage (RASC-AL) competition, 2014, 2013, and 2012
- 2nd place team in Inspiration Mars International Student Design Competition, MAVERIC, 2014
- P.E.O. International Scholar Award, 2014-2015
- Zonta Amelia Earhart Fellowship 2014-2015
- 2nd place poster FAA COE CST Annual Technical Meeting #3, 2013
- Achievement Rewards for College Scientists (ARCS) Scholarship, 2012 – 2015



67th International Astronautical Congress

Guadalajara, Mexico

September 26 – September 30, 2016

Student Researcher



Therese Jones

Pardee RAND Graduate School

tjones@rand.org

Presentation:

Date: September 26, 2016

Time: 15:15

Room: Joya 1&2

Research Title:

Creating a Safety Culture in Commercial Human Spaceflight

Biographical Sketch

Therese Jones is currently a fourth year Ph.D. student at the Pardee RAND Graduate School, specializing in space policy. Her dissertation focuses on the regulation of commercial human spaceflight, and how the organizational culture of spaceflight regulatory agencies and their interactions with external stakeholders can shape a safety culture. Her other work includes studies on GPS and communication satellite resilience, emerging space technologies, and government acquisition of commercial satellite data. Prior to RAND, Therese received a master's in astrophysics from UC Berkeley, and bachelor's degrees in astronomy and astrophysics, physics, German, and international studies from The Pennsylvania State University.

Research and Education Activities

- 2013-present: RAND Assistant Policy Analyst
- 2015: Visiting Scholar, United Nations Office of Outer Space Affairs
- 2009-2013: National Science Foundation Graduate Research Fellow, University of California Berkeley
- 2009-2013: Research Assistant, University of California Berkeley Department of Astronomy
- 2011: Visiting Scholar, Harvard Smithsonian Center for Astrophysics
- 2010: Visiting Scholar, Max Planck Institute for Extraterrestrial Physics
- 2009: American Astronomical Society Chambliss Award Recipient
- 2008-2009: Pennsylvania Space Grant Consortium Fellow
- 2008: Society of Physics Students Outstanding Student Award Recipient
- 2008: Society of Physics Students Leadership Award Recipient
- 2007: Research Experience for Undergraduates summer intern, Harvard Smithsonian Center for Astrophysics
- 2005-2009: Research Assistant, Pennsylvania State Department of Astronomy and Astrophysics



67th International Astronautical Congress

Guadalajara, Mexico

September 26 – September 30, 2016

Student Researcher



Pavan S. Krishnamurthy

Georgetown University Law Center

pavan.s.krishnamurthy@gmail.com

Presentation:

Not Applicable

Research Title:

Not Applicable

Biographical Sketch

Pavan Krishnamurthy is a 2017 JD candidate at the Georgetown University Law Center. He received a MSc International Relations (Research) at the London School of Economics with a concentration in international trade law. Pavan completed his undergraduate studies from Northwestern University, after which he spent over a year working in cross-border contractor management. He was a 2016 summer associate in the international trade practice of Sidley Austin, LLP. He was runner up in the International Institute of Space Law Manfred Lachs Space Law Moot Court Competition.



67th International Astronautical Congress

Guadalajara, Mexico

September 26 – September 30, 2016

Student Researcher



Kavya K. Manyapu

University of North Dakota

Kavya.manyapu@und.edu

Presentation:

Date: September 30, 2016

Time: 09:45

Room: Guadalajara Hall Salon 2

Research Title:

Proof of Concept Demonstration of Novel Technologies for Lunar Spacesuit Dust Mitigation

Biographical Sketch

Kavya K. Manyapu is a Ph.D. candidate at the University of North Dakota (UND) in Aerospace Sciences. She holds a M.S from MIT in Aeronautics and Astronautics and a B.S. from Georgia Tech in Aerospace Engineering. She is interested in building technologies to propel human space exploration with a belief in the universal applicability of space research for the betterment and sustainability of our planet. She is also currently working as Flight Crew Operations Engineer at the Boeing Company on the CST-100 Starliner spacecraft program. Her current doctoral research is focused on dust mitigation technologies for planetary spacesuits collaborating with UND, NASA and Rice University.

Research and Education Activities

- 2013-Present: Ph.D. Candidate, University of North Dakota, Aerospace Sciences
- 2016: Patent Pending on Spacesuit Dust mitigation. Inventor: Manyapu, Kavya K. Co-inventor Dr. Leora Peltz.
- 2016: Daniel and Jo Emily Nieuwsma Research Scholarship, UND
- 2015-2016: Two research papers on spacesuit dust mitigation at the International Conference on Environmental Systems. Two research papers at IAC
- 2015: Best interactive Presentation Award for Doctoral research paper, IAC 2015, Jerusalem
- 2011-Present: Flight Crew Operations Engineer/Flight Testing, Boeing CST-100 Starliner program
- 2008-2010: Graduate Research Assistant, MIT with research focus on utilization on renewable energy sources for space and terrain applications
- 2004-2006: Undergraduate Research Assistant, Space Systems Design Lab, Georgia Institute of Technology with research focus on Entry, Decent and Landing systems for Human mars exploration missions



67th International Astronautical Congress

Guadalajara, Mexico
September 26 – September 30, 2016
Student Researcher



T. Adam Newsome

McGill University Institute of Air and Space Law
tanewsome@gmail.com

Presentation:

2016 Manfred Lachs Space Law Moot Court World Finals

Biographical Sketch

Adam is currently pursuing his LL.M. (Masters of the Law) at the McGill University Institute of Air & Space Law in Montreal. His thesis considers the legal implications of safety and security zones in outer space through a study of past proposals and zone constructs in the sea and air domains. Upon completing his LL.M., Adam will assume the position of Chief, Space Law at U.S. Air Force Space Command (AFSPC) in Colorado Springs, CO. Prior to attending McGill, Adam worked as a prosecutor and criminal defense attorney for seven years. Adam is married and has three beautiful children.

Research and Education Activities

- The Legality of Safety and Security Zones in Outer Space: A Look to Other Domains and Past Proposals (Thesis Submitted for fulfillment of LL.M degree requirements – August 2016)
- 4th Manfred Lachs Conference on Conflicts in Space and Rule of Law – Rapporteur
- 3rd Strategic Space Law Program – Rapporteur
- Winner of the North American Rounds of the 2016 Manfred Lachs Moot Court Competition



67th International Astronautical Congress

Guadalajara, Mexico

September 26 – September 30, 2016

Student Researcher



Jason Alexander Reiter

The Pennsylvania State University

jar577@psu.edu

Presentation:

Date: September 30, 2016

Time: 09:45

Room: Salon Jalisco E7

Research Title:

Trading Spacecraft Fuel Use and Mission Performance to Determine the Optimal Collision Probability in Emergency Collision Avoidance Scenarios

Biographical Sketch

Jason is currently in his third year of graduate school at The Pennsylvania State University studying Aerospace Engineering. He graduated from Cal Poly with a BS in Aerospace Engineering in 2014. His MS, awarded this past May 2016, was funded through a research assistantship with the Penn State Applied Research Lab and his doctoral work is now funded through a SMART scholarship. Specializing in astrodynamics, Jason's master's thesis focused on analytically optimizing emergency collision avoidance maneuvers and analyzing the effects of the maneuvers on mission performance. He hopes to continue researching additional techniques for ensuring the safety of orbiting spacecraft.

Research and Education Activities

- 2016-present: SMART (Science, Mathematics, and Research for Transformation) Scholar with the Air Force Space and Mission Systems
- 2016: Flight Dynamics Intern, Applied Defense Solutions
- 2016: Paper accepted for publication in the AIAA Journal of Spacecraft and Rockets
- 2016: Presented at the 2016 AAS/AIAA Space Flight Mechanics Meeting
- 2015: Awarded the Space Automation and Robotics Technical Committee Best Presentation at the 2015 AIAA Region 1 Young Professional, Student, and Education Conference
- 2015: Graduate Aerospace Intern, The Aerospace Corporation
- 2015: Presented at the 2015 AAS/AIAA Space Flight Mechanics Meeting
- 2014-2016: Research Assistant for the Penn State Applied Research Lab



67th International Astronautical Congress

Guadalajara, Mexico

September 26 – September 30, 2016

Student Researcher



Jendai Robinson

University of Cincinnati

Robin2jo@mail.uc.edu

Presentation:

Date: September 30, 2016

Time: 9:45

Room: Salon de Eventos 1

Research Title:

Employment of Vertically Aligned Carbon Nanofiber Arrays for Lead Detection by Anodic Stripping Voltammetry

Biographical Sketch

Jendai Robinson holds a Bachelor of Science degree in chemistry from Virginia State University and is currently a Ph.D. candidate and NASA Harriet G. Jenkins Fellow at the University of Cincinnati (UC). She has completed several internships, many of which with NASA.

Jendai is currently working on the fabrication and characterization of plasmonic and electrochemical biosensors with Drs. Laura Sagle and Jessica Koehne in the Department of Chemistry at UC and Center for Nanotechnology at the NASA Ames Research Center. Her work can be applied to medical diagnostics as well as astronaut health and environmental monitoring.

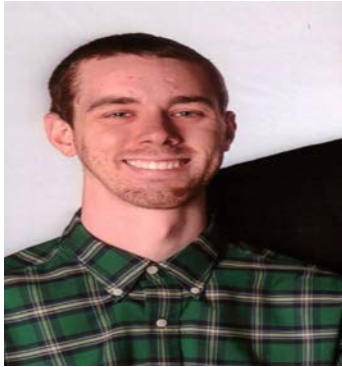
Research and Education Activities

- August 2013-Present: NASA Harriet G. Jenkins Fellowship
- June 2013-August 2013: Intern: NASA Goddard Space Flight Center
- January 2013- April 2013: Intern: NASA Ames Research Center
- June 2012- August 2012: Intern: NASA/EPA Academy Intern
- September 2011-December 2011: Intern: NASA Ames Research Center
- December 2012-Present: NASA Student Ambassador



67th International Astronautical Congress

Guadalajara, Mexico
September 26 – 30, 2016
Student Researcher



Peter Zane Schulte
Georgia Institute of Technology
pzschulte@gatech.edu

Interactive Presentation:

Date: September 28, 2016
Time: 13:15
Room: To be determined

Research Title:

Development of a Fault Protection
Architecture Based Upon State Machines

Biographical Sketch

Peter is currently a fourth year graduate student and National Science Foundation Fellow at the Georgia Institute of Technology majoring in Aerospace Engineering. Peter is a PhD candidate in the Space Systems Design Laboratory under advisor Dr. David Spencer. His research career began as an undergraduate at The University of Texas at Austin, where he was involved in student satellite projects Bevo-1 and FASTRAC. His Master's research at Georgia Tech involved development, integration, and testing of an autonomous Guidance, Navigation, & Control (GN&C) subsystem for the Prox-1 student satellite project. His PhD topic involves fault protection for aerospace vehicles.

Research and Education Activities

- 2013-present: National Science Foundation Fellow and Georgia Tech President's Fellow, Space Systems Design Laboratory, Georgia Institute of Technology
- 2015-2016: Visiting Researcher, FalconViz, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia
- 2014: International Space Education Board Sponsored Student, IAC 2014, Toronto, Canada
- 2014: Summer Intern, NASA Johnson Space Center, GN&C Development and Test Branch
- 2013: Summer Intern, NASA Johnson Space Center, Odyssey Space Research
- 2012: Cooperative Education Student Achievement Award, Cooperative Education and Internship Association
- 2011-2012: Co-op Student, NASA Johnson Space Center, Jacobs Technology
- 2010,2012: Columbia Crew Memorial Scholarship, Texas Space Grant Consortium
- 2010: Summer Intern, NASA Johnson Space Center, Extra-Vehicular Activity Office
- 2008-2013: Undergraduate Researcher, Satellite Design Laboratory, The University of Texas at Austin
- 2007: High School Aerospace Scholar, NASA Johnson Space Center



67th International Astronautical Congress

Guadalajara, Mexico

September 26 – September 30, 2016

Student Researcher



Jackelynnne Silva-Martinez

Georgia Institute of Technology

jackelynnesm@yahoo.com

Presentation:

Date: September 27, 2016

Time: 14:45

Room: TBD

Research Title:

We are on Mars! How do we Fix our Habitat?

Biographical Sketch

Jackelynnne worked for Lockheed Martin Space Systems as a Mechanical Engineer and Systems Integration & Test Engineer for GPSIII and other satellite programs. She then worked at Jet Propulsion Laboratory performing verification and validation ground tests for the Mars Science Laboratory mission. She currently works at NASA Johnson Space Center on the Flight Operations Directorate.

She graduated from Rutgers University as a Mechanical and Aerospace Engineer, obtained a Master's Degree in Aeronautical Science Human Factors from Embry-Riddle Aeronautical University, and currently completing a second Master's Degree in Aerospace Engineering Space Systems at the Georgia Institute of Technology.

Research and Education Activities

- 2015-Present: NASA Pathways Graduate Intern
- 2015 Space Studies Program, International Space University
- 2015-Present: Planetary Defense: Roadmap for earth Defense Initiatives Researcher
- 2015-Present: Remotely Guided Sonography for Long Term Space Missions Researcher
- 2014-Present: AIAA Young Professionals Committee
- 2014-Present: Space Generation Advisory Council
- 2013-Present: IAF Workforce Development and Young Professionals Committee
- 2013-Present: Center of Science, Leadership, and Culture, Founder
- 2012-Present: Human Factors in Aerospace Systems Researcher
- 2012-2014: Lunar Exploration Architectures Researcher
- 2012 Certificate in Engineering Management, Drexel University
- 2010-Present: AIAA Space Architecture Technical Committee



67th International Astronautical Congress

Guadalajara, Mexico

September 26 – September 30, 2016

Student Researcher



Amy Swearer

University of Nebraska College of Law

amy.swearer@huskers.unl.edu

Biographical Sketch

Amy is currently a third year law student at the University of Nebraska College of Law, and graduated from the University of Nebraska with a Bachelor of Science degree in Criminal Justice and a minor in Psychology. She was a member of the 2015-2016 Nebraska Law team that finished as National Semi-Finalists at the Manfred Lachs Space Law Moot Court Competition, and plans to compete again this year. While Amy is relatively new to the world of space law, she looks forward to the opportunity to expand her knowledge base in this exciting area of law and international relations.

Research and Education Activities

- 2016-present: Executive Editor, Nebraska Law Review
- 2016-present: Member, University of Nebraska College of Law National Moot Court Team
- 2015-present: Member, University of Nebraska College of Law Manfred Lachs Space Law Moot Court Team (National Semi-Finalists)
- 2015-present: Law Clerk, Lancaster County Public Defender's Office
- 2014: Chancellor's Scholar, University of Nebraska



67th International Astronautical Congress

Guadalajara, Mexico
September 26 – September 30, 2016
Student Researcher



Brittany Zimmerman

University of North Dakota
zimmermanb@alumni.msoe.edu

Presentation:

Date: September 28, 2016

Time: 09:45

Room: Joya 1&2

Research Title:

Engineering Artificial Biospheres for Long-Duration Exploration in Space: Development of Plant Modules for Life Support Structures

Biographical Sketch

Brittany Zimmerman has a Bachelor of Science in Mechanical Engineering from the Milwaukee School of Engineering. She worked as an Aerospace Systems Engineer for several years before returning to the world of academia where she is currently finishing her thesis for her Master of Science in Space Studies degree. She is a key member in the school's rocketry team, leads the Dakota Space Society and can be found participating in volunteer and outreach activities weekly. Brittany is interested in engineering biospheres and life support systems for long-duration spaceflight with an emphasis on hybrid bioregenerative and physical-chemical systems.

Research and Education Activities

- *Research and Design of a Greenhouse Module* by Brittany Zimmerman (2014 - 2016)
- *Gondola LSS Design* by Brittany Zimmerman (2015)
- *Implications of the Outer Space Treaty on a Well-functioning Market* by B. Zimmerman (2015)
- *Mexican History and Involvement in the Space Industry* by Brittany Zimmerman (2015)
- *Development of Optimized Life Support Structures for Long-Duration Spaceflight* by Brittany Zimmerman, SpaceVision on November 15, 2015
- *Engineering Biospheres* by Brittany Zimmerman, Scholarly Forums on March 2, 2016
- *Bioregenerative Life Support Systems* by Brittany Zimmerman, EPSCoR on April 19, 2016
- *Development of Plant Modules as Life Support Means for Planetary Surface Operations in Space* by Brittany Zimmerman, Dr. Vadim Rygalov and Dr. Pablo de León.
- Certified Hypoxia training in the High Altitude Chamber (2016)
- Graduate Student of the Year (2016)
- Chapter VP of the Student for the Exploration and Development of Space (SEDS) (2014 - 2016)
- Technical Project Lead for the NASA Student Launch Rocket Competition (2015 - 2016)
- NASA Mars Assent Vehicle Competition (2015 - 2016)
- 1000th ARISS Call to ISS and Astronaut Tim Kopra (2016)
- ND Space Grant Consortium Classroom Teacher (2014 - 2016)
- Super Science Sunday Booth (2015)
- Introduce a Girl to Engineering (2007 - 2014)
- Science Week Booth and Presentation (2011 - 2014)
- Engineering Experience STEM Job Shadow Volunteer (2011 - 2014)
- Engineer Pen Pal with Elementary Students (2013 - 2014)
- Eastern Iowa Science and Engineering Fair Judge (2013)