

## Allison Anderson, Ph.D.

Assistant Professor  
Smead Department of Aerospace Engineering Sciences  
University of Colorado – Boulder

apanders@colorado.edu  
303 492 8511  
Updated Aug. 2018

### **Research Interests**

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Human spaceflight, human exploration, extreme environment physiology, aerospace biomedical engineering, spacesuit design, spaceflight associated neuro-ocular syndrome, behavioral health in isolated confined environments, alternative reality technologies, audiology and cochlear function, wearable sensor systems.

### **Education**

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Ph.D., Aerospace Biomedical Engineering, Massachusetts Institute of Technology, June 2014  
Thesis: *Understanding Human-Space Suit Interaction to Prevent Injury During Extravehicular Activity*  
Advisor: Prof. Dava Newman

M.S., Aerospace Engineering, Massachusetts Institute of Technology, February 2011

M.S., Technology Policy Program, Massachusetts Institute of Technology, February 2011  
Thesis: *Addressing Design Challenges in Mechanical Counterpressure Spacesuit Design and Space-Inspired Informal Education Policy*  
Advisor: Prof. Dava Newman

B.S., Astronautics Engineering, University of Southern California, December 2007  
Minor: Astronomy

### **Professional Experience**

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2017 - Present, Assistant Professor, Smead Department of Aerospace Engineering Sciences, CU – Boulder

2015 - 2016, Visiting Assistant Professor, Aerospace Engineering Sciences, CU - Boulder

2014 - 2016, NSBRI First Award Postdoctoral Research Fellow, Dartmouth College Geisel School of Medicine

2008 - 2014, Research Affiliate, Man Vehicle Laboratory, Massachusetts Institute of Technology

2007 – 2008 Systems Engineer and Research Consultant; Information Sciences Institute, Marina Del Rey, CA

### **Research and Professional Internships**

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2013, 2009 (Summer) Technology Development Intern; Dainese Research and Design, Morostica, Italy

2012 (Summer) Research Intern, Advanced Spacesuit Lab; Johnson Space Center, Houston TX

2011 (Summer) Space Studies Program, International Space University, Graduate

2010 (Summer) ExplorationWorks Museum of Science and Culture, Helena MT

2006-2004 Research Assistant; Combustion Physics Laboratory, Department of Mechanical Engineering, USC; Mentor: Dr. Paul Ronney

2006 (Summer) Northrop Grumman – Electronic Systems, Azusa, CA, Intern

2005, 2006 (Summer) Central Intelligence Agency, Washington DC, Intelligence Analyst Intern

### **Peer Reviewed Journal Publications**

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1. Masterova, K., **Anderson, A.**, Cowan, D., Fellows, A., Buckey, J., "Portable Autorefractors for Detecting Axial Length Changes in Space." *Aerospace Medicine and Human Performance*. 2018 Aug 1;89(8):724-730. doi: 10.3357/AMHP.5049.2018.

2. Buckey, J., Phillips, S., **Anderson A.**, Chepko, A., Archambault-Leger, V., Gui, J., Fellows, A. "Microgravity-Induced Ocular Changes are Related to Body Weight" *American Journal of Physiology-Regulatory, Integrative, and Comparative Physiology*. 2018 May 16. doi: 10.1152/ajpregu.00086.2018.
3. **Anderson, A.**, Butterfield, J., Subramanian, P., Clark, T. "Intraocular Pressure and Cardiovascular Alterations Investigated in Artificial Gravity as a Countermeasure to Spaceflight Associated Neuro-ocular Syndrome". *Journal of Applied Physiology* (1085). 10 May 2018
4. **Anderson, A.**, Mayer, M., Fellows, A., Cowan, D., Hegel, M., Buckey, J. "Relaxation with Immersive Natural Scenes Presented Using Virtual Reality" *Aerospace Medicine and Human Performance* 1:88(6): 520-526, June 2017. DOI: 10.3357/AMHP.4747.2017
5. C. Rieke, O. Clavier, L. Allen, **A. Anderson**, C. Brooks, A. Fellows, D. Brungart, J. Buckey. "Fixed-Level Frequency Threshold Testing for Ototoxicity Monitoring" *Ear and Hearing*, Mar 30, 2017. DOI: 10.1097/AUD.0000000000000433. (Nominated for *Best Paper*)
6. **Anderson, A.**, Babu, G., Swan, J., Phillips, S., Knaus, D., Toutain-Kidd, C., Zegans, M., Fellows, A., Gui, J., Buckey, J. "Ocular Changes Over 60 Minutes in Supine and Prone Postures" *Journal of Applied Physiology* (1985). May 2017. DOI: 10.1152/jappphysiol.00687.2016
7. **Anderson, A.**, Fellows, A., Binsted, K., Hegel, M., Buckey, J., "Autonomous, Computer-Based Behavioral Health Countermeasure Evaluation At HI-SEAS Mars Analog" *Aerospace Medicine and Human Performance* 2016; 87(11):912-920.
8. **Anderson, A.**, Swan J., Phillips, S., Knaus, D., Kattamis, N., Toutain-Kidd, C., Zegans, M., Fellows, A., Buckey, J., "Acute effects of changes to the gravitational vector on the eye" *Journal of Applied Physiology*, 120 (8) (April 15, 2016): 939-946
9. **Anderson, A.**, Menguc, Y., Wood, R., Newman, D., "Development of the Polipo Pressure Sensing System for Dynamic Space-Suited Motion" *IEEE Sensors Journal* 15 (11): 6229-6237. November 2015
10. **Anderson, A.**, Newman, D., Welch, R., "Statistical Evaluation of Causal Factors Associated with Astronaut Shoulder Injury in Space Suits" *Aerospace Medicine and Human Performance* 86 (7): 606-613. June 2015
11. **Anderson, A.**, Newman, D., "Pressure Sensing for In-Suit Measurement of Space Suited Biomechanics" *Acta Astronautica* 115. May 2015

### **Peer Reviewed Conference Publications**

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1. Huerta, R., Kerr, E., **Anderson, A.** "Mechanical Counterpressure and Gas-Pressurized Fusion Spacesuit Concept to Enable Martian Planetary Exploration". International Conference on Environmental Systems, Albuquerque, NM, July 2018.
2. Shen, Y., Boppana, A., Arquilla, A., **Anderson, A.** "Wearable Sensor Suit System for Quantifying Human-Spacesuit Interactions." IEEE Aerospace Conference, Big Sky MT, March 2018.
3. Buckey, J., Phillips, S., **Anderson, A.**, Chepko, A., Archambault-Legere, V., Masterova, K., Fellows, A., Cowan, D. "The Importance of Tissue Weight and Tissue Compressive Forces in Human Spaceflight" 68<sup>th</sup> International Astronautical Congress, International Astronautical Federation. Adelaide, Australia. 25-29 September, 2017.
4. **Anderson, A.**, Newman, D., "Pressure Characterization Between the Upper Body and Space Suit During Mission-Realistic Movements" IEEE Aerospace Conference, Big Sky MT, March 2015.
5. **Anderson A.**, Hilbert A., Bertrand P., Newman D., In-Suit Sensor System for Characterizing Human-Space Suit Interaction, International Conference on Environmental Systems, Tucson, AZ, July 2014.

6. Bertrand P., **Anderson A.**, Hilbert A., Newman D., Feasibility of Spacesuit Kinematics Characterization and Human-Suit Interactions, International Conference on Environmental Systems, Tucson, AZ, July 2014.
7. **Anderson A.**, A. Diaz, M. Kracik, G. Trotti, J. Hoffman, and D. Newman, "Developing a Spacesuit Injury Countermeasure System for Extravehicular Activity: Modeling and Analysis" International Conference on Environmental Systems 2012, San Diego, CA
8. **Anderson, A.**, J. Waldie, D. Newman, "Modeling and Design of a BioSuit Donning System" International Conference on Environmental Systems 2010, Barcelona, Spain
9. **Anderson, A.**, J. Turner, L. Gundersen, G. Trotti, D. Newman "Framework for Space-Inspired Informal Education Exhibits" International Conference on Environmental Systems 2010, Barcelona, Spain.
10. D. Barnhart, J. Kunc, **A. Anderson**, J. Cheng, O. Faghfoor, "Hands-On Space Flight Risk Reduction Training Through Ground Based Dynamic Flight Testing" International Astronautical Congress 2007, Hyderabad, India

### **Theses**

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1. **Anderson, A.** "Understanding Human-Space Suit Interaction to Prevent Injury During Extravehicular Activity" Doctoral Degree in Aerospace Biomedical Engineering, Massachusetts Institute of Technology. Advisor Prof. Dava Newman. June 2014
2. **Anderson, A.** "Addressing design challenges in mechanical counterpressure spacesuit design and space-inspired informal education policy" Masters Degree in Aerospace Engineering and Technology Policy, Massachusetts Institute of Technology. Advisor Prof. Dava Newman. February 2011

### **Presentations and Posters**

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1. Buckey, J., Phillips S., **Anderson A.**, Chepko A., Archambault-Leger V., Fellows A. "Pre-flight Body Weight Predicts Ocular Changes in Space" International Astronautical Congress, Bremen, Germany. October 2018. (Presentation)
2. Boppana, A., Arquilla, K., **Anderson, A.** "Measurement of Human-Spacesuit Contact Pressures Through a Wearable Sensing Garment." International Conference on Environmental Systems, Albuquerque, NM, July 2018. (Poster)
3. Shen, Y., Wood, S., **Anderson, A.** "Spacesuit Wearer Joint Kinematics Estimation Enabled by Inertial Measurement Unit Arrays" International Conference on Environmental Systems, Albuquerque, NM, July 2018. (Poster)
4. **Anderson, A.**, Cowan, D., Mupparaju, S., Fellows, A., Buckey, J. "Computer-Based Mental Health Resources in Isolated Confined Environments." Aerospace Medicine Association, Dallas, TX. May 2018 (Presentation)
5. **Anderson, A.**, Cowan, D., Fellows, A., Buckey, J. "Behavioral Health Research in Analog Environments: Opportunities and Challenges." Aerospace Medicine Association, Dallas, TX. May 2018 (Presentation)
6. Shen, Y., **Anderson, A.** "Characterization of Spacesuit Wearer Joint Kinematics Using Inertial Measurement Unit Arrays" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2018 (Poster)
7. **Anderson, A.**, Klaus, D. "Interactive Space Vehicle Design Tool with Virtual Reality" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2018 (Poster)
8. Boppana, A. **Anderson, A.** "Pressure Sensor Network to Quantify Spacesuit Contact Pressure" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2018 (Poster)
9. Arquilla, K., **Anderson, A.** "Development and Analysis of Wired Textile Prototypes for use in Wearable Sensor Systems" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2018 (Poster)

10. Phillips, S., **Anderson, A.**, Chepko, A., Archambault-Leger, V., Masterova, K., Fellows, A., Cowan, D., Buckey, J. "Unique Numerical Model Incorporating Tissue Weight and Tissue Compressive Forces for Modeling Microgravity Effects" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2018 (Poster)
11. Mupparaju, S., **Anderson, A.**, Cowan, D., Lam, Q., Gifford, S., Love, R., Florom-Smith, A., Fellows, A., Buckey, J. "Computer-Based Mental Health Resources in ICES: Comparison Between Canada Forces Station Alert and HI-SEAS IV" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2018 (Poster)
12. Cowan D., **A. Anderson**, J. Buckey, "Evaluation of Virtual Nature for Relaxation in Isolated, Confined Environments." Aerospace Medical Association, Denver, CO. May 2017 (Presentation).
13. **Anderson A**, C. Rieke, Fellows A, Buckey J. "Feasibility of DPOAE Mapping as an In-Flight Measure of Intracranial Pressure in Space." NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2017 (Presentation)
14. **Anderson A**, Fellows A, Phillips S, Chepko A, Archambault-Leger V, Kattamis N, Knaus, D, Zegans M, Buckey J. "Role of Cranial Venous Circulation in Microgravity-Associated Visual Changes." NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2017 (Presentation)
15. **Anderson A**, Cowan, D., Fellows AM, Binsted K, Hegel, MT, Buckey JC. "Autonomous Behavioral Health Countermeasures - Virtual Space Station". NASA Human Research Program. Investigators Workshop, Galveston, TX, Galveston, TX. 01/2017 (Poster)
16. Phillips S, Chepko A, Archambault-Leger V, Kattamis N, Knaus, D, **Anderson, A.** Zegans M, Buckey J. "Numerical modeling of the eye structure and the cerebrovascular/cerebrospinal circulation." NASA Human Research Program. Investigators Workshop, Galveston, TX, Galveston, TX. 01/2017 (Presentation)
17. **Anderson A**, Fellows AM, Hegel MT, Buckey JC. "Virtual reality with natural scenes to reduce stress in isolated confined environments". Joint Life Science Meeting (CNES, ESA, ISGP), Toulouse, France, 06/2016 (Presentation)
18. **Anderson A**, Fellows AM, Binsted K, Hegel, MT, Buckey JC. "Evaluation of an autonomous, computer-based, behavioral health countermeasure in an isolated, confined environment". Aerospace Medical Association. 87th Annual Scientific Meeting, 04/2016. (Presentation)
19. **Anderson A**, Fellows AM, Buckey JC. "DPOAE Mapping as a Measure of Cochlear Sensitivity to Postural Changes". Association for Research in Otolaryngology, 2/2016. (Poster)
20. **Anderson A**, Fellows A, Phillips S, Chepko A, Archambault-Leger V, Kattamis N, Knaus, D, Zegans M, Buckey J. "Role of Cranial Venous Circulation in Microgravity-Associated Visual Changes." NASA Human Research Program Investigators Workshop, Galveston, TX. 02/2016 (Presentation)
21. **Anderson A**, Fellows AM, Binsted K, Hegel, MT, Buckey JC. "Autonomous Behavioral Health Countermeasures - Virtual Space Station". NASA Human Research Program. Investigators Workshop, Galveston, TX, 02/2016. (Poster)
22. **Anderson A**, Fellows A, Buckey J. "Feasibility of DPOAE Mapping as an In-Flight Measure of Intracranial Pressure in Space." NASA Human Research Program Investigators Workshop, Galveston, TX. 02/2016 (Poster)
23. Phillips S, Chepko A, Archambault-Leger V, Kattamis N, Knaus, D, **Anderson, A.** Zegans M, Buckey J. "Numerical modeling of the eye structure and the cerebrovascular/cerebrospinal circulation." NASA Human Research Program. Investigators Workshop, Galveston, TX, Galveston, TX. 02/2016 (Presentation)
24. **Anderson A**, Abigail Fellows, Gautam Babu, Jacob Swan, Scott Phillips, Nicholas, Kattamis, Darin Knaus, Michael Zegans, Jay Buckey. "Ocular And Cerebrovascular

- Changes In Microgravity". Aerospace Medical Association Annual Meeting, Orlando, FL., 05/2015. (Presentation)
25. **Anderson, A.** Fellows, J. Buckey. "Feasibility Of DPOAE Mapping As An In-Flight Measure Of Intracranial Pressure In Space". NASA Human Research Program Investigators Workshop, 01/2015. (Poster)
  26. Newman, D.J., **Anderson, A.**, Diaz, A., Kracik, A., Hilbert, A., Bertrand, P., Hoffman, J., Trotti, G., "Spacesuit Trauma Countermeasures Research: Injury Prevention and Comfort Protection Design", NASA Human Research Program Investigators Workshop, Galveston, TX, 02/2014. (Presentation)
  27. **Anderson A.**, Hilbert A., Bertrand P., Newman D., "Space Suit Trauma Countermeasure System: Pressure Sensing Capability for In-Suit Characterization", NASA Human Research Program Investigators Workshop, Galveston, TX, 02/2014. (Poster)
  28. Hilbert A., Diaz A., **Anderson A.**, Newman D. J., "Human-Space Suit Interaction: Musculoskeletal Modeling & Statistical Analysis of Injuries", NASA Human Research Program Investigators Workshop, Galveston, TX, 02/2014. (Poster)
  29. **Anderson, A.**, Menguc, Y., Wood, R., Newman, D.J., "Hyperelastic Pressure Sensor Development For Use in Extravehicular Mobility Unit" IAA Humans in Space Conference, Cologne Germany 07/2013. (Poster)
  30. Diaz, A., **Anderson, A.**, Hoffman, J., Newman D. J., "Modeling Musculoskeletal Human-Spacesuit Interaction", International Astronautical Association (IAA) Humans in Space Conference, Cologne Germany 07/2013. (Presentation)
  31. **Anderson A.**, A. Diaz, M. Kracik, G. Trotti, J. Hoffman, D. J. Newman "Understanding Human-Space Suit Interaction to Prevent Injury During Extravehicular Activity" NASA Human Research Program Investigator's Workshop 2013, Houston. (Poster)
  32. A. Diaz, **A. Anderson**, M. Kracik, G. Trotti, J. Hoffman, D. J. Newman "Development of a Musculoskeletal Human-Space Suit Interaction Model" NASA Human Research Program Investigator's Workshop 2013, Houston. (Poster)
  33. **Anderson, A.**, D. Newman, "Developing a Spacesuit Injury Countermeasure System for Extravehicular Activity" International Conference on Environmental Systems 2012, San Diego. (Poster)
  34. **Anderson, A.**, D. Newman, "Modeling Astronaut-Spacesuit Interaction To Develop a Spacesuit Trauma Countermeasure System for Extravehicular Activity" NASA Human Research Program Investigator's Workshop 2012, Houston. (Poster)
  35. **Anderson A.**, A. Diaz, M. Kracik, R. Kobrick, G. Trotti, J. Hoffman, and D. Newman, "Methodology Toward Developing a Spacesuit Trauma Countermeasure System for Extravehicular Activity" NASA Human Research Program Investigator's Workshop 2012, Houston. (Poster)
  36. **Anderson, A.**, M. Kracik, G. Trotti, D. Newman, "Preliminary Astronaut Injury Countermeasure and Protection Suit Design." IAA Humans Space Conference 2011, Houston. (Poster)
  37. **Anderson, A.**, S. Wilcox, E. Gundersen, G. Trotti, D. Newman, "Using Space-Inspired Education Tools to Enhance STEM Learning in Rural Communities" American Society of Engineering Education Annual Conference 2011. Vancouver, Canada (Presentation)

### **Teaching Experience**

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- F. 2018 Instructor ASEN 5519: Experimental Design and Statistical Analysis. University of Colorado Boulder. *Developed as a new course.*
- F. 2018 Instructor ASEN 2012: Experimental and Numerical Methods in Aerospace Engineering Sciences. University of Colorado Boulder. *Restructured curriculum.*
- Sp. 2018 Instructor ASEN 6519: Extravehicular Activity. University of Colorado Boulder. *Developed as a new course.*

F. 2017 Instructor ASEN 2012: Experimental and Numerical Methods in Aerospace Engineering Sciences. University of Colorado Boulder  
Sp. 2017 Instructor ASEN 5016: Space Life Sciences. University of Colorado Boulder  
2012 Grader Statistical Methods in Experimental Design, Department of Aerospace and Astronautics, Massachusetts Institute of Technology  
2010 Teaching Assistant; Space Biomedical Engineering and Life Support, Department of Aerospace and Astronautics, Massachusetts Institute of Technology

### **Student Advising**

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#### Primary advisor

Young-Young Shen, PhD Candidate  
Katya Arquilla, PhD Candidate, Draper Fellow  
Abhishektha Boppana, PhD Candidate, NSF Graduate Research Fellow  
Arthur Barriault, PhD Candidate  
Michael Van Akin, PhD Candidate  
Sage Sherman, MS Candidate  
Roger Huerta Lluch, MS Candidate, Balsells Fellow

#### Thesis Committee member

Jordan Holquist, Ph.D., 2018, NASA Space Technology Research Fellow  
Conor Cullinane, Ph.D., 2018 (MIT)

### **Outreach Teaching Experience**

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2018 Guest lecture, "Aerospace Engineering Sciences @ CU Boulder", South Denver Chamber of Commerce  
2018 Guest lecture, "Human Exploration: Part 2" Pathway to Space, CU-Boulder Spacer Minor  
2018 Guest lecture, "Virtual Reality for Space and Earth" Tuskegee Airmen Mile High Flight Program  
2017-2018 Faculty Mentor, NASA SUITS Challenge: Augmented Reality Display for Extravehicular Activity  
2017-2018 Faculty Mentor, NASA Wearables Challenge: Automatic Boot Thermal Control  
2017-2018 Faculty Mentor, NASA Wearables Challenge: EMG for Extravehicular Activity  
2017 Podcast speaker, "You Make Me Sick: Humans in Space", Environmental Defense Fund  
2017 Invited lecture, University of Southern California, Department of Aerospace and Mechanical Eng., Seminar Speaker Series  
2017 Invited lecture, "Humans in Space!" CU-Boulder Spacer Minor  
2012 – 2013: Video maker; MIT K-12 Initiative (MIT)  
2011 – 2012: Lecturer; MOSTEC High School AeroAstro course (MIT)  
2008 – 2013: Instructor; SEED Academy High School AeroAstro course (MIT)  
2008 – 2013: Lecturer; Cambridge Science Festival, MIT Museum  
2010 Lecturer; Teacher Professional Development in Molecular Biology. "Radiation and Hazards to DNA in Space Travel"  
2010 Instructor; Science Camp, ExplorationWorks Museum of Science and Culture  
2010 Program Director; Girls Scouting Space and Sky, Girl Scouts of Massachusetts  
2009 Lecturer; Girls Angle Math Club for Girls  
2008 High School Teacher; Instituto Cardenal Rodriguez, Juticalpa, Honduras  
2005-2006 Tutor; Physics and Aerospace Engineering (USC)  
2003-2005 Tutor; Joint Educational Program (USC)

### **Service**

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2018 – 2019 Bioastronautics Focus Lead, Graduate Committee, Dept. of Aerospace Eng. Science, CU-Boulder

2017 Review editor, *Frontiers in Physiology: Environmental, Aviation, and Space Physiology*  
2017 Member, Aerospace Medicine Association  
2017 Graduate Women in Aerospace Conference Co-Organizer  
2015 – 2016 Board member, Headrest substance use disorder facility  
2012 – 2014 Graduate Resident Tutor, Baker House (MIT)  
2008; 2011 Representative; Graduate Aeronautics and Astronautics Association (MIT)  
2010 Student Organizer; MIT 150 Exploration Symposium (MIT)  
2009 Student Organizer; Apollo 40 Celebration (MIT)  
2009 Student Organizer; Sally Ride Festival (MIT)  
2007 Coordinator; W.V.T Rusch Engineering Honors Colloquium (USC)  
2003 – 2007 V-Key Managing Editor, Communications Manager, Representative; Viterbi Student Ambassadors (USC)

### **Grants and Fellowships**

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2018 IRT Multi-functional Materials. *Prototyping Support for Multi-functional Textiles Research*. **PI Allison Anderson** and Laura Devendorf (CU Boulder)  
2018 IRT Multi-functional Materials. *Multifunctional electronic skins for applications in prosthetics and spacesuits*. PI Jianliang Xiao, Wei Zhang, **Allison Anderson**, Jacob Segil (CU Boulder)  
2017-2018 NASA Human Research Program. *Interactive Space Vehicle Design Tool with Virtual Reality*. **PI Allison Anderson**  
2016-2017 NASA Human Research Program. *Quantifying and Preventing EVA Injury in Exploration Environments*. PI Prof. Jeff Hoffman, MIT  
2014-2016 National Space Biomedical Research Institute First Award Fellow. *Feasibility of DPOAE Mapping as an In-Flight Measure of Intracranial Pressure in Space*. **PI Allison Anderson**, Mentor Dr. Jay Buckey (Dartmouth College)  
2013 Whitaker International Summer Program Fellowship (MIT)  
2011 International Space University Tuition Scholarship (MIT)  
2010 NSF Graduate Research Fellowship Program (MIT)  
2009 MISTI International Travel Support (MIT)  
2008 MIT Presidential Fellowship (MIT)  
2005-2007 Achievement Award for College Scientists Scholarship (USC)  
2005-2006 Merit Research Award (USC)  
2004 Boeing Academic Scholarship (USC)  
2003-2004 Engineering Scholarship (USC)  
2003-2004 Trojan Scholarship (USC)

### **Honors and Awards**

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2016 Selected as a National Academy of Science New Leader in Space Science  
2014 Selected for Graduate Women in Aerospace Conference  
2014 Technical Communications Seminar, 1<sup>st</sup> Place (MIT)  
2013 Graduate Women of Excellence Award (MIT)  
2012 1<sup>st</sup> Place Poster, International Conference on Environmental Systems (MIT)  
2008 Man Vehicle Lab 'Sherry' Award (MIT)  
2006 Order of Troy (USC)  
2006 Blue Key Honor Society (USC)  
2006 Tau Beta Pi Engineering Honor Society (USC)  
2005 MDA 365 Leadership (USC)  
2004-2007 Engineering Honors Program (USC)  
2004 Alpha Lambda Delta Honor Society (USC)

### **Additional Certifications and Experience**

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1. SCUBA Certification – Basic (2002), Advanced (2010), Rescue (2017)
2. Parabolic Flight Experience –2009 Campaign, 1 day; 2015 Campaign, 4 days
3. Flight Experience – Private pilot (2016)
4. Geology field camp – 4 weeks, Mojave Desert (2014)
5. First Responder training – Medical Professional CPR and AED (2014), Emergency First Response (2017)
6. Isolated, Confined Environment – Canadian Forces Station Alert, 2 weeks December 2015, 2 weeks March 2016