Allison Hayman, PhD
Associate Professor, Smead Department of Aerospace Engineering Sciences
Adjunct Professor, Department of Integrative Physiology
Affiliated Faculty, Biomedical Engineering Program
Affiliated Faculty, Robotics Program
E: apanders@colorado.edu Ph: 303 492 8511
University of Colorado – Boulder
Updated January 2025

Research Interests

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

Education

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

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

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

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

Professional Experience

2024 – Present, Associate Professor, Smead Department of Aerospace Engineering Sciences, University of Colorado – Boulder

2024 – Present, Affiliated Faculty, Robotics Program, University of Colorado – Boulder

2019 – Present, Affiliated Faculty, Biomedical Engineering Program, University of Colorado – Boulder

2018 – Present, Adjunct Professor, Department of Integrative Physiology, University of Colorado – Boulder

2017 – 2024, Assistant Professor, Smead Department of Aerospace Engineering Sciences, University of Colorado – Boulder

2015 – 2016, Visiting Assistant Professor, Smead Department of Aerospace Engineering Sciences, University of Colorado - Boulder

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

2008 – 2014, Research Assistant, Man Vehicle Lab, Massachusetts Institute of Technology

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

Honors and Awards

2024 Selected National Research Council Research Associates Program, Air Force Research Lab, Albuquerque, NM

2024 Outstanding Mentor Award, CU SPUR program
2023 National Science Foundation CAREER Award
2023 Outstanding Faculty Mentor, Graduate School, CU Boulder
2022 Outstanding Mentor Award, CU SPUR program
2021 Junior Faculty of the Year, College of Engineering and Applied Sciences, University of Colorado Boulder
2021 Junior Faculty of the Year, Smead Department of Aerospace Engineering Sciences, University of Colorado Boulder
2020 Young Professional Engineer of the Year, AIAA Rocky Mountain Section
2020 Research and Innovation Office Faculty Fellow, campus-wide leadership program (cohort of 13 faculty)
2019 Outstanding Undergraduate Teaching and Mentorship Award, Smead Department of Aerospace Engineering Sciences
2016 Selected as a National Academy of Science New Leader in Space Science
2014 National Space Biomedical Research Institute First Award Fellow
2014 Selected for Graduate Women in Aerospace Conference
2014 Technical Communications Seminar, 1st Place (MIT)
2013 Graduate Women of Excellence Award (MIT)
2012 1st 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)

Peer Reviewed Journal Publications (H-Index: 19, i10-Index 34)

Dr. Hayman's students underlined
*Indicates shared authorship

1. Buchner, S., Wood, J., Rindfuss, A., Schaub, H., Anderson, A. *Impacts of 3D visualizations and virtual reality in display designs for remote monitoring of satellite operations*. Frontiers in Virtual Reality. (accepted)
2. Buchner, S. L., Kintz, J. R., Zhang, J. Y., Banerjee, N. T., Clark, T. K., **Hayman, A. P.** Assessing Physiological Signal Utility and Sensor Burden in Estimating Trust, Situation Awareness, and Mental Workload. *Journal Of Cognitive Engineering And Decision Making*, 20 pages. Jan. 2025 (online). doi:10.1177/15553434241310084
3. Hurd, V. S., Valle, M. D., Kravets, V. G., **Anderson, A.**, L., Le, N. -N., Kendall, J. L., . . . Riscinti, M. Artificial Intelligence Assistance in Point-of-Care Ultrasound Skill Retention for Novice Users in Space Medicine Scenarios. *Wilderness & Environmental Medicine*. Jan. 2025 (online). doi:10.1177/10806032241304441
4. Crum J, Spencer C, Doherty E, Richardson E, Sherman S, Hays AW, Saxena N, Niemeyer RE, **Anderson AP**, Ceko M, et. al. "Misinformation research needs ecological validity." Nature Human Behaviour (October 07, 2024). (Published online October 07, 2024)
5. Verniani A, Galvin E, Tredinnick S, Putman E, Vance EA, Clark TK, **Anderson AP.** "Features of adaptive training algorithms for improved complex skill acquisition." Frontiers In Virtual Reality. 5 (February 08, 2024): ARTN 1322656.
6. Almand A, Ko SY, Anderson A, Keller RJ, Zero M, **Anderson AP,** Laws JM, Lehnhardt K, Easter BD. A Qualitative Investigation of Space Exploration Medical Evacuation Risks. Aerospace Medicine and Human Performance. 94 (12) (December 2023): 875-886.

7. Sherman, S., Shen, Y.-Y., Gutierrez-Mendoza, D., Schlittenhart, M., Watson, C., Clark, T., **Anderson, A.** (2023). Additive Sensory Noise Effects on Operator Performance in a Lunar Landing Simulation. Aerospace Medicine and Human Performance. 94 (10). Pg. 770-779. Oct. 2023.
8. Sherman, S., Jonsen, A., Lewis, Q., Schlittenhart, M., Szafir, D., Clark, T. K., **Anderson, A.** (2023). Training augmentation using additive sensory noise in a lunar rover navigation task. Frontiers in Neuroscience, *17*, 1180314. https://doi.org/10.3389/fnins.2023.1180314
9. Sherman, S., Greenstein, M., Basner, M., Clark, T., **Anderson, A.** (2023). Effects of additive sensory noise on cognition. Frontiers in Human Neuroscience, *17*, 1092154. https://doi.org/10.3389/fnhum.2023.1092154
10. Zhang, J., **Anderson, A.** Performance Risks During Surface Extravehicular Activity and Potential Mitigation using Multimodal Displays. Aerospace Medicine and Human Performance. 94 (1), 34-41. January 2023
11. Brehm, P., **Anderson, A.** Modeling the Design Characteristics of Woven Textile Electrodes for Long-Term. ECG Monitoring. Sensors. 23 (2), 598. January 2023
12. Almand, A., **Anderson, A.**, Hitt, B., Sitko, J., Joy, R., Easter, B., Almand, E. The influence of Perceived Stress on Human Microbiome. BMC Research Notes. 15 (1). 1-6. December 2022
13. Kintz, J.R., Banerjee, N.T., Zhang, J.Y. **Anderson, A.P.,** and Clark, T.K. Estimation of Subjectively Reported Trust, Mental Workload, and Situation Awareness Using Unobtrusive Measures. Journal of Human Factors. November 2022. DOI: https://doi.org/10.1177/00187208221129371
14. Arquilla, K., Webb, A., **Anderson, A**. Utility of the Full ECG Waveform for Stress Classification. Sensors. 22, 18. pg. 7034. September 2022.
15. Lan, M., Van Akin, M., **Anderson, A.,** Buckey, J.C., Microgravity-Induced Reduced Jugular Vein Flow is More Pronounced on the Non-Dominant Side. Acta Astronautica. 198, 746-755. September 2022.
16. Boppana, A., Priddy, S., Stirling, L., **Anderson A.** Challenges in Quantifying Heel Lift in Spacesuit Gait. Aerospace Medicine and Human Performance. 93 (8), 643-648. August 2022
17. Van Akin M, Lantz O, Fellows A, Buckey J, **Anderson A.** Acute effects of postural changes and lower body positive and negative pressure on the eye. Frontiers in Physiology. Sec. Environmental, Aviation and Space Physiology. Volume 13 – 2022. Pg. 1685. Aug 2022
18. **Anderson, A.*,** Stankovic*, A., Cowan, D., Fellows, A., Buckey, J. Natural Scene Virtual Reality as a Behavioral Health Countermeasure in Isolated, Confined, and Extreme Environments: Three ICE Analog Case Studies. Human Factors and Ergonomics in Space Exploration. Journal of Human Factors and Ergonomics Society. 65 (6). May 2022. DOI: https://doi.org/10.1177/00187208221100693
19. Voros, J., Rise, R., Sherman, S., Durell, A., **Anderson, A.**, Clark, T., A Machine Learning Approach to Identify Stochastic Resonance in Human Perceptual Thresholds. Journal of Neuroscience Methods. 374, 109559. May 2022.
20. Arquilla K, Webb A, **Anderson A.** Isolation and Confinement Due to the COVID-19 Pandemic: Lessons from Human Spaceflight. Acta Astronautica. 196. 282-289. April 2022. https://doi.org/10.1016/j.actaastro.2022.04.026.
21. Arquilla, K., Devendorf, L., Webb, A., **Anderson, A.** Detection of the Complete ECG Waveform with Woven Textile Electrodes. Biosensors. 11(9), pg. 331. Sept. 2021 https://doi.org/10.3390/bios11090331
22. Banerjee N, Baughman A, Lin S, Witte Z, Klaus D, **Anderson A.** Side-by-Side Comparison of Human Perception and Performance in Augmented, Hybrid, and Virtual Reality. IEEE Transactions on Visualization and Computer Graphics. August, 2021. DOI: 10.1109/TVCG.2021.3105606

23. Banerjee NT, Baughman A, Lin S, Witte Z, Klaus DM, **Anderson AP**. Development of Alternative Reality Environments for Spacecraft Habitat Design Evaluation. Virtual Reality. 25 (2), 399-408. DOI: 10.1007/s10055-020-00462-6; June 2021
24. Boppana A, **Anderson A.** Dynamic foot morphology explained through 4D scanning and shape modeling. Journal of Biomechanics. 122 (9), 110465, June 2021. https://doi.org/10.1016/j.jbiomech.2021.110465
25. Voros J, Sherman S, Rise R, Kryuchkov A, Stine P, **Anderson A,** Clark T. Galvanic Vestibular Stimulation Produces Cross Modal Improvements in Visual Thresholds. Frontiers of Neuroscience. March 2021 https://doi.org/10.3389/fnins.2021.640984
26. **Anderson AP**, Boppana A, Wall R, Acemyan CZ, Adolf J, Klaus D. Framework for developing alternative reality environments to engineer large, complex systems. Virtual Reality. 25, pg. 147-163. March, 2021 DOI: 10.1007/s10055-020-00448-4.
27. Lan M, Phillips S, Archambault-Leger V, Chepko A, Lu R, **Anderson A**, Masterova K, Fellows A, Halter R, Buckey J. Proposed mechanism for reduced jugular vein flow in microgravity. Physiological Reports. 2021 Apr; 9(8):e14782. doi: 10.14814/phy2.14782
28. Arquilla K, Leary S, Webb A, **Anderson AP** Wearable 3-lead electrocardiogram (ECG) placement model for fleet sizing of medical devices. Aerospace Medicine and Human Performance. Aerospace Medicine and Human Performance. 91 (11), pp. 868-875(8). DOI: https://doi.org/10.3357/AMHP.5633.2020; November 2020
29. Lyons K, Slaughenhaupt R, Mupparaju S, Lim J, **Anderson AP**, Stankovic A, Cowan D, Fellows A, Binsted K, Buckey J. Autonomous Psychological Support for Isolation and Confinement. Aerospace Medicine and Human Performance. 91 (11), pp. 876-885(10). DOI: https://doi.org/10.3357/AMHP.5705.2020; November 2020
30. **Anderson AP,** Covington K, Rieke C, Fellows A, Buckey J. Detecting changes in distortion product otoacoustic emission maps using statistical parametric mapping and random field theory. The Journal of the Acoustical Society of America.147(5):3444–3453. DOI: 10.1121/10.0001235. April 2020
31. Arquilla K, Webb AK, **Anderson AP**. Textile electrocardiogram (ECG) electrodes for wearable health monitoring. Sensors. 20(4):1013. DOI:10.3390/s20041013. February 2020
32. Shen Y-Y, Ahmed NR, **Anderson AP**. Newton–Cotes Discretization for Improved Dead-Reckoning in Bayesian Estimators with Limited Sampling Rate. Journal of Guidance, Control, and Dynamics.43(4):831–837. January 2020
33. Boppana A, **Anderson AP**. DynaMo: Dynamic Body Shape and Motion Capture with Intel RealSense Cameras. Journal of Open Source Software.4(41):1466. DOI: 10.21105/joss.01466. September 2019
34. Stirling L, Arezes P, **Anderson AP.** Implications of Space Suit Injury Risk for Developing Computational Performance Models. Aerospace Medicine and Human Performance. 90(6):553–65. June 2019
35. Masterova KS, **Anderson AP**, Cowan DR, Fellows AM, Zegans ME, Buckey JC. Portable Autorefractors for Detecting Axial Length Changes in Space. Aerospace Medicine and Human Performance. 89(8):724–730. DOI: 10.3357/AMHP.5049.2018. August 2018
36. Buckey JC, Phillips SD, **Anderson AP**, Chepko AB, Archambault-Leger V, Gui J, Fellows AM. Microgravity-induced ocular changes are related to body weight. American Journal of Physiology-Regulatory, Integrative and Comparative Physiology. 315(3):R496–R499. DOI: 10.1152/ajpregu.00086.2018. May 2018
37. **Anderson AP**, Butterfield JS, Subramanian PS, Clark TK. Intraocular pressure and cardiovascular alterations investigated in artificial gravity as a countermeasure to spaceflight associated neuro-ocular syndrome. Journal of Applied Physiology.125(2):567–76. August 2018

38. **Anderson AP**, Mayer MD, Fellows AM, Cowan DR, Hegel MT, Buckey JC. Relaxation with Immersive Natural Scenes Presented Using Virtual Reality. Aerospace Medicine Human Performance. 88(6):520–6. DOI: 10.3357/AMHP.4747.2017. June 2017
39. Rieke CC, Clavier OH, Allen LV, **Anderson AP**, Brooks CA, Fellows AM, Brungart DS, Buckey JC. Fixed-Level Frequency Threshold Testing for Ototoxicity Monitoring. Ear and Hearing. DOI: 10.1097/AUD.0000000000000433. March 2017. (Nominated for *Best Paper*)
40. **Anderson AP**, Babu G, Swan JG, Phillips SD, Knaus DA, Toutain-Kidd CM, Zegans ME, Fellows AM, Gui J, Buckey JC. Ocular changes over 60 min in supine and prone postures. Journal of Applied Physiology. 123(2):415–23. DOI: 10.1152.japplphysiol.00687.2016. August 2017
41. **Anderson AP**, Fellows AM, Binsted KA, Hegel MT, Buckey JC. Autonomous, Computer-Based Behavioral Health Countermeasure Evaluation at HI-SEAS Mars Analog. Aerospace Medicine and Human Performance. 87(11):912–20. 2016
42. **Anderson AP**, Swan JG, Phillips SD, Knaus DA, Kattamis NT, Toutain-Kidd CM, Zegans ME, Fellows AM, Buckey JC. Acute effects of changes to the gravitational vector on the eye. Journal of applied physiology. jap 00730 2015. December 2015
43. **Anderson AP,** Menguc Y, Wood RJ, Newman D. Development of the Polipo Pressure Sensing System for Dynamic Space-Suited Motion. IEEE Sensors Journal. 15(11):6229–37. November 2015
44. **Anderson AP**, Newman DJ. Pressure sensing for in-suit measurement of space suited biomechanics. Acta Astronautica. 115:218–25. October 2015
45. **Anderson AP**, Newman DJ, Welsch RE. Statistical Evaluation of Causal Factors Associated with Astronaut Shoulder Injury in Space Suits. Aerospace Medicine and Human Performance. 86(7):606–613. May 2015

Under revision and review

1. Schauss, E., **Hayman, A.** Thermal control systems requirements for Martian spacesuit operations using analytical heat balance models. *In revision.*
2. Sherman, S., **Hayman, A.** Evaluation of Non-invasive Brain Stimulation Techniques for use on Long Duration Spaceflight Missions. *Under review.*
3. Richardson, E., Buchner, S., Kintz, J., Clark, T., **Hayman, A.** Operator-Agnostic and Real-Time Usable Psychophysiological Models of Trust, Workload, and Situation Awareness. *Under review.*
4. Buchner, S., Wood, J., Schauss, E., Bateman, B., Schaub, H., **Hayman, A.** Benefits of Virtual Reality and 3D Visualizations for Remote Satellite Supervisory Control. *Under review.*

Journal-Equivalent Peer Reviewed Conference Publications

Dr. Hayman's students underlined.

1. Schauss, G., Arquilla, K., **Anderson, A., "**ARGONAUT: An Inclusive Design Process for Wearable Health Monitoring". Computer Human Interaction (CHI) Conference on Human Factors in Computing Systems. New Orleans, May 2022. (25% acceptance rate)
2. Devendorf, L., Arquilla, K., Wirtanen, S., **Anderson, A.,** Frost, S. "Craftspeople as Technical Collaborators: Lessons Learned through an Experimental Weaving Residency." Computer Human Interaction, 2020. Honolulu, HI. 04/2020 *(Honorable Mention for Best Paper)*. (25% acceptance rate)

Peer Reviewed Conference Publications

Dr. Hayman's students underlined.

1. Zhang J, Kintz J, Banerjee N, Clark T, **Hayman A**. "Predicting Operator Situation Awareness from Psychophysiological Signal: Utility of Personalized and Universal Models."

IEEE International Workshop on Technologies for Defense and Security (TechDefense), November 11, 2024

2. Rote N, Kintz J, Erin R, **Allison H,** Clark T. "Improving Predictions of Cognitive States for an Adaptive Autonomous System." ASPIRE 2024 – The HFES Annual Meeting and Exhibition, September 09, 2024 - , September 09, 2024
3. Richardson E, Hurd V, Leary S, Weinberg A, Bonarrigo L, Obaid L, Storvick E, Panchal A, Futch N, Graeber A,… **Anderson A.** "NaviGATOR: An Informatics-Based Path Planning and Visualization Tool for Lunar Extravehicular Activity." International Conference on Environmental Systems, July 2024
4. Sherman S, Pischulti P, Hwang M, Berges M, Mohanty A, Gebraeel N, Ivey DB, Robinson SK, Klaus D, **Anderson A**. "A Development Framework for a Comprehensive Capstone which Demonstrates Human Interaction with Autonomous Habitat Technology." ICES-2024-439 International Conference on Environmental Systems (ICES), July 21, 2024 - July 25, 2024, July 23, 2024
5. Richardson E, Buchner S, Kintz J, Clark T, **Hayman A**. "Psychophysiological Models of Trust Workload, and Situation Awareness Can be Operator-Agnostic and Used in Real-Time." The 23rd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2024), May 06, 2024
6. Sung J, Leary S, Hurd VS, Lee C, Qin Y, Kong Z, Clark TK, **Anderson A**. "Operationally Realistic Human-Autonomy Teaming Task Simulation to Study Multi-Dimensional Trust." Human-Robot Interaction 2024 Companion 19th Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI), March 11, 2024 - March 15, 2024: ASSOC COMPUTING MACHINERY, 2024.1028-1032.
7. Kintz, J., Buchner, S., **Anderson, A.,** Clark, T. “Predicting Operator Cognitive States for Supervisory Human-Autonomy Teaming”. IEEE International Conference on Systems, Man, and Cybernetics. Maui, HI, October 2023.
8. Schauss, G., **Anderson, A.** “Heat Balance Model to Inform Requirements for Martian Spacesuit Architectures”. 52nd International Conference on Environmental Systems. Calgary, AB. July 2023.
9. Kintz, J., Shen, Y-Y., Buchner, S., **Anderson, A.,** Clark, T. “A Simulated Air Revitalization Task to Investigate Remote Operator Human-Autonomy Teaming with Communication Latency”. 52nd International Conference on Environmental Systems. Calgary, AB. July 2023.
10. Carroll, D., Dansereau, S., Tvrdy, T., **Anderson, A.,** Robinson, S. “Implementing a Biorobotic Spacesuit Glove Solution to Optimize Crew Performance for Planetary Surface Operations”. 52nd International Conference on Environmental Systems. Calgary, AB. July 2023.
11. Schauss, G., Bellisle, R., Kothakonda, A., Newman, D., **Anderson, A.** “High Performance Mechanical Counter-Pressure Spacesuit Glove for Martian Surface Exploration”. 51st International Conference on Environmental Systems. St. Paul, MN. July 2022.
12. Dansereau, S., Robinson, S., **Anderson, A.,** Carroll, D. “Utilization of Biomimicry and Wearable Sensors in Extramuscular Assisted Spacesuit Glove Design” AIAA Ascend. November 2021
13. Arquilla, K., **Anderson A.** Garment-integrated biosignal sensors for astronaut health during long-duration space missions. SpaceCHI, May 14-17 2021 (virtual)
14. **Anderson, A.,** Clark, T., & Kong, Z. Adaptive autonomy for future spacecraft habitats. International Conference on Social Robotics: Human Robot Interaction for Space Robotics Workshop, November 14–15. Golden, CO. 2020 (virtual)
15. Arquilla, K., Webb, A. K., **Anderson, A**. "Woven electrocardiogram (ECG) electrodes for health monitoring in operational environments", IEEE Engineering in Medicine and Biology Conference. Virtual. July 2020.

16. Boppana, A., **Anderson, A**. “A Biomechanical Design Framework to Improve Spacesuit Boot Fit.” 50th International Conference on Environmental Systems. Virtual. July 2020.
17. Shen, Y., Miller, J., **Anderson, A.** “Comfort, Mobility, and Durability Assessment of a Wearable IMU System for EVA Suits”. IEEE Aerospace Conference. Big Sky, MT. 03/2020.
18. Voros, J., Sherman, S., Rise, R., Callas, M., Kyruchkov, A., Stine, P., Rizkallah, J., **Anderson, A.,** Clark, T. “Multi-Modal Stochastic Resonance to Enhance Astronaut Perceptual Performance: Experimental Design”. IEEE Aerospace. Big Sky, MT. 03/2020.
19. Shen, Y., Wood, S., **Anderson, A.** “Evaluation of Wearable Inertial Sensors for Spacesuit Design Applications Using Hardware-in-the-Loop Simulation”. AIAA Scitech 2020 Forum. Orlando, FL. 01/2020
20. Shen, Y., **Anderson, A.** “Extended Kalman Filter for Magnetometer-Free Estimation of Spacesuit Wearer Joint Kinematics Using Inertial Measurements”. International Conference on Information Fusion, Ottawa, Canada. 07/2019.
21. Pinedo, C., Dixon, J., Chang, C., Auguste, D., Brewer, M., Jensen, C., Hill, C., Desilva, D., Jones, A., **Anderson A.,** Voss, J. “Development of an Augmented Reality System for Human Space Operations” International Conference on Environmental Systems, Boston, MA, 07/2019.
22. 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, 07/2018.
23. Shen, Y., Boppana, A., Arquilla, K., **Anderson, A.** “Wearable Sensor Suit System for Quantifying Human-Spacesuit Interactions.” IEEE Aerospace Conference, Big Sky MT, 03/2018.
24. **Anderson, A.,** Newman, D., “Pressure Characterization Between the Upper Body and Space Suit During Mission-Realistic Movements” IEEE Aerospace Conference, Big Sky MT, 03/2015.
25. **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, 07/ 2014.
26. Bertrand P., **Anderson A.,** Hilbert A., Newman D., Feasibility of Spacesuit Kinematics Characterization and Human-Suit Interactions, International Conference on Environmental Systems, Tucson, AZ, 07/2014.
27. **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, San Diego, CA. 07/2012.
28. **Anderson, A.,** J. Waldie, D. Newman, "Modeling and Design of a BioSuit Donning System" International Conference on Environmental Systems, Barcelona, Spain. 07/2010.
29. **Anderson, A.,** J. Turner, L. Gundersen, G. Trotti, D. Newman"Framework for Space-Inspired Informal Education Exhibits" International Conference on Environmental Systems, Barcelona, Spain. 07/2010.

Full Conference Publications (not peer reviewed)

1. Leary S, Sung J, Qin Y, Kong Z, Clark T, **Hayman A.** "Validating Rapid Trust Measurements in Spaceflight-Relevant Human-Autonomy Teaming Applications." (27th IAA Symposium on Human Exploration of the Solar System joint session within the 75th International Astronautical Congress (IAC)), October 14, 2024
2. Buchner S, **Anderson A.** "Virtual Reality Displays for Spaceflight Operations and Training." IAF Space Operations Symposium (IAF Space Operations Symposium, Held at the 75th International Astronautical Congress (IAC 2024), October 14, 2024 - October 18, 2024): International Astronautical Federation (IAF), 2024.485-494.

3. Putman, E., Boppana, A., Clark, T., **Anderson, A.** “Adaptive Training Using Virtual Reality for Entry, Descent, and Landing During Long Duration Exploration Missions”. International Astronautical Congress. Paris. September 2022.
4. Dansereau, S., Carroll, D., Puhr, T., **Anderson, A.,** Robinson, S. “Electromyography-Driven Extramuscular-Assisted Spacesuit Glove Optimization and Integration”. International Astronautical Congress. Paris. September 2022.
5. Lan, M., Buckey, J., **Anderson, A.,** Van Akin, M. “Microgravity-Induced Jugular Vein Flow is More Pronounced on the Non-Dominant Side”. International Astronautical Congress. Dubai. October 2021
6. Van Akin, M., Buckey, J., **Anderson, A.** “Investigation of Spaceflight Associated Neuro-Ocular Syndrome Asymmetry through Asymetric Cranial Venous Modeling” International Conference on Environmental Systems, July 2021 (virtual)
7. 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” 68th International Astronautical Congress, International Astronautical Federation. Adelaide, Australia. 09/2017.
8. 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, Hyderabad, India. 2007.

Other Publications

1. Zero M, Easter B, **Anderson A**, Lehnhardt K. “Multidisciplinary Expertise for Exploration Medical System Design”. IEEE Potentials. 07/2020.
2. **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. 06/2014
3. **Anderson, A.** “Addressing design challenges in mechanical counterpressure spacesuit design and space-inspired informal education policy” Dual Masters Degree in Aerospace Engineering and Technology Policy, Massachusetts Institute of Technology. Advisor Prof. Dava Newman. 02/2011

Presentations and Posters

1. Bonarrigo, L., Putman, E., Rees, W., Peterson, B., Galvin, E., Verniani, A., Tredinnick, S., Sherman, S., Baldonado, K., Vance, E., Robinson, S., Szafir, D., Clark, T., Anderson, A., “Development and Assessment of a Virtual Reality Trainer for Long Duration Spaceflight” Aerospace Medicine Association Annual Scientific Meeting. Chicago, IL. May 2024 (Presentation)
2. Leary, S., Sung, J., Hurd, V., Lee, C., Qin, Y., Kong, Z., Clark, T., Anderson, A. “Space-Relevant Human-Autonomy Teaming Task to Study the Multi-Dimensional and Dynamic Nature of Trust” Aerospace Medicine Association Annual Scientific Meeting. Chicago, IL. May 2024 (Presentation)
3. O’Brien, A., Anderson, A., Easter, B., Anderson, A. “Novel Educational Approach Impacting Future Human Spaceflight Engineers and Clinicians” Aerospace Medicine Association Annual Scientific Meeting. Chicago, IL. May 2024 (Poster)
4. Anderson, A., Putman, E., Sherman, S., Bonarrigo, L., Galvin, E., Verniani, A., Treddinick, S., Baldonado, K., Vance, E., Robinson, S., Szafir, D., Clark, T. “Trinity: Multi-Environment Virtual Trainer for Long-Duration Exploration Missions" NASA Human Research Program Investigators Workshop. Galveston, TX, January 2024
5. Kurtin, S., Anderson, A. "Longitudinal Investigation of Human Trust in Autonomy for Operational Environments" NASA Human Research Program Investigators Workshop. Galveston, TX, January 2024

6. Richardson, E., Buchner, S., Anderson, A. “Transferability of Physiological Models of Human Trust, Workload, and Situation Awareness” NASA Human Research Program Investigators Workshop. Galveston, TX, January 2024
7. Bonarrigo, L., Putman, E., Rees, W., Peterson, B., Li, I., Sherman, S., Clark, T., Szafir, D., Anderson, A. “Quantifying Neural Activation During Spaceflight-Relevant Virtual Reality Training” NASA Human Research Program Investigators Workshop. Galveston, TX, January 2024
8. Leary, S., Sung, J., Hurd, V., Lee, C., Clark, T., Anderson, A., “Metrics and Models to Infer Trust in Human-Autonomy Teaming” NASA Human Research Program Investigators Workshop. Galveston, TX, January 2024
9. Haynie, K., Harvey, J., Putnam, E., Tossell, C., Anderson, A. "Evaluating Virtual Reality Training Strategies for Long-Duration Exploration Missions" NASA Human Research Program Investigators Workshop. Galveston, TX, January 2024
10. Sherman, S., Anderson, A., “A Trade Study of Non-Invasive Brain Stimulation Techniques for Use in Long Duration Spaceflight Missions” NASA Human Research Program Investigators Workshop. Galveston, TX, January 2024
11. Hurd, V., Del Valle, M., Kravets, V., Riscinti M., Anderson, A. “Skill Retention Using AI-Assisted Point-of-Care Ultrasound in Novice, Technically Competent Users” NASA Human Research Program Investigators Workshop. Galveston, TX, January 2024
12. Elston, J., Richardson, E., Anderson, A. “Dimensionality Reduction Methods for Modeling Operator Cognitive States” NASA Human Research Program Investigators Workshop. Galveston, TX, January 2024
13. Buchner, S., Abeson, N., Wood, J., Schaub, H., Anderson, A. “Integrated Virtual Reality Visualizations and Information Display to Understand Uncertainty in Training for Spaceflight and Operations” Aerospace Medicine Association Annual Scientific Meeting. New Orleans, LA. May 2023 (Presentation)
14. Easter, B., Anderson, Ar., Lemery, J., Anderson, A. “Developing Engineering Skills for Future Human Spaceflight Clinicians” Aerospace Medicine Association Annual Scientific Meeting. New Orleans, LA. May 2023 (Presentation)
15. Verniani, A., Putman, E., Boppana, A., Peterson, B., Tredinnick, S., Galvin, E., Vance, E., Clark, T., Anderson, A. “Efficacy of Adaptive Algorithms for Training in Virtual Reality” Aerospace Medicine Association Annual Scientific Meeting. New Orleans, LA. May 2023 (Presentation)
16. B. De Figueiredo, S. Sherman, A. P. Anderson. Evaluating Cortical Mechanisms Behind Stochastic Resonance. NASA Human Research Program Investigator's Workshop. Galveston, TX January 2023
17. E. Richardson, S. L. Buchner, A. P. Anderson. Physiological Modeling of Trust, Workload, and Situation Awareness of Remote Spacecraft Operators. NASA Human Research Program Investigator's Workshop. Galveston, TX January 2023
18. Schauss, G and Anderson, A. Thermal Modeling of Alternative Spacesuit Concepts for Martian Surface Exploration. NASA Human Research Program Investigator's Workshop. Galveston, TX January 2023
19. S. L. Buchner, N. Abeson, J. Wood, H. Schaub, A. P. Anderson. Virtual Reality to Visualize and Display Uncertainty in Spaceflight Operations for Mission Control Personnel. NASA Human Research Program Investigator's Workshop. Galveston, TX January 2023
20. A. P. Anderson, E. Putman, W. Rees, B. Peterson, C. McVey, A. Verniani, M. Schlittenhart, M. Mayali, D. Szafir, T. K. Clark. Trinity: Multi-Environment Virtual Trainer for Long-Duration Exploration Missions. NASA Human Research Program Investigator's Workshop. Galveston, TX January 2023
21. Esther Putman, Abhishektha Boppana, Benjamin Peterson, Torin K. Clark, Allison P. Anderson. Immersive And Adaptive Training With Virtual Reality For Long Duration

Exploration Missions. NASA Human Research Program Investigator's Workshop. Galveston, TX January 2023

22. A. Verniani, E. Galvin, S. Tredinnick, E. Vance, A. P. Anderson. Evaluating Astronaut Training Algorithms in Virtual Reality for Long-Duration Exploration Missions. NASA Human Research Program Investigator's Workshop. Galveston, TX January 2023
23. Buchner, S., Kintz, J., Zhang, J., Banerjee, N., Clark, T., Anderson, A. Co-Estimates of Mental Workload and Situation Awareness Through Biosignal Monitoring in Human-Autonomy Teaming. American Human Factors and Ergonomics Society. New York City, July 2022 (Presentation)
24. Anderson, A., Boppana, A., Putman, E., Lewis, Q., Peterson, B., Clark, T. Trinity Virtual Reality Training Environment and Adaptive Training Algorithm for Long Duration Human Spaceflight. Aerospace Medicine Association Annual Scientific Meeting. Reno, NV. May 2022 (Presentation)
25. Walthall, S., Loesch, A., Dixon, J., Lee, Z., Gammon, A., Anderson, A., Advanced Heads Up Display Technology for Enhancing Human Performance in Complex Extravehicular Activity Operations. Aerospace Medicine Association Annual Scientific Meeting. Reno, NV. May 2022 (Poster)
26. Carroll, D., Dansereau, S., Anderson, A., Segil, J., Robinson, S. Novel Extramuscular Augmented Spacesuit Glove Design for Mitigation of Injury and Fatigue. Aerospace Medicine Association Annual Scientific Meeting. Reno, NV. May 2022 (Presentation)
27. Boppana, A., Putman, E., Anderson, A. Dynamic Virtual Reality Training Algorithm for Long Duration Exploration Missions. NASA Human Research Program Investigator’s Workshop. February 2022. Virtual (Poster)
28. Putman, E., Boppana, A., Clark, T., Anderson A. Multi-Environment Adaptive Virtual Reality Training as a Potential Countermeasure for Spaceflight Associated Neuroplasticity. NASA Human Research Program Investigator’s Workshop. February 2022. Virtual (Poster)
29. Shen, Y., Anderson, A. Validation of Custom Magnetometer-Free Wearable Sensor System for Human Motion Capture Inside Spacesuits. NASA Human Research Program Investigator’s Workshop. February 2022. Virtual (Poster)
30. Schauss, G., Arquilla, K., Anderson, A. Mitigating Motion Artifact in ECG Garments for Real Time Health Monitoring. NASA Human Research Program Investigator’s Workshop. February 2022. Virtual (Poster)
31. Sherman, S., Greenstein, M., Clark, T., Anderson, A. Investigating Cognitive Enhancement with Stochastic Resonance. NASA Human Research Program Investigator’s Workshop. February 2022. Virtual (Poster)
32. Anderson, A., Boppana, A., Putman, E., Lewis, Q., Peterson, B., Clark, T. Trinity: Multi-Environment Virtual Trainer for Long Duration Exploration Missions. NASA Human Research Program Investigator’s Workshop. February 2022. Virtual (Poster)
33. Anderson, A., Sherman, S., Jonsen, A., Durell, A., Gutierrez Mendoza, D., Lewis, Q., Schlittenhart, M., Watson, C., Basner, M., Clark, T. Investigating Stochastic Resonance as a Countermeasure for Human Performance Degradation in Spaceflight. NASA Human Research Program Investigator’s Workshop. February 2022. Virtual (Presentation)
34. Kintz, J., Banerjee, N., Anderson, A., and Clark, T.K. Estimation and Prediction of Operator Cognitive States based on Embedded Measures of Trust, Mental Workload, and Situation Awareness. Aerospace Medical Association Annual Scientific Meeting, Denver, CO. August 2021 (Presentation)
35. Zhang, J.Y., Banerjee, N., Kintz, J., Clark, T.K., and Anderson, A.P. Validation and Estimation of Human Cognitive State through Psychophysiological Signal Analysis for Aerospace Systems. Aerospace Medical Association Annual Scientific Meeting, Denver, CO. August 2021 (Presentation)

36. Van Akin, M., Lantz, O., Fellows, A., Buckey, J., Anderson, A. Acute Effects of Postural Changes and Lower Body Positive and Negative Pressure on the Eye. Aerospace Medical Association Annual Scientific Meeting, Denver, CO. August 2021 (Presentation)
37. Boppana, A., Anderson A. Novel Spacesuit Boot Design Developed from Dynamic Foot Shape Modeling. Footwear Science. Virtual. July 2021 (Presentation)
38. Clark, T., Sherman, S., Rise, R., Voros, J., Durell, A., Greenstein, M., Gutierrez-Mendoza, D., Jonsen, A., Kryuchkov, A., Schlitenhart, M., Watson, C., Anderson, A. Cross-Modal and Multi-Modal Stochastic Resonance to Enhance Crew Perception as a Countermeasure for Performance Degradation. NASA Human Research Program Investigator's Workshop. February 2021. Virtual (Presentation)
39. Rise, R., Jonsen, A., Durell, A., Anderson, A., Clark, T. Identifying Stochastic Resonance in Perceptual Threshold Estimation Performance. NASA Human Research Program Investigator's Workshop. February 2021. Virtual (Poster)
40. Sherman, S., Greenstein, M., Clark, T., Anderson, A. Cognitive Performance Enhancement with Stochastic Resonance. NASA Human Research Program Investigator's Workshop. February 2021. Virtual (Poster)
41. Boppana, A., Anderson, A. Dynamic Body-Shape Models to Reduce Risk of EVA Spacesuit Injury. NASA Human Research Program Investigator's Workshop. February 2021. Virtual (Poster)
42. Arquilla, K., Webb, A., Anderson, A. Coping with the COVID-19 Pandemic and the Influence of Prior Experience in Isolation and Confinement: Lessons for Human Spaceflight. NASA Human Research Program Investigator's Workshop. February 2021. Virtual (Poster)
43. Banerjee, N., Kintz, J., Zhang, J., Clark, T., Anderson, A. Real-Time Psychophysiological Quantification of Cognitive State in Spacecraft Cockpit Simulation. NASA Human Research Program Investigator's Workshop. February 2021. Virtual. (Poster)
44. Shen, Y., Anderson, A. Magnetometer-Free Inertial Sensing Techniques for Human Motion Capture Inside Spacesuits. NASA Human Research Program Investigator's Workshop. February 2021. Virtual (Poster)
45. Leary, S., Arquilla, K., Anderson, A. (2021, February 1-4) Design and Development of an Standardized Electrocardiogram (ECG) Electrode Placement Tool. NASA Human Research Program Investigator's Workshop. February 2021. Virtual (Poster)
46. Zhang, J., Anderson, A. A Framework for a Conceptual Multimodal Display for Surface Extravehicular Activity. NASA Human Research Program Investigator's Workshop. February 2021. Virtual (Poster)
47. Anderson, A., Interdisciplinary Education in Aerospace Engineering. Panel title: The Inter-Disciplinary Revolution: Evolving a New Mindset for Solving Real-World Problems. Forum 360 Panel. AIAA SciTech January 2021. Virtual (Presentation)
48. Zea L, Forward T, Kaksonen A, Anderson A. "Crew-Tended Biomining Research on the Lunar Surface." Lunar Science Surface Workshop. Virtual. May 2020 (Presentation)
49. Anderson, A., Rise, R., Sherman, S., Voros, J., Callas, M., Kryuchkov, A., Stine, P., Clark, T. "Performance Enhancement Through Multi-Modal Stochastic Resonance". NASA Human Research Program Investigators Workshop. Galveston, TX. January 2020 (Presentation)
50. Arquilla, K., Webb, A., Anderson, A. "Woven Textile Electrodes for Wearable Psychological Sensors in Extreme Environments". NASA Human Research Program Investigators Workshop. Galveston, TX. January 2020 (Presentation)
51. Anderson, A, Banerjee, N., Boppana, A., Baughman, A., S. Lin, R. Wall, Z. Witte, D. Klaus "Spacecraft Habitat Design Evaluation Using Alternative Reality Technologies". NASA Human Research Program Investigators Workshop. Galveston, TX. January 2020 (Presentation)
52. Sherman, S., Kryuchkov, A., Stine, P., Clark, T., Anderson, A. "Auditory Stochastic

Resonance to Improve Perceptual Thresholds". NASA Human Research Program Investigators Workshop. Galveston, TX. January 2020 (Poster)

53. Voros, J., Callas, M., Anderson, A., Clark, T. "Galvanic Vestibular Stochastic Resonance to Improve Perceptual Thresholds". NASA Human Research Program Investigators Workshop. Galveston, TX. January 2020 (Poster)
54. Rise, R., Voros, J., Anderson, A., Clark, T. "Using Simulation to Improve Sensory Threshold Estimation on Two-Interval Stochastic Resonance Tasks". NASA Human Research Program Investigators Workshop. Galveston, TX. January 2020 (Poster)
55. Boppana, A., Priddy, S., Fineman, R., Stirling, L., Anderson, A."Quantifying the Heel Lift in Spacesuit Gait". NASA Human Research Program Investigators Workshop. Galveston, TX. January 2020 (Poster)
56. Baughman, A., Witte, Z., Anderson, A. "Evaluation of Virtual and Hybrid Reality Systems for Astronaut Training". NASA Human Research Program Investigators Workshop. Galveston, TX. January 2020 (Poster)
57. Clark, T.K., Anderson, A.P., Nabity, J.A., Braun, R., Banerjee, N.T., Eshima, S.P., Kintz, J.R., Rollock, A.E., Zaccarine, S., Pischulti, P.K., and Klaus, D.M. (2019, November 19) Smart Technology Infusion for Deep Space Exploration Habitats (conference presentation) 8th AIAA-RM Annual Technical Symposium, Boulder, CO.
58. Boppana, A., Anderson, A. "Development of a Dynamic 3D Scanning System with Multiple Intel RealSense Depth Cameras." International Society of Biomechanics, Kananaskis, Canada. 07/2019 (Presentation)
59. Boppana, A., Hoogkamer, W., Kram R., Anderson, A. "Using Dynamic Foot Morphology Data to Design Spacesuit Footwear". Footwear Science, Kananaskis, Canada. 07/2019 (Presentation). *Martyn Shorten Award for Innovation.*
60. Arquilla, K., Anderson, A., Webb, A. "Wearable Sensor System Architecture for Monitoring Long-Term Psychological Health." IEEE Engineering in Medicine and Biology Conference, Berlin, Germany. 07/2019. (Poster)
61. Bergman, E., Anderson, A., "Tatanka-II: A Terrestrial EVA Spacesuit Simulator" International Conference on Environmental Systems. Boston, MA. 07/2019 (Poster)
62. Van Akin, M., Anderson, A., "Design and Operation of a Multi-Functional Pressure Chamber for Human Spaceflight Research" International Conference on Environmental Systems. Boston, MA. 07/2019 (Poster)
63. Anderson A., Covington, K., Rieke, C., Fellows, A., Buckey, J. "Classification of Distortion Product Otoacoustic Emission Phase Maps" Aerospace Medicine Association Annual Meeting. Las Vegas, NV. 05/2019. (Presentation)
64. Anderson, A., Covington, K., Rieke, C., Fellows, A., Buckey, J. "Changes in Distortion Product Otoacoustic Emission Maps with Posture and Fluid Shift Using Statistical Parametric Mapping." Association for Research in Otolaryngology. Baltimore, MD. 02/2019 (Poster)
65. Anderson A., Banerjee N., Boppana A., Baughman A., Lin S., Witte Z., Wall R., Klaus D. "Spacecraft Habitat Design Evaluation Using Alternative Reality Technologies" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2019 (Presentation)
66. Buckey J., Phillips S., Anderson A., Chepko A., Archambault-Leger V., Fellows A. "Pre-flight Body Weight Predicts Ocular Changes in Space" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2019 (Poster)
67. Wood S., Shen Y., Anderson A. "Magnetometer-Free Characterization of Spacesuit Wearer Joint Kinematics Using Inertial and Strain Sensors" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2019 (Poster)
68. Banerjee N., Baughman A., Lin S., Witte Z., Klaus D., Anderson A. "Development of Alternative Reality Environments for Spacecraft Habitat Design Evaluation" NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2019 (Poster)

69. Anderson, A., Covington K.B., Rieke C., Fellows A., Buckey J. “Analysis of Distortion Product Otoacoustic Emissions with Changes in Posture and Fluid Shift.” NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2019 (Poster)
70. 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)
71. 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)
72. 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)
73. 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)
74. 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)
75. 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)
76. Anderson, A., Klaus, D. “Interactive Space Vehicle Design Tool with Virtual Reality” NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2018 (Poster)
77. Boppana, A. Anderson, A. “Pressure Sensor Network to Quantify Spacesuit Contact Pressure” NASA Human Research Program Investigators Workshop, Galveston, TX. 01/2018 (Poster)
78. 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)
79. 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)
80. 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)
81. Cowan D., A. Anderson, J. Buckey, “Evaluation of Virtual Nature for Relaxation in Isolated, Confined Environments.” Aerospace Medical Association, Denver, CO. May 2017 (Presentation).
82. 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)
83. 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)
84. 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)

85. 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)
86. 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)
87. 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)
88. 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)
89. 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)
90. 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)
91. 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)
92. 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)
93. 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)
94. 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)
95. 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)
96. 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)
97. 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)
98. 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)
99. 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)

100. 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)
101. 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)
102. Anderson, A., D. Newman, "Developing a Spacesuit Injury Countermeasure System for Extravehicular Activity" International Conference on Environmental Systems 2012, San Diego. (Poster)
103. 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)
104. 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)
105. Anderson, A., M. Kracik, G. Trotti, D. Newman, "Preliminary Astronaut Injury Countermeasure and Protection Suit Design." IAA Humans Space Conference 2011, Houston. (Poster)
106. 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 Engingering Education Annual Conference 2011. Vancouver, Canada (Presentation)

Teaching Experience

University of Colorado – Boulder

ASEN 6519: Extravehicular Activity. *Developed as a new course.* F. 2023, Sp. 2021, Sp. 2019, Sp. 2018

ASEN 4018/4028 Undergraduate Projects. *Advised teams and served on Project Advisory Board.* AY 22/23, AY 20/21

ASEN 5226: Medicine in Space and Surface Environments. *Developed as a new course. Co-Instruction with Emergency Medicine at CU-Anschutz Medical Campus.* Sp. 2024, 2023, 2022, 2020, Su. 2019

- *Course featured in Wired Magazine, Travel and Leisure, CU Anschutz Today, CU Boulder Today, Channel 9 News, Aerospace Medicine Association Newsletter, and Pres. Benson's farewell address to CU*

ASEN 5519: Experimental Design and Statistical Analysis. University of Colorado Boulder. *Developed as a new course.* Sp. 2020, F. 2018

ASEN 2012: Experimental and Numerical Methods in Aerospace Engineering Sciences. University of Colorado Boulder. *Restructured curriculum.* F. 2021, 2019, 2018, 2017

ASEN 5016: Space Life Sciences. University of Colorado Boulder. Sp. 2024, 2022, 2017

Student Research Advising

PhD Primary Thesis Advisor - Active

1. Savannah Buchner, exp. Spring 2025
2. Jayce Cuberovic, exp. Fall 2026
3. Erin Richardson, exp. Spring 2027, Amelia Earhart
4. Victoria Hurd, exp. Fall 2027, NASA NSTGRO
5. Luca Bonarrigo, exp. Fall 2028
6. Lisa Ventura, exp. Summer 2028, Air Force Scholar, Smead Scholar
7. Nicole Frey, exp. Spring 2030

PhD Primary Thesis Advisor - Graduated

1. Gabriella Schauss, PhD, Jan. 2025, GAANN Fellow
2. Esther Putman, PhD, Dec. 2023, NSF Graduate Research Fellow
3. Sage Sherman, PhD, July 2023
4. Abhishektha Boppana, PhD, 2022, NSF Graduate Research Fellow
5. Young-Young Shen, PhD, 2022
6. Katya Arquilla, PhD, 2021, Draper Fellow

PhD Secondary Advisor or Co-Advised

1. Nicole Rote, exp. Spring 2028, NSF GRFP
2. Jacob Kintz, PhD, 2024

Postdoctoral Researchers

1. Prachi Dutta, 2024-Present
2. Aaron Allred, 2024-Present
3. Sage Sherman, 2023-2024

MS Research Advisor

1. Abigail Rindfuss (Thesis), 2025
2. Charlie Priebe, 2024
3. Tucker Peyok, 2024
4. Sebastian Boysen, 2024
5. Sarah Leary, 2024
6. Samuel Kurtin, 2024
7. Alessandro Verniani, (Thesis), 2023
8. Peter Brehm, (Thesis), 2022
9. Neil Banerjee, 2021
10. Johnny Zhang, (Thesis), 2021
11. Michael Van Akin, 2020, NSF Graduate Research Fellow
12. Alexander Baughman, (Thesis), 2019
13. Amin Mody, (Thesis), 2019
14. Roger Huerta Lluch, (Thesis) 2019, Balsells Fellow
15. Arthur Barriault, MS, 2019
16. Joseph Butterfield, MS, 2018
17. Trevor Fritz, MS, 2018

Research Associates

1. Aadhit Gopinath

Thesis Committee Member

1. Amrita Singh, PhD Candidate, exp. 2027
2. Cara Spencer, PhD Candidate, exp. 2027
3. Taylor Lonner, PhD Candidate, exp. 2026
4. Santiago Huertas Gonzalez, MS, exp. 2025
5. Hunter Ray, PhD, exp. 2025
6. Kieran Smith, PhD Candidate, exp. 2025, Draper Fellow
7. Ulubilge Ulusoy, PhD Candidate, exp. 2025 (University of Southern California)
8. Lena Obaid, MS, 2024
9. Victoria Kravets, PhD, 2024
10. Aaron Allred, PhD, exp. 2024, NASA NSTGRO
11. Patrick Pischulti, PhD, 2024
12. Sophia Zaccarine, PhD, 2024
13. Michael Zero, PhD, 2024
14. Caroline Dixon, MS, 2023
15. Jamie Voros, MS, PhD, 2023, Zonta International Amelia Earhart Fellowship
16. Gregory Bales, PhD, 2023 (UC Davis)
17. Kipp Larson, PhD, 2023

18. Abby Rudakov, PhD, 2022
19. Alvaro Romero Calvo, PhD, 2022 Basells Fellow
20. Jordan Dixon, PhD, 2022, Draper Fellow
21. Jennifer Coulombe, PhD, 2021, (CU Boulder, Mechanical Engineering)
22. Katie Bretl, PhD, 2021, NASA Space Technology Research Fellow
23. Carlos Pinedo, PhD, 2021
24. Ryan Alcantra, PhD, 2021, (CU Boulder, Integrative Physiology)
25. Conor Cullinane, PhD, 2018 (MIT)
26. Jordan Holquist, PhD, 2018, NASA Space Technology Research Fellow
27. Sandra Tredennick, MS, 2023
28. Hunter Hatchell, MS, 2022
29. Kayla Pickel, MS, 2022
30. Saige Rose Drecksler, MS, 2022
31. Aaron Allred, MS, 2021, NASA NSTGRO
32. Ryan Griffith, MS, 2021
33. Rachel Rise MS, 2021, NSF Graduate Research Fellow
34. Kadambari Suri, MS, 2019
35. Andres Villani Davila, BS, 2021 (CU Boulder, Engineering Physics Dept.)
36. Kyle Sterns, BS, 2021 (CU Boulder, Integrative Physiology)
37. William Holsclaw, BS, 2018 (CU Boulder, History Dept.)

<u>Undergraduate Researchers</u>

1. Alyvia O'Brien
2. Noah Vavoso
3. Ryan Chen (YOU'RE@CU)
4. Saevar Rodine (SPUR)
5. Aaron Semones (DLA)
6. Matthew Bradford (SPUR)
7. Bashaier Jama (DLA)
8. Blake Bateman (SPUR)
9. Brandon Lee
10. Jessica Shoemaker (SPUR)
11. Loren Hill (SPUR)
12. Iris Li (DLA)
13. Benjamin Reynolds (DLA)
14. Evan Poon (DLA)
15. Divyanshi Mishra (SPUR)
16. Namita Nair
17. Joshua Elston (SPUR)
18. Noe Antillon (SPUR, Community College of Denver)
19. Sophia Ramsey
20. Abigail Rindfuss
21. Jaekeun Sung
22. Stella Cross
23. Kiah May
24. Barbara De Figueiredo (DLA, SPUR, UROP)
25. Max Mayali (DLA)
26. Noah Abeson (SPUR)
27. Caden McVey (SPUR)
28. Thomas Puhr
29. Lilly Allen
30. Ryan Slocum

31. Zoe Roy
32. Natalie Link
33. Avery Gillespie
34. Cody Wheeler
35. Benjamin Petersen (DLA)
36. Rachel Gardner (DLA)
37. Catherine Billings (SPUR)
38. Quinlin Lewis (SPUR)
39. Evelyn Clarke
40. Andres Davila (DLA, UROP)
41. Cody Watson (DLA)
42. Michael Schlittenhart (DLA)
43. Maya Greenstein
44. Daniel Mendoza
45. Abigail Durell
46. Anissa Becerra (UROP)
47. Anna Jonsen
48. Ashkan Bafti
49. Sarah Leary
50. Emma Markovich (UROP)
51. Ponder Stine (SPUR)
52. Maria Callas (UROP)
53. James Rizkallah (UROP)
54. Justin Miller (SPUR)
55. Steven Priddy (UROP)
56. Lucas Pereira (SPUR)
57. Jiabin Lin
58. Aleksander Kryuchkov (DLA)
59. Zoë Witte (UROP Team Grant)
60. Alexander Baughman (SPUR, UROP Team Grant)
61. Shu-Yu (Michelle) Lin (DLA)
62. Maureen McNamara (BSL)
63. Shaylah Wood (UROP)
64. Keith Blaine Covington (UROP)
65. Sevi Mit Senavinin (UROP)
66. Ryan Wall
67. Andrew Kerr (UROP)

Research and Professional Internships

2025 (Spring) Air Force Research Lab. National Research Council Research Associates Program, Albuquerque, NM
2024 (Fall) German Aerospace Center (DLR), :envihab bedrest sensorimotor study, Cologne, Germany
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

Service

National

2023 – Present: Associate Editor, Journal of Spacecraft and Rockets
2020 – Present: Member, Life Sciences and Biomedical Engineering Branch of ASMA
2017 – Present: Review editor, Frontiers in Physiology: Environmental, Aviation, and Space Physiology
2017 – Present: Member, Aerospace Medicine Association
2008 – Present: Member AIAA
2024 Veterans Affairs Research Review Section Member
2023 NSTGRO Fellowship Reviewer
2022 AIAA SciTech Session Organizer
2022 Scientific Advisory Board, Human-Centered Aerospace Systems and Sustainability Applications, American Human Factors Engineering Conference
2021 – 2022 AIAA Space Exploration Integration Technical Committee, member
2021 US Frontiers of Engineering organizing committee, National Academy of Engineering

CU System

2023 – 2024: AB Nexus Advisory Board
2022 – Present: Dual MD-MS Program in Medicine and Aerospace Engineering (Bioastronautics Focus), Aerospace Engineering Sciences Director

Campus

2023 Astronaut Scholarship selection committee
2022 – 2023 CU SEED Grant Reviewer
2020 – 2023 Faculty Affairs Advisory Board
2018 UROP Proposal Reviewer

College

2019 Taskforce on Mental Health and Wellness
2019 Biomedical Engineering Faculty Search Committee Member

Department

2023/24 Aerospace Engineering Faculty Search Committee Member, Space focus
2022 – 2024: Undergraduate Operations Committee
2022/23 Aerospace Engineering Faculty Search Committee Member, Bioastronautics focus
2018 – 2022 Bioastronautics Focus Lead, Graduate Committee, Dept. of Aerospace Eng. Science, CU-Boulder
2018 – 2020 – Executive Committee, Smead Department of Aerospace Engineering Sciences
2017, 2020 Graduate Women in Aerospace Conference Co-Organizer

Other

2019 – 2021 Co-Organizer of Faculty Sanity
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)

Outreach and Community Involvement

2019 – Present: Faculty Mentor, Aerospace Medicine Students and Residents Organization, CU Chapter (Includes Anschutz Medical Campus)
2024 Traveling Trunk Human Autonomy Teaming Demo, Skyline High School
2024 NASA HULC Student competition, Faculty Co-Advisor
2017 – 2023 Faculty Mentor, CU Technology for Extreme Environments Club, which participates in NASA SUITS Challenge
2023 Speaker for National Science Writers Conference
2022 Explorers Club, Rocky Mountain Chapter
2022 Colorado Business Outlook Forum, Panel Speaker
2022 Spacesuit Design, Girl Scouts, Superior Chapter
2022 Guest Speaker, Abacus Primary School, London UK
2022 Rising Stars in Aerospace, Symposium Organizer
2021 Freshman seminar, MIT Bioastronautics, Speaker
2021 American Corner – Spaceflight outreach in Chile, Speaker
2021 BME 100 Lecture on Bioastronautics
2021 Aerospace Movie Night – Gravity, Speaker on human spaceflight
2021 Women of Aerospace Engineering, Panel Speaker
2018 – 2021 Guest lecture, “Human Exploration: Part 2” Pathway to Space, CU-Boulder Space Minor
2020 Organized workshop on Lessons from Human Spaceflight and Resiliency in the Pandemic
2020 Faculty Mentor, New Shepard Competition student team
2020 CU Boulder NEXT, Speaker
2019 – 2020 Advisor, Colorado Space Grant AEGIS Suit Simulator Project
2019 TEDxMileHigh Speaker, delivered speech to 5,000 people, talk featured on TED.com
2019 Space Generation Advisory Council Health in Space Webinar
2019 Society for Women in Space Exploration, Panel Speaker
2019 Aerospace Graduate Student Organization Career in Academia Panel
2019 Humans in Space, Guest lecture in elementary school, Bogota, Colombia
2019 Human Performance Summit, Panel Speaker
2019 Aerospace & STEM Summit, panel member
2018 Aerospace Graduate Seminar Speaker
2018 Guest speaker, Altona Middle School, Colorado
2018 Guest lecture, “Aerospace Engineering Sciences @ CU Boulder”, South Denver Chamber of Commerce
2018 Guest lecture, “Virtual Reality for Space and Earth” Tuskegee Airmen Mile High Flight Program
2017 – 2018 Faculty Mentor, NASA Wearables Challenge: Automatic Boot Thermal Control
2017 – 2018 Faculty Mentor, NASA Wearables Challenge: EMG for Extravehicular Activity
2018 LEGO First Robotics, team science mentor
2017 Invited lecture, “Humans in Space!” CU-Boulder Spacer Minor
2012 – 2013 Video maker; MIT K-12 Initiative with over 1.8 million views (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
2004 – 2007 Spirits in Action, Special Olympics-like event hosted at USC, Director 2007, Donations lead 2006, and event organization team member 2004-2005
2005 – 2006 Tutor; Physics and Aerospace Engineering (USC)
2003 – 2005 Tutor; Joint Educational Program (USC)

Invited Seminars

2024 Technical University Munich, Human Spaceflight Course
2024 University of Bremen, ZARM Institute
2024 NATO Task Force on Cognitive Security, MURI Research Presentation
2023 International Space Medicine Summit, Human Spaceflight and Automation, Panel Speaker
2023 Princeton University, Department of Mechanical and Aerospace Engineering
2023 Institute of Cognitive Science Seminar
2023 UC Davis Biomedical Engineering Graduate Group, Keynote and Panel Speaker
2023 AFPEAT Aircrew Breathing System and Physiological Sensors Tech Days
2022 International Space Medicine Summit, Human Spaceflight and Automation, Panel Speaker
2022 SmartHab Workshop, Panel Speaker
2022 Texas A&M, Department of Aerospace Engineering, Research Seminar
2022 AIAA Rocky Mountain Chapter Meeting, Future Technology and Science Development, Panel Speaker
2022 711th Wing Physiological Events CoP
2022 American Society of Civil Engineering Annual Meeting
2022 FIDAE Space Summit
2022 CU Anschutz Aerospace Medicine Students and Residents Organization
2021 Human Spaceflight Symposium, Panel Speaker
2021 To the End of the Earth and Beyond: Space and Polar Medicine, Speaker
2021 Leadership Analyst Program, JP Morgan-Chase
2021 University of Colorado School of Medicine, Space Medicine Course
2021 University of Michigan, Department of Aerospace Engineering
2020 University of Michigan, Department of Industrial and Operations Engineering
2020 Program for Injury Prevention, Education, and Research, Colorado School of Public Health, UC Denver
2020 Blue Origin
2019 University of California – Davis, Department of Aerospace and Mechanical Engineering
2018 Integrative Physiology, University of Colorado Boulder
2018 Institute of Cognitive Science Colloquium, University of Colorado Boulder
2017 University of Southern California, Department of Aerospace and Mechanical Engineering

Grants and Fellowships

Current Funding

2024-2028 NASA Human Research Program, *Investigating countermeasures for communication delays through the Laboratory-based Exploration Mission Analog*. PI: Katya Arquilla. My role: Co-I. 3 other Co-I's
2024-2027 NASA Space Technology Graduate Research Opportunity. Awarded to PhD Candidate Victoria Hurd. My role: PI and Advisor
2023-2025 UCRO, Universities Space Research Association, Space Force. *xGEO Robust and Adaptive space Domain AwaReness (xRADAR).* PI: Black (Virginia Tech), My Role: Co-I. 5 other Co-I's.

2023-2026 Air Force Research Lab. *Physiologic Sensing: Maximizing Operational Value and Executability (psMOVE)*. My Role: PI.

2023-2024 SpaceWERX STTR, Space Force. *Uncertainty Visualization in Virtual Reality for ISAM Human-in-the-Loop Mission Training using High Fidelity Simulations.* PI: Ranjan (Gridraster), My Role: Institute PI. Co-I: Hanspeter Schaub.

2023-2028 National Science Foundation. *CAREER: Physiological Modeling of Longitudinal Human Trust for Operational Environments*. My role: PI.

2023-2028 Air Force Office of Scientific Research. *Cognitive Security and its Mitigation: A Theoretical Framework, Supporting Neurophysiological Studies, and Interactive Deep Learning Models in Sparse and Dense Information Environments*. PI: Hirshfield. My Role: Co-I. 4 other Co-Is.

2023-2024 AB Nexus. *Postural Orthostatic Tachycardia Syndrome in Persons with Traumatic Brain Injury: Vestibular-mediated Mechanisms and Brain Biomarkers*. PI: Herbert (CU Anschutz), My Role: Co-PI. Co-I: Torin Clark.

2022-2025 Air Force Office of Scientific Research. *Metrics and Models for Real Time Inference and Prediction of Trust in Human-Autonomy Teaming.* PI: Kong (UC Davis), My Role: Institute PI. Co-I: Torin Clark.

2022-2025 CU Next. *Merging Engineering & Medicine by Integrating Technology into Immersive, Hands-On Human Spaceflight Courses*. PI: Easter (CU Anschutz School of Medicine), My Role: Co-PI. 3 other Co-I's

2021-2025 NASA Human Research Program. *MATRIKS: Multi-Environment Virtual Training for Long Duration Exploration Missions*. My role: PI. 4 other Co-Is.

2019-2024 NASA Space Technology Research Initiative. *The HOME Space Technology Research Institute for Deep Space Habitat Design.* PI: Robinson (UC Davis), My role: Co-I, Research Thrust Lead. 19 other Co-Is.

<u>Completed Funding</u>

2022 SpaceWERX STTR, Space Force. *Demonstrate the Effectiveness of Virtual Reality (VR) in Uncertainty Visualizations in On-Orbit Servicing and Maintenance Using High-Fidelity Simulations*. PI: Ranjan (Gridraster), My Role: Institute PI. Co-I: Hanspeter Schaub.

2022 Engineering Excellence Fund (CU Boulder). My role: PI.

2021 Air Force DURIP Award *Network-based Neurophysiological and Psychophysiological Metrics of Human Trust Dynamics When Teamed with Autonom*y. My role: PI. Co-I: Torin Clark.

2021-2022 CU SEED Grant. *High Performance Spacesuit Glove with Novel Material Layup for Human Space Exploration* (CU Boulder). My role: PI. Co-PI: Laura Devendorf.

2019-2021 Translational Research Institute for Space Health. *Performance Enhancement Through Multi-Modal Stochastic Resonance.* My role: PI. Co-PI: Torin Clark.

2019 Engineering Excellence Fund (CU Boulder). My role: PI.

2018-2019 UROP Team grant (CU Boulder). My role: PI.

2019-202 Artist in Residence Fellowship (CU Boulder). PIs: Laura Devendorf, Steven Frost. My role: Co-I.

2018-2022 Department of Education Graduate Assistance in Areas of National Need. PI: Penina Axelrad. My role: Co-I. 10 other Co-Is.

2018 IRT Multi-functional Materials. Prototyping Support for Multi-functional Textiles Research. PI: Laura Devendorf. My role: Co-PI. (CU Boulder).

2018 IRT Multi-functional Materials. Multifunctional electronic skins for applications in prosthetics and spacesuits. Co-PIs: Jianliang Xiao, Wei Zhang, Jacob Segil. My role: Co-PI. (CU Boulder).

2017-2018 NASA Human Research Program. *Interactive Space Vehicle Design Tool with Virtual Reality*. My role: PI. Co-I: Dave Klaus.

2016-2017 NASA Human Research Program. *Quantifying and Preventing EVA Injury in Exploration Environments*. PI: Prof. Jeff Hoffman (MIT). My role: Institute PI. (Note that this grant was terminated due to a shift in program objectives)
2014-2016 National Space Biomedical Research Institute First Award Fellow. *Feasibility of DPOAE Mapping as an In-Flight Measure of Intracranial Pressure in Space*. My role: PI. Mentor: 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)

Media Appearances

2024 Interviewed by Space.com regarding Polaris Dawn Experiment
2024 Interviewed by CNN regarding Polaris Dawn Experiment
2024 Interviewed by WIRED Magazine regarding Polaris Dawn Experiment
2019 Medicine in Space and Surface Environments featured in many media outlets, including Wired Magazine, Travel and Leisure, local news, and President Benson's farewell address
2019 Interviewed for local news on cancellation of first all-female spacewalk
2019 Scholastic Math, Interviewed about Spacesuits
2019 Interviewed for high school student podcast on space
2019 Interviewed for local news on new NASA Spacesuit. Featured in ASEE Newsletter
2017 Podcast speaker, "You Make Me Sick: Humans in Space", Environmental Defense Fund

Additional Certifications and Experience

1. SCUBA Certification – Basic (2002), Advanced (2010), Rescue (2017*)*
2. Parabolic Flight Experience –Completed total of 190 parabolas. 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), Basic Life Support (2022), Wilderness First Aid (2022)
6. Isolated, Confined Environment – Canadian Forces Station Alert, 2 weeks December 2015, 2 weeks March 2016
7. American Institute for Avalanche Research and Education – Level 1 certification (2019)
8. Tripoli Rocketry Association - Member, amateur High Power Level 1 certification (2020)