ESTHER PUTMAN

AEROSPACE ENGINEER

OBJECTIVE

With my multifaceted background spanning life sciences and engineering, I am working to build the future of human space exploration by supporting astronaut training, space medical research, and crew operations.

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EDUCATION

PH.D. BIOASTRONAUTICS
Expected May 2024
M.S. AEROSPACE ENGINEERING
M.E. ENGINEERING MANAGEMENT
University of Colorado Boulder
3.94 GPA | 2019 – 2021

B.S. NEUROSCIENCE
B.S. BIOLOGY
University of Kentucky
Magna Cum Laude | 2019

SKILLS

// PROFESSIONAL
Engineering Project Management
Human Factors Engineering
Human Subject Research
Technical Writing

// MANUFACTURING
Additive Manufacturing: FDM, SLA
Soldering
Drill press
Mill + Lathe

// SOFTWARE + LANGUAGES

MATLAB	Python
LaTeX	Git
C#	R
Unity	Unreal

CAD- Creo, Solidworks

AWARDS

NSF GRFP 2020
BROOKE OWENS FELLOW 2018
ASTRONAUT SCHOLAR 2018
WOMEN IN AEROSPACE SCHOLAR 2018
AIAA DIVERSITY SCHOLAR 2018
SINGLETARY SCHOLAR 2015

EXPERIENCE

SPACE MEDICINE ASSOCIATE ENGINEERING INTERN
SpaceX | Fall 2022
- Crew training, flight qualification, and battery validation of research hardware for the Polaris Dawn mission.
- Created mathematical models of physiological changes in support of operational planning for mission safety.
- Supported testing and validation of the mission's cabin pressure profile for assessment of decompression sickness risk.

PARABOLIC FLIGHT COACH AND OPERATIONS CONSULTANT
Zero Gravity Corporation | 2021- Present
- Facilitate safety procedures, customer training, and onboard experiences during parabolic flights.
- Consultant on research-supported improvements in operational procedures for the reduction of motion sickness.

GRADUATE RESEARCH ASSISTANT
University of Colorado Boulder | 2019 – Present
- Created spaceflight mission-relevant training scenarios in VR using Unity to improve skill retention for long duration exploration missions.
- Responsible for human subjects testing and IRB approval.
- Physiological signal processing including fNIRS, EEG, EDA, EKG, respiration rate.

BIOLOGICAL SYSTEMS ENGINEERING INTERN
Space Tango, Lexington, KY | 2016 – 2019
- Collaborated on the development, turnover, and integration of over 50 payloads for life and physical sciences research on the International Space Station.
- Responsible for requirements creation and validation for hardware that interfaced with biological materials.
- Customer-facing role developing experiment plans and shaping proposals to facilitate NASA requirement compliance and hardware integration.

SPACE SYSTEMS INTERN – BROOKE OWENS FELLOW
Vulcan, Seattle, WA | May-August 2018
- Utilized satellite Earth observations to assist development of modeling and prediction algorithms addressing large-scale global issues like illegal blast fishing, elephant poaching, and coral reef conservation.
- Connected AI teams with training data sets from open-source satellite imagery identified and cataloged by my research of primary symptoms.

NASA SPACE LIFE SCIENCES TRAINING PROGRAM RESEARCHER
NASA Ames Research Center, Moffett Field, CA | June-August 2017
- Analyzed biomarkers of cellular senescence in bone marrow stem cells to explore mechanisms of astronaut bone density loss.
- Responsible for animal handling and dissection as well as data collection using cell culturing, flow cytometry, histology, and micro-CT.