

ESTHER PUTMAN

AEROSPACE ENGINEER

OBJECTIVE

With my multifaceted background spanning life sciences and engineering, I am working to build the future of crewed space exploration by created systems for human spaceflight.



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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

GRADUATE RESEARCH ASSISTANT

University of Colorado Boulder | 2019 – Present

- Research areas: VR astronaut training, estimating trust through psycho and neurophysiological signals, improving human performance with galvanic vestibular stimulation.
- Created spaceflight mission-relevant training scenarios in VR using Unity to improve skill retention for long duration exploration missions.
- Physiological signal processing including fNIRS, EEG, EDA, EKG, respiration rate.
- Developed novel training algorithm in Python for adaptive difficulty adjustment increasing user engagement and training impact.
- Responsible for IRB approval, human subjects testing, data processing and analysis, technical writing, and communicating project status with NASA stakeholders.

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.
- Explored the experience of women in STEM to inform gender-inclusive hiring practices.

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.

RESEARCH ASSISTANT

Sander's Brown Center on Aging, Lexington, KY | 2014-2017

- Researched traumatic brain injury, Alzheimer's, and vascular dementia through confocal microscopy and immunohistochemistry.
- Selected as 2015 IES Brain Research Foundation Fellow.