

KRISTI ACUFF

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EDUCATION

WESTERN COLORADO UNIVERSITY

Master of Environmental Management GPA: 4.0 (*May 2020*)

- Designed, Developed, and Implemented a Master's Thesis Project "*On-Orbit Sustainability*":
 - Collaborated with Community Sponsor, Dr. Danielle Wood, Director of MIT's Space Enabled Research Group, developing the Space Sustainability Rating
 - Performed background research to develop case studies on in-action rating systems; synthesized research findings into applicable lessons for rating system development; provided analyses and recommendations from case studies; organized meetings with executives, sponsors, and participants throughout project; and wrote proposals to raise funds for professional development conferences and travel totaling \$1,043
- Completed courses involving project management, policy and politics, data management and analysis
- Applicable assignments (Available upon Request):
 - Created Stommel Diagram: *Microgravity Effects on Human Body*
 - 500-word essay: *Wicked Problems; Planetary Protection*
 - Case Study: *Integrative Assessment of the Space Security Index*
 - Cost Benefit Analysis Summary: *Development of Space Technologies*
 - Circular Economy Presentation: *SpaceX Reusable Rockets*
 - Global Sustainability Presentation: *Junkyard Orbit*
 - 4,500-word essay: *Applying Reduce, Reuse, Recycle Model to Orbital Debris*
 - Nature-Inspired Design Project: *Biomimicry Alternatives to Paint on Satellites*

UNIVERSITY OF NEW MEXICO

B.S. – Nutrition and Dietetics GPA: 3.46 (*December 2011*)

- Interest in metabolic nutrition and achieving health requirements in unique settings
- Practiced leadership roles on campus including Residential Advisor, membership of Alpha Chi Omega, and Canvassing team leader to increase the Minimum Wage
- Actively participated in conflict management as mediator between residents and colleagues for Residential Advisor duties
- Elected courses in sustainability, exercise physiology and health, communication skills, and technical writing

EARTHSHIP BIOTECHTURE ACADEMY

Academy Graduate (*April 2012; Taos, NM*), Field Experience (*Jan-Feb 2018; Panama*)

- Developed building practices aligned to the 6 Earthship Biotecture principles through classroom and hands-on activities:
 - 1. *Thermal/Solar Heating and Cooling*: Understand knowledge of convection, radiation, and conduction heat transfer; select optimal building materials to harvest solar energy; structure cooling tubes and window vents to utilize geothermal cooling principles; install thermal wrap and moisture barriers
 - 2. *Solar and Wind Electricity*: Wired direct and alternating current systems; poly- and mono-crystalline photovoltaic systems and accompanying battery setups; calculated estimated load to determine size of electrical systems; built free standing and on-structure installations
 - 3. *Contained Sewage Treatment*: Use planting bed system to filter water for second use; plan and execute gray water and black water plumbing throughout dwelling; understand concepts of solid and liquid waste breakdown; identify appropriate means of septic tank use or leach field dimensions

- 4. *Building with Natural and Recycled Materials*: Understand construction materials and calculate cost offsets by using alternative materials; cut glass and meticulously assemble bottle-bricks; design and create bottle-brick walls for decorative purposes; develop skills of repurposing materials; understand structural integrity and effectiveness of different materials
- 5. *Water Harvesting*: Understand water catchment and filtration systems; directing waterflow as desired and identifying safe materials for water catchment areas; calculated water-use to determine size of system necessary; planned, plumbed, and learned to maintain pumping and filtration systems in dwelling
- 6. *Food Production*: Constructed in-unit greenhouse planters according to specific water filtration needs; identified effective fruiting-plant ecosystems to utilize gray water and provide nutrition; understand concepts of hydroponic and aquaponic growing systems to optimize green space
- Worked on various multi-stage buildings to ensure broad spectrum of experience; read and drew architectural plans
- Researched state and municipal building codes to understand components of legally building structures
- Developed international community with other students by living collectively in an Earthship during the Academy

PUBLICATIONS

- Acuff, Kristi, Katlyn M. Turner, and Danielle R. Wood. "Innovation Practices: A Study of Co-Creation Practices in Greater Boston and the Detroit Metro." In *Innovation: The Academics' Perspectives* session. IAC Paris, France, 2022. Co-Presented by Dr. Katlyn M. Turner and Kristi Acuff.
- Rathnasabapathy, Minoo, Danielle Wood, Francesca Letizia, Stijn Lemmens, Moriba Jah, Ashley Schiller, Carissa Christensen, Simon Potter, Nikolai Khlystov, Maksim Soshkin, Kristi Acuff, Miles Lifson, Riley Steindl. "Space Sustainability Rating: Designing a Composite Indicator to Incentivise Satellite Operators to Pursue Long-Term Sustainability of the Space Environment." IAC 2020.
- Letizia, F., S. Lemmens, D. Wood, M. Rathnasabapathy, M. Lifson, R. Steindl, K. Acuff, M. Jah, S. Potter, and N. Khlystov. "FRAMEWORK FOR THE SPACE SUSTAINABILITY RATING." Proc. 8th European Conference on Space Debris (virtual), Darmstadt, Germany, 20–23 April 2021, published by the ESA Space Debris Office.
- Rathnasabapathy, Minoo, Danielle Wood, Francesca Letizia, Stijn Lemmens, Moriba Jah, Ashley Schiller, Carissa Christensen, Simon Potter, Nikolai Khlystov, Maksim Soshkin, Kristi Acuff, Miles Lifson, Riley Steindl. "*Implementing the Space Sustainability Rating: An Innovative Tool to Foster Long-term Sustainability in Orbit.*" IAC 2021.
- Video- *Space Sustainability Rating: Evaluating Sustainability in Space*. Released: 11 May 2021. The video highlights the design and development of the Space Sustainability Rating (SSR) to date. Featuring short presentations from stakeholders and members of the SSR consortium, the video provides details of the history of the SSR, selected modules, and next steps. Acuff's contributions 10:25-17:38. <https://www.media.mit.edu/projects/ssr-space-sustainability-rating/overview/>

CERTIFICATIONS & ACCOMPLISHMENTS

- *University of Arizona CHaSE Spacesuit Training Level I*; Biosphere 2, Tucson, AZ: May 2023
- *Attended Analog Astronaut Conference*; Biosphere 2, Tucson, AZ: May 2023
- *PADI Open Water SCUBA Certification Program*; La Jolla Dive, San Diego, CA: October 2020
- *SpaceKind Training I&II: Space-centric personal development course*; Online via Zoom: June 2020

- *ASIST: Applied Suicide Intervention Skills Training*; Crested Butte, CO: December 2019
- *Attended International Astronautical Congress*; Washington, D.C.: October 2019; Paris, France: Sept 2022
- *Culture of Leaders Training Program*; Gunnison, CO: Jan-Feb 2019
- *Consensus Building Training*; Fairplay, CO: November 2018
- *Wilderness First Responder*; Girdwood, AK: May 2017; *Recertification*; Albuquerque, NM: April 2021
- *L-39 Albatross Fighter Jet 45-min Flight*; Chino, CA: October 2017
- *Attended Advanced Adult Space Camp*; Huntsville, AL: October 2016
- *Introduction to Aerospace Engineering: Astronautics & Human Spaceflight*, MITx; Nov 2016

EXPERIENCE

RESEARCH SUPPORT ASSOCIATE

Remote via Zoom, Google Suite

Space Enabled Research Group, Massachusetts Institute of Technology

06/2021-Current

- Assigned to Innovation Practices project and two MIT Climate Grand Challenge projects
- Performed web research to inform teams on innovation organizations, cities facing coastal flood impacts, and population disparities of climate change consequences
- Provided research results in many forms: Presentation slides, Spreadsheets, Essays, Verbal summaries
- Recruit and schedule interviews with organizational directors, facilitators, and managers to discuss operations
- Manage and train undergraduate and other researchers on various tasks throughout projects
- Complete De-Centering training to investigate personal biases and understand lived experiences of populations different than my own
- Attended semester-long seminars on Space Technologies for the Development Leader and Queer-Feminist-Antiracism and Design for the Future

VOLUNTEER RESEARCH AFFILIATE

Remote via Zoom, WebEx

Space Enabled Research Group, Massachusetts Institute of Technology

11/2019-Current

- Collaborate remotely to develop a system rating sustainability of missions to Earth's orbits
- Provide examples from research to assist in development details of system
- Edit documents and provide thorough feedback on writing, clarity, and communication of content; authorship on IAC paper; virtually presented material at ASCEND conference
- Attend meetings to note specific relevancies other rating systems may inform across development
- Update knowledge consistently by participating in webinars, professional development and networking opportunities, scheduling interviews with experts, and reading technical publications

CLIMATE ACTION PLAN IMPLEMENTATION COORDINATOR

Remote via Zoom, DropBox

School of Architecture and Planning, Massachusetts Institute of Technology

06/2021-08/2022

- Learned MIT School of Architecture and Planning's organizational structure to assess leverage points for impactful changes in line with the Climate Action Plan
- Reported weekly to the Associate Dean of Strategic Initiatives, Caroline Jones, in SA+P
- Regularly met with various individuals in MIT's Office of Sustainability to gather information and knowledge on past and current initiatives
- Scheduled meetings with and spoke to many actors in the SA+P ecosystem, including Director of Facilities, Department Heads, Financial and Administrative Officers, Event Coordinators, and Waste Stream Experts, Student Councils, and Organizers of Initiatives on campus
- Created presentations and organized time slots on agendas at faculty meetings, department updates, special talks, and other events in each Department, Laboratory, and Center
- Managed information from each meeting and recorded questions, comments, and concerns regarding sustainability efforts at the SA+P level up to the Institutional level and beyond

HEAVY EQUIPMENT AND AUTO TECHNICIAN

Talkeetna, AK & Field

Jones Services

Summer 2022

- Perform diagnostics and repairs with and without supervision on performance vehicles, daily drivers, and 4x4 rigs
- Disassemble engines, replace parts, and reassemble components correctly including rolling, braking, and suspension components, fuel components, hydraulic components, and driveshaft components
- Provide in-field support including packing necessary tools and equipment, research equipment operation and repairs, identify clues to troubleshoot mechanical issues, and locating/ordering parts

BOARD MEMBER, VOLUNTEER COORDINATOR

Gunnison, CO

Gunnison Valley Observatory

06/2019-07/2022

- Coordinate adequate presence of Volunteers on-site to ensure successful events; teach and train Volunteers on facility and scope operations; provide materials to Volunteers to supplement training; recruit volunteers; maintain contact with individuals and adapt to changes in commitment levels
- Operate varying models of telescopes, determine which accessories to utilize for best observations
- Provide guests with information about celestial objects, describe memorable methods to locate objects
- Present information and facts to dynamic groups as needed, adjust scopes to accommodate curiosities
- Successfully solicited \$4,842 in Public Service Grant funding from Gunnison City Council for Classroom Under the Stars program and the Enhancement of Visitor Experience initiative
- Assist the preparation and implementation of COVID operations

ENVIRONMENTAL IMPACTS PROJECT CO-LEAD

Remote via Google Products

Space Generation Advisory Council, Space Safety and Sustainability Group

01/2021-10/2021

- Coordinate meetings with internationally based team members and project group managers; continuously update project Lead and managers with progress, challenges, and meet deadlines provided by either and/or both
- Collaborate with team members on Google products to effectively create a report on the space sector's impacts on the terrestrial environment, produce a one-page factsheet, and conference paper
- Manage project deadlines to ensure deliverables are submitted on time

ANALOUGE ASTRONAUT

Mojave Desert Habitat, CA

MMAARS: Mars-Moon Astronautics Academy and Research Science

07/2020-08/2020

- Performed Chief Nutrition Officer duties pre-simulation and during simulation: prepared crew-specific meal plans with dietary restrictions and considerations; kept food journal for pre-sim habit tracking; ensured kitchen facilities stayed neat, clean, and organized; developed cooking and clean up schedule for crew
- Assisted assembly of 4-wheeled rover robot with analogue video feed; set up site to test rover and its equipment in the field, adjusted weight distribution for optimal performance, communicated robot's actions to "blind" rover pilot
- Tested Dexter model robotic arm: ensured a safe and stable action environment; discussed and performed troubleshooting processes; observed and corrected malfunctioning behaviors with crew; received debriefings on adjustments and reprogramming efforts

SUMMIT FOR SPACE SUSTAINABILITY VOLUNTEER

Washington, D.C.

Secure World Foundation

June 2019

- Greeted guests and participants professionally and recorded attendance
- Assisted registration, passed out and collected name tags, provided logistical information of the facilities
- Facilitated Q & A sessions held for keynote speakers, encouraged audience participation

- Transcribed thorough notes and created a detailed document to provide the organization with notes for later reflection

FIELD MEMBER

Gunnison, CO

Western Mountain Rescue Team

10/2018-11/2019

- Attend weekly trainings for patient packaging and extraction including rigging pulley systems for low slope and high incline evacuation
- Search and rescue trainings entailing reporting party communication, tracking from last known location, reporting and describing clues and locations via GPS
- Incident Command Structure independent study completion of courses: ICS-100, ICS-200, ICS-700
- Create and clear Landing Zones for helicopter arrival and departure
- Avalanche search and extraction training including safely travelling to scene on snow equipment, locating and communicating signs of human presence, probing snow in designated pattern, strategic snow removal upon probe-strike, patient packaging and extraction across snow

LIFT OPERATOR SUPERVISOR

Crested Butte, CO

Vail Resorts

2020/2021 (two seasons)

- Understand and pass exams on each lift's mechanics, safety implements, power dynamics, and structural components to ensure safe and effective operation for myself, guests, and coworkers
- Assist guests to load and unload lift safely by creating and maintaining a smooth and flat approach and ramp to loading and unloading stations, interact with guests in fun and positive way ensuring their comfort in boarding the lift, watch body and equipment position of guests for signs of trouble loading, and react quickly to slow or stop the lift when situation requires to mitigate escalation
- Ensure appropriate paperwork is completed properly and signed off for regulation inspections and incident protection
- Awarded "Epic Service" recognition for elevating guest experience, and "Have Fun" award for creating a fun atmosphere for guests and fellow employees
- Manage required time for each operator's break, review and sign-off legally binding paperwork, be available for guests questions or concerns, manage task assignment by Operations Manager

CONSTRUCTION, RENOVATION & LANDSCAPING LABORER

Gunnison, CO

KW Construction, Zimm Building, Valley Woodworks, Butte-i-ful Gardens

09/2018-06/2020

- Observed and assisted project manager in processes including flood-event mitigation, insurance interactions, and subcontracting bids
- Participated in demolition, renovations, detailed finishing, construction and finishing clean-up, appliance installation, deck and porch installation, punch-list creation and completion, ensuring priorities for fire and health codes completed in timely manner, assisted and performed carpentry and drywall tasks, documented and moved personal contents in and out of buildings, assembled and cleaned living spaces
- Familiarization with emergency flood, fire, and mold mitigation process in single- and multi-family buildings
- Operated hand and table power and pneumatic tools including multiple types of drills, saws, nail and staple guns, chinking gun, grinders, belt sanders, oscillating tools, dollies
- Identified and performed tasks without supervision, maintained clean and hazard-free worksite, assisting sub-contractors in specialized trades, managed priorities at site
- Assembled, disassembled, and cleaned parts of machine tools per site requirements including manual and pneumatic chinking guns, rotor/stator pump, scaffolding & plank assemblies, wood stain equipment & materials
- Tended to outdoor spaces including plant identification and health, understood client's desired design, removed invasive plants, provided lawn care and clean
- Kept records of time on property, managed TSheets hour-keeping software, mapped travel between sites

HEAVY EQUIPMENT OPERATOR

Valdez Creek Mining

Remote Location, AK
2015-2017 (three seasons)

- Reported and performed daily maintenance tasks for the safety of equipment: refueling, cleaning and organizing interior cabs and washing pieces of equipment for optimum observation, checking all fluid levels to ensure machine performance, efficiency of operations
- Certified and adhered to Mining Safety and Health Association requirements to ensure safe operation and procedures at the workplace according to regulations in a changing open-pit environment
- Communicated effectively via radio with crew members during maneuvers, plan changes, mechanical issues, etc.
- Continuously sought knowledge and self-educated about the mining location, the gold mining industry, and exploratory drilling
- Advocated for diverse experience in different pieces of equipment, various positions in the operation, and demonstrated willingness to learn by taking on extra duties including applying automotive mechanical knowledge to assist on-site mechanics and minor reinforcement arc-welding tasks
- Respectful resident with co-workers in a long term, wilderness camp environment
- Trained onboarding operators on equipment, procedures, safety protocols, and pit management

VOLUNTEER RESCUE TECHNICIAN

Matanuska-Susitna Borough Emergency Services

Talkeetna, AK
Summer 2012

- Blood-borne pathogen safety training and Hazardous Material identification and response training including traffic reroutes and evacuation
- Attend weekly trainings for patient packaging and scene extraction including rigging pulley systems, scene safety routines, donning and doffing Personal Protective Equipment, and radio communications
- Operate hydraulic hand tools including cutting, bracing, and prying mechanisms for vehicular extraction
- Assist medics to load patients appropriately into transportation (helicopters and/or ambulances)
- Create and clear Landing Zones for helicopter arrival and departure
- Administrative duties including incident reports, log and track hours and on-scene positions, complete training paperwork