Amber Imai-Hong

Avionics Engineer and Outreach Specialist

GOV. MSG. NO. 797

EXPERIENCE

Hawaii Space Flight Laboratory, Honolulu, HI — *Avionics Engineer and Program Director, 101 CubeSats*

June 2012 - PRESENT

Design, assemble, integrate, and test electronics for small satellites and sUAS operations. Direct the 101 CubeSat Program including the Artemis CubeSat Kit, Project POKE, and various student driven launch opportunities. Support sUAS flights with various groups as a licensed sUAS pilot.

Hawaii Space Grant Consortium, Honolulu, HI — *K12 Outreach Specialist*

January 2008 - June 2012

Assist in planning and execution of K12 outreach and community events hosted or supported by HSGC, including family science nights, weekend workshops, teacher trainings, Astronaut Science Days, and Robotics Tournaments and Events.

EDUCATION

University of Hawaii at Manoa, Honolulu, HI — *Electrical Engineering, B.S.*

August 2007 - December 2012

Assistant Project Manager and Electrical Power Subsystem member in UH Manoa's University NanoSat Program Nanosat 6 Competition in 2009-2011. Active member of the Student Advisory Board, helped to restart and restructure the Engineers Council of UH, and mentor in the Native Hawaiian Science and Engineering Mentorship Program. Participated as a Board Member and Regional Conference Committee Member for the Society of Women Engineers-Hawaii Chapter, and Director of the National Association of Engineering Student Council West Region Conference. Co-Chaired SWE's inaugural Introduce a Girl to Engineering Day.

SKILLS

Communication and Teamwork skills

Leadership

Technical Documentation

Smallsat Environmental and System Testing

Smallsat Integration

Basic Hand and Power Tools

PCB Design using Eagle

PCB Assembly and Testing

Microsoft Office Suite

Google Drive / Office 365

Basic Knowledge of C/C++

Git Repository Experience

Some Onshape and AutoDesk Inventor Experience

3D Printing

Certifications

Ham Radio Operator - Technician Class

Licensed small Unmanned Aircraft Systems (sUAS) Pilot (Part 107)

Liquid Nitrogen Safety Training

Basic EHSO Laboratory Safety Training

PROJECTS/LEADERSHIP

HSFL Project POKE — *Program Manager*

Led the proposal effort to get almost $500,000 through the Governor's Emergency Education Relief Grant for innovative teaching methods. Lead effort to create an Engineering Model (non-flight) version of the Artemis CubeSat Kit that is suitable for middle and high school students. Create course materials to ensure the cubesat kits are beneficial for students in grades 6-12 and their teachers. Advertise and recruit teachers to participate in the program. Manage timelines, documentation, reports, and procurement. Assist with setting up and executing a 600 level course within the Outreach College for K12 educators.

HSFL Artemis CubeSat Kit — *Program Manager*

Lead a team of high school and undergraduate students and HSFL engineers to develop a low-cost, open source 1U cubesat kit for educational purposes. Manage technical timelines and procurement. Review avionics designs, test plans, and documentation. Assisted with proposal for the NASA Space Grant Artemis Student Challenge Grant. Assist with technical documentation and reports to NASA.

HSFL HyTI — *Avionics Specialist*

Lead Engineer for the On-Board Computer (OBC) System. Understand the hardware for Bus and Payload OBCs. Understand the Mechanical and Electrical interfaces between the OBCs and other components in the 6U Cryogenically Cooled 6U Cubesat. Lead harnessing efforts. Review avionics designs and test reports. Design support boards to interface systems to the OBCs. Assist with procurement. Lead the effort for Ground Station Support. Develop and execute test plans to meet launch provider requirements. Manage HSFL's Avionics Team.

HSFL Neutron-1— *Avionics Specialist, Operations Manager*

Design, assemble, test, and integrate the flight electronics for the neutron detecting 3U cubesat, delivered August 2020 and released from the ISS in November 2020. Coordinate with the mechanical, software, and payload teams to ensure successful integration. Schedule, prepare, and execute thermal vacuum chamber environmental tests. Research and purchase materials suitable and necessary for flight integration through the UH Procurement System. Manage high school and undergraduate students on various projects related to the Neutron-1 mission. Develop and execute test plans to meet launch provider requirements. Develop flight hardware documentation, user guides, decision making matrices, integration plans, and test results. Maintain internal avionics budget documents. Assist Project Manager with documentation as needed. Foster a relationship with Ham Radio Operators worldwide. Manage the Kauai Community

College Ground Station Operations.

HSFL HiakaSat— *Payload/Integration and Testing Specialist*

Design, assemble, test and integrate the electrical interfaces necessary for integrating the hyperspectral payload to the HiakaSat MicroSatellite bus to NASA Standards. Program the PIC microprocessor in C/C++ to perform the functions necessary for thermal and power management to the payload subsystem. Work with the payload team to develop the support electronics to ensure the off-the-shelf imager can function as expected in space. Plan and execute upgrades to the thermal vacuum chambers to allow for thermal cycling, bake out, and day-in-the-life testing to NASA Standards. Perform and document subsystem and system level thermal vacuum environmental testing.

AmericaView — *HawaiiView State Coordinator*

Develop, promote, coordinate, and conduct hands on activities for students of all ages to better understand Earth observing and spacecraft systems in a variety of settings in support of the LandSat Program. Utilize Microsoft Office and Google Drive to develop educational materials. Present hands-on STEM education methods and techniques at Earth Science Conferences. Help other researchers develop specialized remote sensing hands-on activities for community outreach efforts.

Hawaii Institute of Geophysics and Planetology sUAS Team — *Remote Pilot/Payload Specialist*

Participate in HIGP sUAS activities and flights. Collaborate in flights with the Applied Research Laboratory in Manoa and Drone Team 1 at UH Hilo. Develop payloads and support equipment for researchers within the School of Ocean and Earth Science and Technology (SOEST). 3D print structural components as needed. Conduct tests of the integrated system, including center of balance and structural rigidity.

McKinley Robotics— *Mentor / Team Manager*

2008-2011; 2018-2021

Assist the mentors and advisors who helped to start the Waiakea Robotics Team. Manage a team of about 30 students and 10 adult mentors. Design and build a 125 pound robot during the 6 week build season. Teach students proper use of hand and power tools. Assist students in the development of Java code for driver control. Assist students and mentors with designing and fabricating mechanical components to complete the challenge for the season using Onshape and executing commands on the router and 3D printer. Organize fundraisers, facilitate off-season training sessions, manage the team budget, coordinate and chaperone team travel.

Society of Women Engineers-Hawaiian Islands Professional Chapter— *Nominations Committee*

Collect officer nominations, check membership status of nominees and

voters, develop and distribute ballots, tally votes, and announce new officers.

NovaSol Wave Simulator— *Optical Engineering Intern*

Summer 2011

Research optical communication and laser communication systems. Construct a wave simulator using 80/20 aluminum and Aerotech high precision, high torque motors to execute functional testing of a laser communication system. Develop a GUI using Microsoft Visual Studio to control the wave simulator.

Canada France Hawaii Telescope Observatory Automation Project— *Akamai Intern, Audio/Visual Applications*

Summer 2008

Learn about the selected Audio/Video system chosen for the Observatory Automation Project to ensure safe remote operation of the observatory. Create a recording server in C for time lapse and real time data storage.