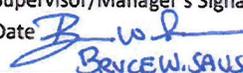


JSC Senior Design Project and or Intern Request Form

EA3-1

Project Title:	Multispectral Imaging, Electrical System Design and Development		
Project Description:	Development and test of electronics systems for RISA Project		
Choose most appropriate area of research:	<input checked="" type="checkbox"/> Planetary Surface Systems <input type="checkbox"/> Ground Operations <input type="checkbox"/> Propulsion <input checked="" type="checkbox"/> Spacecraft <input type="checkbox"/> Human Health Program		
Program Applicability	<input type="checkbox"/> ISS <input type="checkbox"/> CEV/SLS <input type="checkbox"/> Commercial Crew <input type="checkbox"/> Asteroid <input checked="" type="checkbox"/> Adv. Technology (AES/STMD)		
Choose one project:	Roles and Responsibilities of Senior Design POC/Mentor		
<input checked="" type="checkbox"/> Senior Design	I have coordinated with my management and I am able to support at least three (3) teleconferences (kick-off, mid-term, and final) with a Senior Design Project Team at a university that chooses my project. I understand that I shall not provide any sensitive or classified information to the Senior Design Project students of faculty. I will provide feedback to the project team if requested.		
<input type="checkbox"/> Internship	I have coordinated with my management and I am able to support an intern. If an intern is selected for my project, I will provide an environment where an intern can grow and we may have a mutually beneficial and successful internship. My project will be able to provide a desk space, work area, and computer for an intern. I will review any final report or presentation that the intern generates during his/her internship and submit it to Export Control (DAA) for approval. This project opportunity will be posted in OSSI, through the office of Education (use exact same title). OSSI website: : https://intern.nasa.gov		
Check desired Timeframe for Internship:	<input checked="" type="checkbox"/> Year long <input type="checkbox"/> Summer <input checked="" type="checkbox"/> Fall <input checked="" type="checkbox"/> Spring		
Check desired Major/Minor(s) for Internship:	<input type="checkbox"/> Aerospace Engineering <input type="checkbox"/> Aeronautical Engineering <input type="checkbox"/> Astronautical Engineering <input type="checkbox"/> Biomedical Engineering <input type="checkbox"/> Chemical Engineering <input type="checkbox"/> Civil Environmental <input type="checkbox"/> Health Engineering <input checked="" type="checkbox"/> Electrical, Electronic Engineering <input checked="" type="checkbox"/> Computer Engineering <input type="checkbox"/> Engineering Physics <input type="checkbox"/> Industrial Manufacturing Engineering <input type="checkbox"/> Materials, Metallurgical Engineering <input type="checkbox"/> Mechanical Engineering, Mechanics <input type="checkbox"/> Nuclear Engineering <input type="checkbox"/> Astronomy, Astrophysics <input type="checkbox"/> Chemistry <input type="checkbox"/> Optics <input type="checkbox"/> Physics <input type="checkbox"/> Atmospheric Sciences <input type="checkbox"/> Geography <input type="checkbox"/> Geosciences <input type="checkbox"/> Oceanography <input type="checkbox"/> Natural Resource Management <input type="checkbox"/> Mathematics, Applied Mathematics <input checked="" type="checkbox"/> Computer Science <input type="checkbox"/> Astrobiology <input type="checkbox"/> Biology <input type="checkbox"/> Biochemistry/Biophysics <input type="checkbox"/> Microbiology Bacteriology <input type="checkbox"/> Chemical Engineering <input type="checkbox"/> Other, please specify:		
Mentor Name:	Doug Holland	Mentor's E-mail:	s.d.holland@nasa.gov
Title & Organization:	EE / EA351	Phone #:	X33638
Alternate POC/Mentor Name:		Alternate's E-mail:	
Education Office Signature and Date:		Intern Mentor's Signature & Date:	
As supervisor/manager, I approve of the above named individual as Senior Design Project POC of Intern Mentor.		Supervisor/Manager's Signature & Date  BRUCE W. SAUSER	5-31-13
(For Intern Request Only) As Administrative Officer, I am aware that the above named Intern Mentor has submitted a request for an Intern.		Administrative Officer's Signature & Date:	



TOPIC # - TDC-09-F12

REMOTE IMAGE SYSTEM ACQUISITION (RISA) SPACE CAMERA 4 (SC4) DEVELOPMENT

PROJECT DESCRIPTION:

The purpose of the RISA SC4 project is to produce a high quality / high reliability wireless multispectral imager designed specifically for the space environment. The imager will be used to monitor the health and status of the crew and vehicle while in space as well as on Lunar and Martian surfaces. The SC4 design will be based on the existing NASA SC3 and SC2 imagers. The project includes the:

- development of required functions in VHDL
- electronic circuit development,
- testing of alternate sensors,
- characterizing the performance of the system using Matlab, and
- design and build of proof of concept prototypes using flight equivalent parts.

Specific tasks to be accomplished within the school year include: a) development of an integrated solar powered battery charger, b) development of a wireless Ethernet interface, and c) modifications to support alternate image sensors



An earlier prototype



An earlier prototype

DESIGN TEAM PROFILE:

- Level:** Upper Division students
- Major:** Optical Engr, Physics, Electrical Engr, Software Engr, Mechanical Engr
- Teams:** Mentor may accept more than one team

Design project topic offered by:
NASA Johnson Space Center
Advanced Development Office

