

InSPIRESS

The Innovative System Project for the Increased Recruitment of Emerging STEM (Science, Technology, Engineering, and Math) Students (InSPIRESS) is an outreach project that provides the opportunity for high school students to develop and design a scientific payload to be accommodated on a spacecraft which is designed by undergraduate students in the UAHuntsville IPT project. High school students collaborate with the undergraduate engineering students to understand the engineering requirements, the design process, and the role a customer plays in design. InSPIRESS teams compete for selection by the undergraduate engineering teams.

The requirements for the Innovative System Project for the Increased Recruitment of Emerging STEM Students (InSPIRESS) Lunar Analysis and Sampling for Exploration and Research (LASER) Mission Payload Competition. Two interim reviews are scheduled during the semester to assess the design of the proposed payload: the Payload Status Review (PSR) and the Payload Concept Review (PCR). There are also two other events in which each InSPIRESS team must participate to be in consideration for selection: the Open House Poster Session and the Final Review. Each review/event requires deliverables be submitted to UAH in advance. The following paragraphs outline all of the required deliverables. Recommended templates for each of these deliverables can be downloaded at www.inspiress.org.

Scope of Work

We invite you to participate in the Spring 2018 InSPIRESS program, where you are requested to design a payload that accomplishes a science objective to complement the Lunar Analysis and Sampling for Exploration and Research (LASER) Mission. Furthermore, you are requested to plan and perform events, which pertain to your payload, with your local community.

The Challenge

Your challenge, should you decide to accept, is to design an autonomous science payload for a UAH-designed spacecraft, for a NASA planetary science mission-of-interest while simultaneously conducting Community Engagement Activity (CEA) events in your local community to explain your mission. Consistent with the design of the payload, you and your team must:

- Determine the purpose(s), or objective(s), of your scientific payload onboard this spacecraft
- Understand, follow, and communicate the engineering design process, through which you will advance your payload
- Work on a team to communicate your payload design to an evaluation board
- In order to fulfill the CEA event requirements your team must:
 - Organize and conduct events that engage the local community in your mission
 - Provide proof of these events
 - Gather data on the events' audiences
 - Communicate the results of these events to an external review board
- Your payload design and Community Engagement Activity events must conform to all the requirements and constraints listed in this Request for Payload (RFP), and in the InSPIRESS design notebook.

InSPIRESS Competition

You must successfully communicate your payload concept and your Community Engagement Activity (CEA) events via these three methods:

- Payload Concept Proposal (PCP)
- Open House Poster Session (OH)
- Final Review (FR)

The evaluation criteria for these methods are described in subsequent sections of this RFP. The point distribution for the InSPIRESS Competition utilizes the three communication methods mentioned above, and incorporates an additional component – the CEA visitor numbers.

Table 6: Summary of InSPIRESS Deliverables and Reviews

Name	Pts	Type	Description	Submit By	Evaluated On	Evaluated By	Consequence for Omission
Payload Status Review (PSR)	N/A	Presentation	15 minute presentation, 10 minute discussion	5pm, day prior to PSR	Week 7	IPT Students and professors	Lost practice, experience. Angry teacher. No points lost.
Payload Concept Review (PCR)	N/A	Presentation	25 minute presentation, 10 min discussion, practice for FR	5pm, day prior to PCR	Week 14	UAH IPT Students and professors	Lost practice, experience, and information. Angry teacher.
Payload Concept Proposal (PCP)	20	Document	8 pages content maximum, plus title page	April 24 th	April 25 th – May 4 th	UAH IPT Students	Disqualification from entire competition
Open House Poster Session (OH)	20	Poster	36x24 or 24x36 poster (ppt or pub, for example)	May 2 nd	May 11 th	Local professionals	Poster will not be printed by UAH
CEA Survey Data	10	Data (online form)	Survey data from CEA events	May 7 th	May 8 th – 9 th	Numerical	Disqualified from OH
Final Review (FR)	50	Presentation	25 minute presentation, 10 min discussion	May 8 th	May 11 th	Local North Alabama professionals	Disqualification from Final Review