

<b>Fiscal Year:</b>	FY 2019	<b>Task Last Updated:</b>	FY 12/31/2018
<b>PI Name:</b>	Fernandez-Pello, Carlos Ph.D.		
<b>Project Title:</b>	Wire Combustion with External Radiation in Support of the JAXA Project Fundamental Research on International Standard of Fire Safety in Space		
<b>Division Name:</b>	Physical Sciences		
<b>Program/Discipline:</b>			
<b>Program/Discipline--Element/Subdiscipline:</b>	COMBUSTION SCIENCE--Combustion science		
<b>Joint Agency Name:</b>		<b>TechPort:</b>	No
<b>Human Research Program Elements:</b>	None		
<b>Human Research Program Risks:</b>	None		
<b>Space Biology Element:</b>	None		
<b>Space Biology Cross-Element Discipline:</b>	None		
<b>Space Biology Special Category:</b>	None		
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<b>Comments:</b>			
<b>Project Type:</b>	FLIGHT,GROUND	<b>Solicitation / Funding Source:</b>	2012 Japanese Space Agency (JAXA) AO for Fundamental Research on an International Standard of Fire Safety in Space
<b>Start Date:</b>	01/01/2019	<b>End Date:</b>	12/31/2021
<b>No. of Post Docs:</b>		<b>No. of PhD Degrees:</b>	
<b>No. of PhD Candidates:</b>		<b>No. of Master' Degrees:</b>	
<b>No. of Master's Candidates:</b>		<b>No. of Bachelor's Degrees:</b>	
<b>No. of Bachelor's Candidates:</b>		<b>Monitoring Center:</b>	NASA GRC
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<b>Flight Program:</b>			
<b>Flight Assignment:</b>			
<b>Key Personnel Changes/Previous PI:</b>	Prof. Carlos Fernandez-Pello is U.S. Co-Investigator on Japan Aerospace Exploration Agency (JAXA)-sponsored project, "Flammability Limits At Reduced-g Experiment (FLARE)." JAXA Principal Investigator is Prof. Osamu Fujita, Hokkaido University.		
<b>COI Name (Institution):</b>	Carey, Van Ph.D. ( University of California, Berkeley )		
<b>Grant/Contract No.:</b>	80NSSC19K0331		
<b>Performance Goal No.:</b>			
<b>Performance Goal Text:</b>			

<b>Task Description:</b>	<p>NOTE this is continuation of "Fundamental Research on International Standard of Fire Safety in Space - Subteam 2: Wire Combustion with External Radiation in Support of the JAXA Project Fundamental Research on International Standard of Fire Safety in Space," grant NNX14AF01G with the same principal investigator Prof. Carlos Fernandez-Pello.</p> <p>Funding is for Prof. Fernandez-Pello's role as U.S. Co-Investigator for the Japan Aerospace Exploration Agency (JAXA)-sponsored project, "Flammability Limits At Reduced-g Experiment (FLARE)." JAXA International Announcement of Opportunity (AO) to fund experiments to be conducted aboard the Japanese Experiment Module, Kibo, 2012.</p> <p>The objective of the proposed research program is to continue the experimental study of the flammability of wire materials in space exploration atmospheres and associated computational/theoretical tools to aid interpretation of test results.</p>
<b>Rationale for HRP Directed Research:</b>	
<b>Research Impact/Earth Benefits:</b>	<p>Studying materials flammability in spacecraft allows us to accurately elucidate the effect of the environment parameters on the ignition and flame spread over combustible material, and through them their potential fire hazard. Particularly important is the determination of the Limiting Oxygen Concentration (LOC) on flame extinction under spacecraft environments. The anticipated improved methodology should reduce time and cost for the spacecraft material screening. Another important aspect of the research is the effect of melting and dripping of plastic insulation in normal gravity in comparison with microgravity. The results are relevant because dripping will not occur in microgravity and consequently could impact their burning and methodology to screen. The investigation and results have also benefits for terrestrial fire safety by providing further information about the flammability of materials under a variety of environments.</p>
<b>Task Progress:</b>	<p>New project for FY2019.</p> <p>Note is continuation of "Fundamental Research on International Standard of Fire Safety in Space - Subteam 2: Wire Combustion with External Radiation in Support of the JAXA Project Fundamental Research on International Standard of Fire Safety in Space," grant NNX14AF01G, with the same principal investigator Prof. Carlos Fernandez-Pello. See that project for previous reporting.</p>
<b>Bibliography Type:</b>	Description: (Last Updated: 12/29/2023)