

Product Design and Manufacturing Student Describes Her Experience at NASA

Amanda Stark, a junior in the Product Design and Manufacturing program describes her two co-op rotations at NASA.

“At NASA Langley Research Center in Hampton, Virginia, there is a Branch within the Engineering Directorate called the System Integration and Test Branch (SITB); that is where I am completing my third Co-op semester. It is actually my second semester I have been an intern with SITB. The SITB has two services that they provide to NASA. First we supply projects with the equipment and people that are required in order to assemble and integrate their hardware. This includes clean rooms and specialty equipment. The second thing that we do is provide the equipment that is needed to perform tests that simulate space environments and conditions that can be experienced during launch.”

“I work in the Thermal Vacuum Lab and we are responsible for not only simulating space environments, but also evaluation of how the materials of the chosen components will survive in the simulated environment. This is especially important when optics and sensors are needed to collect data. The required sensors could become damaged if the materials that are present result in causing contamination by outgassing. Part of my project last semester was to produce a procedure that would evaluate the rinse from a cryogenic surface for non-volatile particles. This procedure would help project determine if the substances that were being outgassed by their components would be dangerous to the more sensitive hardware.”

“This semester I returned to find that one of the projects that I worked with last spring was about to launch. That project would be RaD-X, or Radiation Dosimetry Experiment, which is a high-altitude balloon project, whose aim is to study how cosmic rays interact with our atmosphere. A big part of this project is to look at the levels of radiation that are present at the altitudes in which commercial aircraft fly. This is a concern since there has been an increase in air traffic over the last decade and there is not an easy way to determine the amount of radiation that not only the employees of the airlines are being exposed to, but also the travelers that they cater to.”

“Last semester I participated in the Thermal Vacuum Tests that were required for the RaD-X payload. Another part of this project is to educate a group of younger engineers in the process of project completion. I have to admit that I have felt very lucky working with this project group even though I joined at the end of the project, and did not play a major role, but what I have learned has been amazing!”