SPLAT

ELEMENTARY SCHOOL

KIDSAT

MIDDLE SCHOOL

NAEAA
NORTH ALABAMA ENGINEERING ACADEMY ALLIANCE

HIGH SCHOOL

InSPIRESS

HIGH SCHOOL

IPT

UNDERGRADUATE

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ELEMENTARY SCHOOL

Student Project to Learn About Technology (SPLAT) - fifth grade students explore engineering concepts by designing, building, testing, and evaluating different methods to successfully land a payload (an egg) on a hard surface.

Emphasizes "learning by doing," where students develop a concept, test that concept, evaluate its success or failure, and improve on the concept. Further emphasis is placed on "teachable moments" that naturally arise throughout the project. Students also practice math skills while learning the importance of cost and budgets in engineering design.

MIDDLE SCHOOL

Kid SATellite launch (KidSAT) - seventh and eighth grade students design, develop, and build a science experiment which will fly on a high-altitude balloon. High school students are responsible for the integration of the experiments and the launch of the balloons. The balloon's flight is streamed while the students watch online.

For middle school students, emphasizes systems engineering design and coursework preparation to allow entry into the high school Engineering Academies. For the high school students, KidSAT emphasizes the principles of project management, integration, and test and evaluation.

HIGH SCHOOL

North Alabama Engineering Academy Alliance (NAEAA) - partnership between UAHuntsville and North Alabama high schools to develop pre-engineering curricula for students interested in engineering careers. The alliance provides high schools with the necessary guidance and interactive lessons to start Engineering Academies.

In the first two years, the NAEAA emphasizes the fundamentals of engineering - the introduction of the engineering disciplines, Computer Aided Design (CAD), etc. Upper-level students are faced with open-ended engineering integration and design challenges - KidSAT and InSPIRESS, respectively.

HIGH SCHOOL

Innovative Student Project for the Increased Recruitment of Engineering and Science Students (InSPIRESS) - eleventh and twelfth grade students develop and design a payload to be housed on an IPT-designed spacecraft, by collaborating with the IPT students to understand the requirements and available resources. InSPIRESS teams compete for selection to "fly" on the spacecraft, judged by each IPT.

UNDERGRADUATE

Integrated Product Team (IPT) - undergraduate students from several departments and universities form multidisciplinary teams to design open-ended, real-world missions of interest to the planetary science community.

Emphasizes systems thinking, communication, and teamwork. The students respond to industry-standard requests-for-proposals, and present to experts from NASA and the aerospace/science community. The goal of IPT is to provide a seamless transition into the work environment.