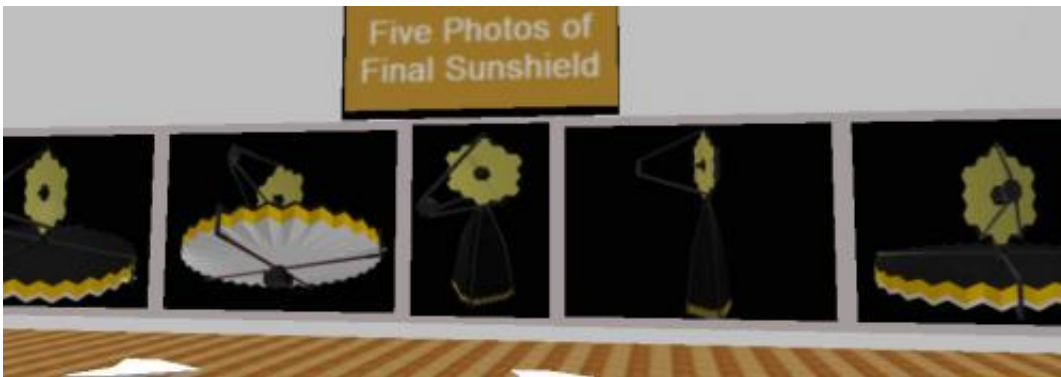


NASA high school STEM challenge announces winning team

May 3 2013



Using modeling and simulation software, here the winning team shows a series of graphic representations of a sun shield designed for the Webb telescope.
Credit: NIA

The NASA RealWorld-InWorld Engineering Design Challenge, an integrated science, technology, engineering and mathematics program focused on NASA's forthcoming James Webb Space Telescope, has named the 2012-2013 first place team. The team, which consisted of high school juniors and seniors participating in the NASA INSPIRES program, included: Abigail Radford of Ashville, N.C.; Joshua Dijamco of Jackson, N.J.; Jonathan Hernandez of Elizabeth, N.J.; Katherine Denner of Horsham, Penn.; and Jim Gerard of Merritt Island, Fla.

The team will travel to NASA's Goddard Space Flight Center in Greenbelt, Md., May 6 for a daylong VIP event. They will present their

winning [engineering design](#) concept to Dr. John Mather, senior project scientist for the Webb telescope mission and 2006 [Nobel Prize winner](#), and other engineers and scientists working on the mission.

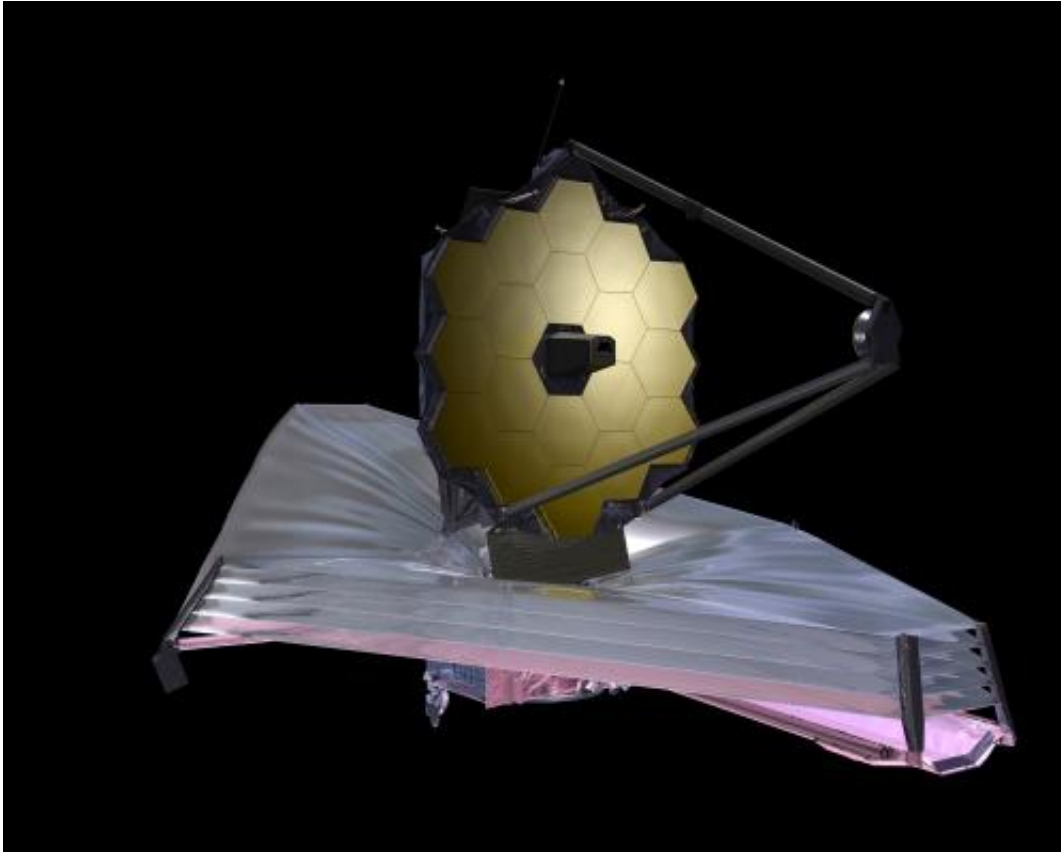
"The RealWorld-InWorld Engineering [Design Challenge](#) is an amazing way to connect students with real [NASA engineers](#) and scientists, which allows them to study a real NASA engineering project in an immersive way," said Maggie Masetti of the NASA Webb telescope education and public outreach team at Goddard. "I was able to watch some of the students present their final projects, and it was rewarding to see what they'd learned, especially about how to coordinate a team (whose members were often separated by great physical distance) to achieve a goal."



Six teams were selected to be evaluated by a panel of engineers, graduate students and formal K-12 educators. The image shown here depicts virtually gateways into their respective team spaces. Credit: NIA

The team was evaluated by graduate engineering students and professionals of various relevant disciplines and selected among a group of five finalist teams. Evaluators included a professor of engineering from the University of Tennessee and Oak Ridge National Laboratory, K-12 STEM educators, graduate students from engineering and multiple related disciplines, as well as past RWIW team leaders.

Students on the team, all [high school](#) sophomores or juniors, collaborated virtually from their respective locations. The team was led by Marco Balducci, a graduate research assistant at the University of Colorado at Boulder, who currently works in the Colorado Center for Astrodynamics Research.



This is an artist's concept of the James Webb Space Telescope as of September 2009. Credit: NASA

This marked the third year of the NASA RWIW Engineering Design Challenge. For the 2012-2013 run, the program asked grade 8-12 students to develop engineering design solutions to one of two real-world NASA Webb telescope challenges. Students chose to either re-design a

shield to keep Webb telescope cold enough to "detect infrared light from faint sources such as distant galaxies and extrasolar planets" or to re-design a mirror assembly so that Webb [telescope](#) may produce images that are "sufficiently bright and sharp to look back in time to when galaxies were young."

RWIW earns its name due to the two phases of the program. Phase one, "RealWorld," requires "paper and pencil," and guides students through the design process inside participating classrooms or other formal and informal learning environments. Phase two, "InWorld," takes place within a digital universe created within the Activeworlds, 3-D multiuser, PC-based system. There, [students](#) from across the United States interact with peers and university-student mentors, using interactive collaborative tools and professional-level modeling and simulation software to develop engineering design solutions.

The program is a collaboration between the [James Webb Space Telescope](#) education and public outreach group, NASA Goddard, NASA's Langley Research Center in Hampton, Va., USA TODAY Education and the National Institute of Aerospace.

Provided by NASA's Goddard Space Flight Center

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