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Jill Freise, a freshman in the Department of Mechanical Engineering at Texas A&M University, is one of 20 college students from across the nation to have been named to lead teams of middle and high school students into the virtual InWorld phase of the NASA RealWorld-InWorld (RWIW) Engineering Design Challenge.

The team leads, who volunteer their time outside of their regular studies, were each recommended by their college professors based on their leadership skills and academic ability. The team leads each reviewed the design solutions submitted during the initial RealWorld phase of the design challenge and selected a middle or high school team to mentor throughout the InWorld phase of the challenge.

"One of the biggest benefits to college students, that I see, is the chance to practice their own ability to conduct an engineering design project. These are all things all engineers have to do -- sit down with a group (possibly virtually or over the phone), do

your research, think up a solution to a problem, design it, refine it, and finally present it," said Ethan Brewer, an Ohio State University aerospace engineering student, and returning RWIW team leader.

Friese said, "I wanted to lead an InWorld Team so I could encourage high school students to pursue careers in STEM-related fields. This competition provides a unique opportunity for students to solve real-world engineering problems, work in a team, and present their ideas through a creative and unique way. I really wanted to be a part of the growth and exploration that occurs in each of the high school students throughout the competition.

"My team leader last year, Nam, made a huge impression on me, and I wanted to impact others in that same way. I learned a lot about leadership, problem-solving, and engineering from his mentorship throughout the competition," said Friese, who was a high school participant in last year's contest.

The middle and high school RealWorld teams were selected from teams across the nation. Three of the selected teams are affiliated with Project Lead the Way, and seven have ties to NASAs online INSPIRE program.

The teams and their college leads now move to the virtual InWorld phase of the RWIW Engineering Design Challenge. This second phase of the challenge is completed within the National Institute of Aerospace (NIA) Universe, which is an ActiveWorlds 3-D, multiuser, PC-based, virtual environment that allows students to collaborate through text and voice chat, and through shared 3-D models, video, and images.

Each InWorld team works within their own dedicated environment, or "Team World," to refine and improve designs from the RealWorld phase of the challenge. Teams will also interact with an evaluation team, give tours of their "world" and complete a mystery challenge within this virtual space.

The two challenges for RWIW this year focus on NASAs Robonaut 2 (R2) and the James Webb Space Telescope (JWST). Ten of the 20 InWorld teams are designing a zero-gravity foot for R2. NASA engineers may consider the designs from the challenge in the actual design of R2s foot. The 10 JWST teams are redesigning the telescopes sunshield. The sunshield is essential in keeping the telescope cold, so it can detect infrared light from faint sources, such as distant galaxies and extrasolar planets.

The chosen teams will work on their designs until April 2. The top three teams of both challenge categories will be selected by April 6. Two "open-house" sessions on April 16 will allow individuals to tour the top six teams virtual spaces from 3-4 p.m. and

6-7 p.m. EDT. Each team will also interact with an evaluation team during a scheduled online synchronous forum on April 17.

A final JWST and R2 team will be announced. Finalists will receive a certificate of completion, and a letter of commendation. All members of the winning teams will receive $1,000.

Friese was a member of the Golden Arrow (the team that won RWIW last year) as a high school student. While in high school, she was the presiden and founder of the high school engineering club. In summer 2011, Friese interned at Draper Laboratory, where she worked on the dynamics algorithms for Robonauts humanoid legs, as well as guidance, navigation and control for a helicopter.

For more information about the NASA RealWorld-InWorld Engineering Design Challenge, visit http://www.realworld-inworld.org [1].

For more information about the National Institute of Aerospace, visit http://www.nianet.org [2].

For more information about Robonaut 2, visit http://robonaut.jsc.nasa.gov/default.asp [3].

For more information about the James Webb Space Telescope, visit http://www.jwst.nasa.gov/ [4].

SOURCE [5]

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Links:
[1] http://www.realworld-inworld.org
[2] http://www.nianet.org
[3] http://robonaut.jsc.nasa.gov/default.asp
[4] http://www.jwst.nasa.gov/
[5] http://engineering.tamu.edu/news/2012/03/07/mechanical-engineering-student-named-nasa-college-mentor/