



A true engineer - 4-H'er Amanda Cantwell

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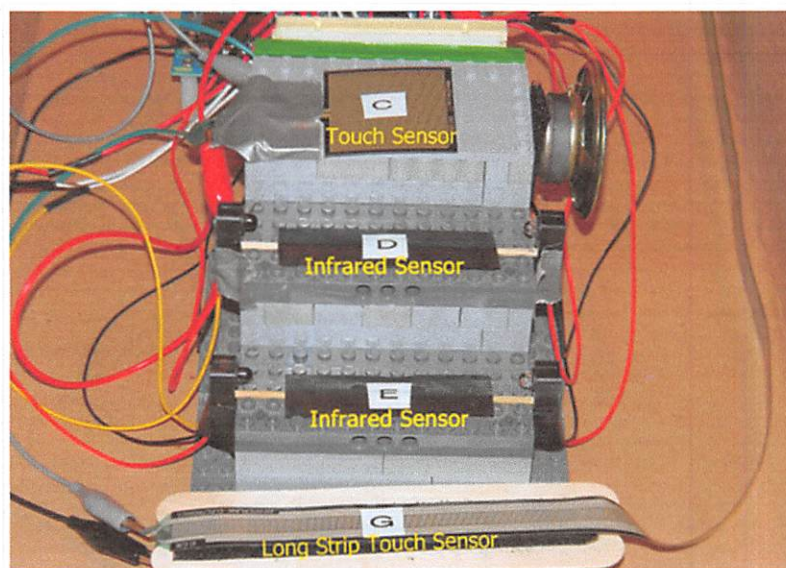
Editor's note: Today is "Introduce a Girl to Engineering Day" and we'd like to highlight a 4-H'er who is already an engineer!

On February 7, Amanda Cantwell participated in the 2017 Imperial County Science Fair. Her project, Piano Stairs, won first place in the Electrical and Mechanical Engineering Division. After all the division winners were announced, the Best Overall winner was announced and to her surprise, she won! Next, her project will compete in the Greater San Diego Science and Engineering fair on March 15th.



A piano staircase

Amanda got the idea for her project from her science club advisor. Her high school is going to build a new science building to get more students interested in the STEM initiative and her teacher asked her if I wanted to build a prototype of a piano staircase. She said that if it was well made and doable that it may be used in the future building. She instantly became drawn to the idea of designing the staircase for her school's building and became excited to start the project.

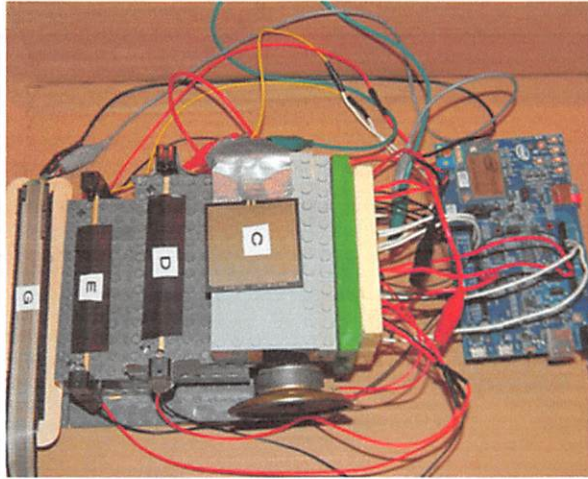


Her ultimate goal was to build a musical staircase to play piano musical notes as people walk up and down the stairs. This is a two-year project, and this year she built a prototype and tested several sensors and possible solutions to use in the piano stairs. Her mini piano stairs can play different

musical tones as the different sensors are triggered or steps are pressed. Next year, she will build a life size staircase and play real piano sounds. "It was fun and I learned a lot from it," she said. "In the future, I hope to become a mechanical or bio-medical engineer."

About Amanda

Amanda is a sophomore at Central Union High School and she has been a 4-H member for 7 years. She is the President of the McCabe 4-H club and one of her favorite projects is the Robotics project. Her 4-H Robotics group just got done designing mini battery powered electrical cars with an on/off switch that will be submitted to the fair in a few days! They will also submit a Lego Mindstorms "Humanoid" robot that moves its arms, legs and hands.



Full view of Amanda's project

Watch Amanda's project in action!

Piano Stairs

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