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When designing your career co

By JoAnne Castagna, Ed.D.

When Charles Paray was a child in middle school he wasn't sure what he wanted to be when he grew up. He knew he had a strong interest in art and through the encouragement of his art teacher he realized he could fuse art with math and science and become an architect.



Today, Paray is an architect with the U.S. Army Corps of Engineers, New York District. Like his teacher from years ago, he recently informed students that they too can discover many different careers in the sciences and that the Army Corps is one place

where many of these professions can be found.

Paray talked with seventh grade science classes at the West Point Middle School located at the West Point Military Academy in West Point, New York. The school serves the children of service members at the academy.

He went as a volunteer for the District's STEM Program (Science, Technology, Engineering and Math). "The goal of this program is to inspire young girls and boys to pursue careers in science, technology, engineering and mathematics," said Jean Lau, equal employment opportunity office (EEO) specialist and STEM outreach coordinator with the U.S. Army Corps of Engineers, New York District.

The classes viewed a video about the Army Corps and the different types of science and math related professionals the agency employs, including biologists, civil engineers, financial managers and architects like Paray. Paray then educated the students on what

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he does as an architect for the Army Corps. He said, “Architecture is not just pretty pictures and drawings. There is a lot of math and science that goes into it.”



He took them through the steps he takes to design projects to get them ready for construction. This includes using old tools - like protractors and pencils - and new tools - like computer programs such as CADD (Computer Aided Design and Drafting) and BIM (Building Information Modeling). Paray is also a CADD/BIM Manager for the Design Branch of the district.

He uses these tools to create plans and renderings - drawings of what the completed project will look like. He told the students that he has worked on many of the buildings that are around them here on the West Point Campus, including the New Cadet Barracks that is under construction and was recently toured by the students.

In fact, the New Cadet Barracks was one of Paray’s first design projects with the Army Corps. After working as an architect in private industry for 20 years, he joined the Corps five years ago and the barracks was assigned to him.

Following this discussion, Paray learned that the students were recently assigned a project called - “Beat the Flood,” where they have to construct a structure that can withstand a flood. To do this they have to take various things into consideration including design criteria, materials, sustainability, size, construction method, environmental issues and costs.

Paray told the students that the Army Corps also has projects that must be flood proof and must meet the same criteria, especially after our experience with Super Storm Sandy.



He talked about one of these projects - the reconstruction of the Caven Point Marine Terminal, where the Army Corps keeps and maintains its vessels. The structure was completely destroyed by Super Storm Sandy and the agency has recently completed designs to reconstruct it to withstand future flooding. The new structure will be a state-of-the art, energy efficiency structure, expected to be completed in 2016.

The students were inquisitive and had great questions for Paray including - “How do you know how long a project

will take to complete” and “Did you ever realize that you made a mistake after the project was completed?”

Paray wrapped up the discussion by showing the students a 3D visualization that takes viewers on a virtual “video game like” tour of what the New Cadet Barracks will look like when it’s completed. He added, “It took many hours of hard work from many architects and engineers to get a project like this to this point.”

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