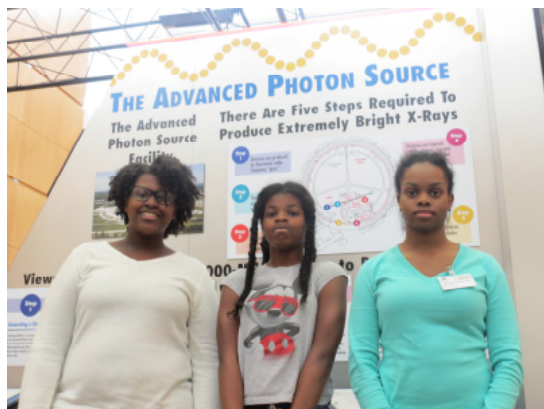


Student Scientists Visit Argonne National Lab



Above- left to right: Isis Washington, Kayla Young, and Bria Harris

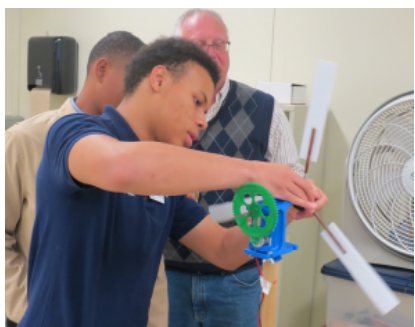
National laboratories are the backbone of innovation. Many of today's most important technologies (e.g. the Internet) are the result of scientific breakthroughs made at national research facilities. As the field of innovative science speeds forward, the opportunities for students in STEM will continue to grow.

The Department of Energy has seven national laboratories: Ames, Argonne, Fermi, Lawrence Berkley, Oak Ridge, Pacific Northwest, Princeton Plasma Physics, SLAC National Accelerator Laboratory and Thomas Jefferson National Accelerator Facility. On November 20, 2015 a group of student scientists from Ecotek Lab were invited to conduct hands-on experiments in material science and wind energy at Argonne National Lab in Lemont, Illinois.

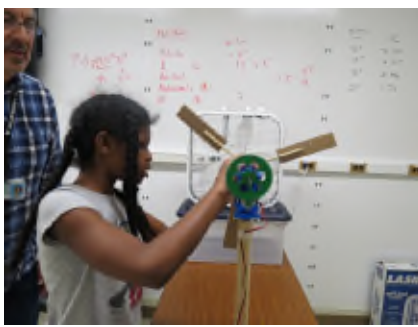
The student scientists included Kayla Young, Bria Harris, Chandler Harris, and Mylan Phelps from Detroit Edison Public School Academy along with Isis Washington from Parcell Middle School. Due to the sensitivity of the research being done on the campus, the students were interviewed by security personnel. Once clearance was given, the students worked with senior engineers to explore the benefits of wind energy. They focused their efforts on assessing the impact of the material used to engineer the rotor and the rotor's pitch on the amount of voltage generation. As part of this experiment the students were exposed to the process of how engineers and scientists gather and analyze data related to wind energy potential.

After working to optimize the electric potential of a wind turbine, the students were introduced to the science of superconductivity and electron-microscopy technology. John Domyancich, a research scientist and learning lab coordinator at Argonne, demonstrated the science behind creating a superconductive metal using liquid nitrogen. The students also learned how to manipulate the technical function of the electron microscope to observe and examine nanoparticles in different materials.

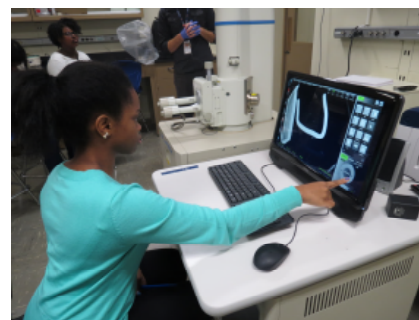
The visit to Argonne National Lab helped the students broaden their understanding of science and career opportunities in STEM. For example, Bria Harris inquired about how virtual reality technology could be used to study the behavior of materials at the molecular level. Isis and Kayla learned how to measure electrical potential energy in a wind farm, while Mylan and Chandler were able to expand their understanding of how bending electrons can help produce x-rays.



Chandler Harris working on wind turbine blade pitch and gear box



Kayla changing pitch of rotors on model wind turbine



Bria Harris observing nanostructures of copper using scanning electron microscope

About the Ecotek Science Program

Ecotek is a science research lab program for young inventors and researchers in grades 5 thru 12. Student scientists work on projects aligned with the issues being addressed by world leaders at the United Nations. To learn more about Ecotek Lab go to <http://www.ecotek-us.com>