

Lock Haven University

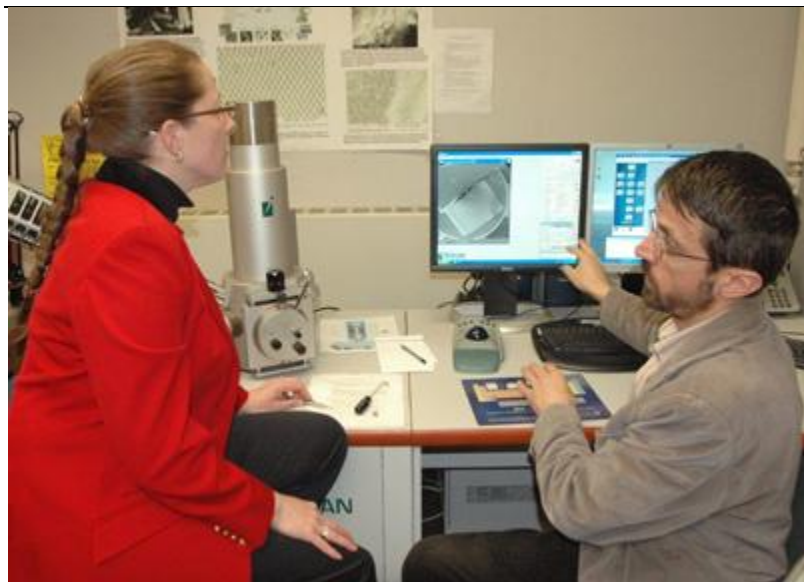
Official Release

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Release Date: 05/18/2011



PASSHE grant provides enhanced electron microscope capabilities at LHU; Cathodoluminescence expands research opportunities for students in all sciences



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Lock Haven University professors Loretta Dickson (left) and Marian Tzolov (right) discuss the capabilities of the university's scanning electron microscope.

LOCK HAVEN, Pa. - Lock Haven University has received a PASSHE Faculty Development Grant to extend the analytical capabilities of its scanning electron microscope. This will provide faculty and student researchers in all of the sciences with new qualitative information about materials' properties and will enhance research

techniques and skills.

Scientists at Lock Haven University are continuously upgrading instructional and laboratory capabilities to prepare students for a technically advanced society. In recent years, the university has acquired state-of-the-art instrumentation and LHU students are trained to use it independently either as part of a regular course or as part of independent study research.

In 2009, a \$90,500 grant from the National Science Foundation made it possible for LHU to acquire equipment to identify the elemental composition of compounds at sub-micron scale, which is used for projects in all the sciences. The new equipment, attached to the university's scanning electron microscope, enables researchers to look at much smaller details than before. The present \$7490.00 PASSHE award will broaden the capabilities of the electron microscope with cathodoluminescence.

Cathodoluminescence is a technique for analyzing matter on a sub-micron scale using secondary light when an electron beam is directed at a sample. The integration of cathodoluminescence in the existing electron microscope will support a wide range of scholarly activities in the departments of Geology and Physics, Chemistry, and Biology. It will not only enhance students' research projects, but will also enhance their expertise in electron microscopy, preparing them for better presentation of their work at conferences and their future careers.

According to Dr. David L. White, Dean of the College of Arts and Sciences, "At Lock Haven University, science students are involved in cutting-edge research. Our science faculty are committed to doing everything possible to expand and enhance their students' research opportunities." He added, "This grant is an excellent example of the cross-disciplinary cooperation and collaboration that are a hallmark of Lock Haven University science programs."

The grant will be administered by Dr. Marian B. Tzolov, Associate Professor of Physics, and Dr. Loretta Dickson, Assistant Professor Geology. Their grant proposal, "Spectrally resolved cathodoluminescence studies of nano- and microscale structures," was selected for funding by PASSHE's faculty Professional Development Council (FDPC). This year, System faculty submitted 118 proposals. Because only \$207,830 was available for funding projects, the FDPC had to limit its awards to 33 applicants. In the letter notifying them of their award, Dr. Tzolov and Dr. Dickson were praised for their "exceptional ability to describe and delineate the significance" of their planned project.

Lock Haven University is a member of the Pennsylvania State System of Higher Education (PASSHE), the largest provider of higher education in the commonwealth. Its 14 universities offer more than 250 degree and certificate programs in more than 120 areas of study. Nearly 405,000 system alumni live and work in Pennsylvania.

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