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[APPLYING](#)
[FOR STUDENTS](#)
[FOR FACULTY](#)
[NEWS AND EVENTS](#)
[NEWS ARCHIVE](#)
[ALL EVENTS](#)
[YEAR OF THE CITY](#)

News



Report Cites Physics Education Program as among Best in Nation

 Posted: **May 9, 2013**

Buffalo State's physics teacher education program was included among the best such programs in the United States in a report issued by [the Task Force on Teacher Education in Physics \(T-TEP\)](#). T-TEP is a joint effort of the American Physical Society, the American Association of Physics Teachers, and the American Institute of Physics, with support from the Physics Teacher Education Coalition.

The report, *Transforming the Preparation of Physics Teachers: A Call to Action*, found that, with a handful of exceptions, "the professional preparation of physics teachers is largely inefficient, mostly incoherent, and completely unprepared to deal with the current and future needs of the nation's students."

The process for preparing the report included gathering data in many ways, including sending surveys to all U.S. physics departments in U.S. colleges and universities. The task force focused on high-producing institutions—those that graduate two or more physics teachers a year. The task force also consulted existing research results regarding teacher education and other teaching-related research as well as national reports related to student achievement in science, technology, engineering, and mathematics; analyzed publicly available data; and collaborated with other organizations with an interest in teacher education.

The T-TEP report recommends "establishing regional centers in physics education," arguing that an innovative national program is necessary to meet national needs. Citing a report of the [National Science Board](#), the report demonstrates the need by stating, "Substandard U.S. student achievement in science is coupled to the significant demand for foreign-born science and engineering (S&E) workers to fill positions in what is known as 'Knowledge- and Technology-Intensive Industries;' these industries have been a major and growing part of the U.S. economy, and currently represent 40 percent of the U.S. Gross Domestic Product."

Dan MacIsaac, associate professor of physics, is described as playing an "indispensable role in guiding the intellectual development of the Buffalo State physics teacher education program." MacIsaac, along with Kathleen Falconer, lecturer of elementary education and reading, are nationally known experts in the Reformed Teaching Observation Protocol, a tool that assesses the effectiveness of methods of teaching physics.

"We are pleased to be recognized as one of only 11 national model programs in the T-TEP report," said MacIsaac. "Buffalo State physics programs are incorporating teaching methods that research has shown to be more effective ways of teaching physics. Buffalo State physics has also been fortunate to receive extensive continuous funding from the National Science Foundation since 2003 supporting these innovative methods and curricula for physics teacher preparation. A team of faculty, professional staff, and adjunct faculty from the departments of physics, earth sciences and science education, elementary education and reading, and technology together with Buffalo State administrators have made such efforts and recognition possible."

Buffalo State offers both [undergraduate and graduate programs](#) in physics teaching preparation, including two physics M.S.Ed. programs. One is designed for certified teachers who want to add physics teaching as a second certification; the other is designed for STEM professionals who want to pursue an alternative certification process to teach high school physics.