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MITs 3.091 and NSDL Materials Digital Library: Investigating the Role of Digital Libraries in Freshmen Introductory Science Courses with No Lab Component¹ DONALD SADOWAY, Massachusetts Institute of Technology, LAURA BARTOLO, Kent State University — One example of the reality facing science educators is the practical impossibility of providing meaningful laboratory experience in large introductory undergraduate science courses. The Materials Digital Library (MatDL), as part of the National Science Foundation (NSF) National Science Digital Library (NSDL) program, investigates issues associated with the delivery of content in materials science and its cognate areas. The focus of the current work is to investigate the feasibility of using data archived in digital libraries to provide freshmen in large introductory science classes a virtual laboratory experience that meets many of the educational objectives of classical laboratory offerings. Also, the question of scalability and broader applicability, e.g., to freshman physics, is under study. The results of a new pilot project launched this academic year will be reported. The virtual laboratory is associated with “*Introduction to Solid State Chemistry 3.091*,” a course that over half the freshman class at MIT choose to satisfy the chemistry requirement but which lacks a laboratory component.

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