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Determining the impact of REU sites in the mathematical sciences.

Peterson, Mark A. (ed.) et al., Directions for mathematics research experience for undergraduates. Based on the conference "New directions for mathematics research experiences for undergraduates", Mount Holyoke College, South Hadley, MA, USA, June 21–22, 2013. Hackensack, NJ: World Scientific (ISBN 978-981-4630-31-3/hbk; 978-981-4630-33-7/ebook). 213-219 (2016).

Summary: The National Science Foundation's Research Experiences for Undergraduates (REU) Sites and Supplements program in the mathematical sciences has provided funds for faculty to guide research opportunities for students for over 25 years. While the number of sites fluctuates slightly, there are currently approximately 55 active NSF REU sites in the mathematical sciences operating around the nation. The National Security Agency has also traditionally provided support for REU sites. Although there is published literature citing the benefits of undergraduate research in general, and although each REU site is required to conduct an individual project assessment, an overall notion of the impact of the cohort of mathematical sciences REU sites is not yet available. In the recent federal climate, which includes tighter budgets and more focus on evidence-based practices, the mathematical sciences REU program might be well-served by sites taking advantage of established tools in a coordinated way to assess its impact on participating students. This article attempts to (1) describe some of the prior work relevant to the mathematical sciences community that has been done to determine the impact of REU sites and of research for undergraduates more generally and to (2) describe a specific tool, the Undergraduate Research Student Self-Assessment, that might be useful going forward. While there are different types of evaluations that can be done (longitudinal, post and pre surveys, etc.), a careful examination of specific benefits of different types of evaluation is beyond the scope of this article. The aim here is only to illustrate the possibility of using already-developed tools to get a real sense of impact, without requiring a great deal of investment in time or money on the part of the organizer.

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