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Daniel M Harris*, 184 Hope St, Box D, Providence, RI 02912. *Building New Opportunities: Integration of Outreach, Education and Research.*

In this talk, I will describe a synergistic approach through which my education and research efforts have directly translated into new outreach activities. In particular, I will showcase examples where novel and accessible physical demonstrations are developed by students and then utilized for activities within outreach programs including Girls Talk Math (UNC Chapel Hill), Girls Get Math (ICERM), STEM Day (Brown), and others. The rapid expansion of makerspaces across the country and the growing open hardware movement have facilitated a new paradigm where such hands-on devices and demonstrations can be shared broadly and readily recreated in a rapid and cost-effective manner. While ultimately serving to enhance the breadth of activities available to outreach programs, the framework presented also has the potential to increase visibility and provide additional context for student's academic work. Future outlook and other perspectives resulting from this experience will be shared. (Received September 15, 2020)