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A New Norm: Using Social Science to Create Disruptive Innovations for Broadening Participation in Physics[1]

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Norms often operate outside conscious awareness and limit broad participation in physics and STEM fields more generally. This presentation identifies several of these norms and provides empirically tested disruptions at three academic points: faculty, graduate, and undergraduate. First, is a focus on broadening the participation of women science faculty through an intervention aimed at supporting faculty search committees. Using a randomized control trail design, results show searches in the intervention were 6.3 times more likely to make an offer to a woman candidate, and these women were 5.8 times more likely to accept the offer from an intervention search. A diverse faculty can help disrupt the norms of their fields understanding about brilliance and effort, which can appeal to or repel potential graduate students. Using a randomized control trial design, recruitment materials for a science graduate program were manipulated to emphasize effort versus innate ability as the norm. Results show emphasizing effort as normal to achieve success in the male-dominated graduate program elevated womens motivation to purse and persist in graduate studies. Of course, before a student will consider graduate school, they must see themselves as a scientist. Data from a survey at three universities showed undergraduate women in physics lab classes were less likely to identify as a scientist when they were concerned about being stereotyped and could not see how physics was useful or helpful to society. Identifying and disrupting social norms can help create an inclusive learning and working context with far-reaching benefits.

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