## Overview

Competitions are increasingly prevalent in the global labor market (Lavy 2004; Lemieux, MacLeod, and Parent 2009) and the winners of competitions are disproportionately rewarded (Frank and Cook 2010). Understanding individual differences in response to competitive situations may help address economic disparities across groups, like persistent gender differences in labor market outcomes (Blau and Kahn 2017; Altonji and Blank 1999). Our proposed work will examine how much effort women choose to expend before feeling comfortable entering a competition. Study 1 will examine how tournament and piece-rate payment schemes for performance on a multiplication task affect how much time men and women spend practicing multiplication. We hypothesize that women will spend more time, on average, preparing relative to men, especially under a tournament payment scheme. In Study 2, we will explore the boundary conditions of the findings from Study 1 by exploring how manipulating beliefs about gender differences in performance on a gender-neutral matching task affects gender differences in the decision to prepare. We expect women will spend significantly more time preparing for the matching task when participants believe men outperform women, but the gender difference in preparation will be reduced when participants believe women outperform men on the task.

## Intellectual merit

The proposed work will advance knowledge by providing the foundation for a fruitful line of work focused on gender differences in the choice to prepare before a competition and its possible economic ramifications for women. Additionally, many standard economic models do not account for gender differences in behavioral traits as explanations for gender differences in economic outcomes (Niederle 2017). The current proposal will demonstrate the need to include gender-based behavior in future economic models (e.g., Akerlof and Kranton 2000), and provide data to lay the foundation for building these models. Also, gender differences in willingness to prepare before competition may serve as a possible explanation for robust gender differences in the choice to compete, which has not yet been fully explained in previous research (Niederle and Vesterlund 2011). Specifically, gender differences in the choice to compete may result from women’s desire to spend more time preparing before willingly entering a competition. Thus, the proposed research will identify a robust phenomenon that previous researchers have not yet considered in explaining gender differences in the choice to compete.

## Broader impacts

Much of the research on gender differences in competitiveness is focused on designing interventions to increase women’s competitiveness, with less attention paid to potential downstream consequences of these interventions. Yet, understanding how women and men respond to competitions may also be crucial for addressing gender disparities in labor market outcomes. If competitions exacerbate gender differences in the amount of effort exerted (e.g., preparing or studying) before performance, this may affect women’s labor output, career advancement, the ability to achieve a satisfying work-life balance, and even the decision to enter or stay in competitive environments. Additionally, there are opportunity costs for expending more effort than necessary on only one task or skill, especially when an individual’s overall performance is evaluated based on their success across many domains. These effects are especially relevant to professional development in STEM fields, where gender disparities are arguably driven by gender differences in confidence, increasing the likelihood women will overprepare before competition (Cheryan et al. 2017). Finally, gender differences in effort before entry into competitions would have important implications for many of the competitions we observe in the modern labor market, where small differences in effort and/or ability can lead to massive disparities in economic outcomes. Thus, understanding gender differences in the choice to expend effort before competitions may be one avenue to explain persistent gender gaps in economic outcomes.

Akerlof, George A., and Rachel E. Kranton. 2000. “Economics and identity.” *The Quarterly Journal of Economics* 115 (3): 715–53.

Altonji, J. G., and R. M. Blank. 1999. “Race and gender in the labor market.” In *Handbook of Labor Economics*, 3143–3259.

Blau, Francine D., and Lawrence M Kahn. 2017. “The gender wage gap: Extent, trends, and explanations.” *Journal of Economic Literature* 55 (3): 789–865. <https://doi.org/10.1257/jel.20160995>.

Cheryan, Sapna, Sianna A Ziegler, Amanda K Montoya, and Lily Jiang. 2017. “Why are some stem fields more gender balanced than others?” *Psychological Bulletin* 143 (1): 1–35.

Frank, R. H., and P. J. Cook. 2010. *The winner-take-all society: Why the few at the top get so much more than the rest of us*.

Lavy, Victor. 2004. “Performance pay and teachers’ effort, productivity and grading ethics.” *NBER WORKING PAPER SERIES*.

Lemieux, Thomas, Bentley W. MacLeod, and Daniel Parent. 2009. “Performance pay and wage inequality.” *The Quarterly Journal of Economics* CXXIV (1): 1–49.

Niederle, Muriel. 2017. “A gender agenda: A progress report on competitiveness.” *American Economic Review* 107 (5): 115–19. <https://doi.org/10.1257/aer.p20171066>.

Niederle, Muriel, and Lise Vesterlund. 2011. “Gender and competition.” *Annual Review of Economics* 3: 601–30. <https://doi.org/10.1016/j.labeco.2009.08.002>.