Young Children's STEM Interest and Gendered STEM Stereotyping Molly A. Schlesinger¹, Rachel M., Flynn², & Rebekah A. Richert¹ 1. University of California, Riverside; 2. New York University

Literature Review

- Girls are stereotyped as less interested in STEM ^{1, 2, 3}
- Stereotypes about STEM contribute to choices throughout the lifespan to underrepresentation of women in STEM^{1,2}
- Early childhood education now includes STEM curriculum, however, children may learn stereotypes from curriculum⁴
- Children are aware of gender stereotypes; no published work has examined if preschoolers stereotype STEM

Hypotheses

- Children will more often associate Novel Character **STEM Interest** with male than female characters
- Children will more often associate Familiar Character **STEM Expertise** with characters of the same gender
- Boys will have greater **Personal STEM Interest**

Measures

- Novel Character STEM Interest: Children were asked if novel male or female characters were more interested in 10 STEM activities or concepts
- Familiar Character STEM Expertise: Children were asked if they would watch a familiar male or familiar female character on TV to learn about 10 STEM concepts
- Personal STEM Interest: Children were asked to rate their interest in 10 STEM activities or concepts

Participants

- 48 children (52.1% female)
- Age 3-6 (M = 5.32, SD = .85)
- Race and ethnicity: 29.17% Anglo-American, 22.92% Hispanic-American, 8.3% African American, 2.08% Asian American, 35.4% Multi-ethnic

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Novel Character Interest

Male Novel Characters Female Novel Characters 2** 1 ** 8.00-6.00-4.00-2.00-FEMALE MALE Participant Gender Error bars: 95% Cl 1. t(22) = 2.98, p < .01, Cohen's d = 1.002. t(24) = 2.79, p = .01, Cohen's d = 0.84

Familiar Character Expertise



References

Shapiro, J. R., & Williams, A. M. (2012). The role of stereotype threats in undermining girls' and women's performance and interest in STEM fields. Sex Roles, 66(3-4), 175-183. DOI: 10.1007/s11199-011-0051-0 Stout, J. G., Dasgupta, N., Hunsinger, M., & McManus, M. A. (2011). STEMing the tide: using ingroup experts to inoculate women's self-concept in science, technology, engineering, and mathematics (STEM). Journal of personality and social psychology, 100(2),

 Repeated Measures ANOVA revealed a significant character gender and child gender interaction $F(1, 46) = 16.75, p < 0.001, \eta^2 = 0.27$ Boys were significantly more likely to associate male characters with STEM than female characters 2. Girls were significantly more likely to associate female characters with STEM than male characters

- Repeated Measures ANOVA revealed a significant character gender and child gender interaction
 - $F(1, 43) = 5.82, p < 0.05, \eta^2 = 0.12$ Boys were significantly more likely to associated male
 - characters with STEM than female characters
- 2. Girls associated female and male characters with STEM at similar rates



Summary of results

- National Science Foundation DRL-1252146



STEM Interest

Independent Samples *t*-test revealed no significant difference in children's STEM interest by child gender. t(46) = 1.07, p = n.s.

Children were more likely to associate Novel Character STEM Interest with same gender characters Boys were more likely to associate Familiar Character **STEM Expertise** with male than female characters Personal STEM Interest did not differ by child gender

Discussion

Preschoolers are not explicitly aware of STEM stereotypes Children associating Novel Character STEM Interest with same gender characters is consistent with research The lack of differences in **Personal STEM Interest** signifies children are not fully aware of STEM stereotypes The Familiar Character STEM Expertise findings describe children do recognize STEM stereotypes in certain situations: media characters embodying stereotypes

^{2.} Hyde, J. S., Lindberg, S. M., Linn, M. C., Ellis, A. B., & Williams, C. C. (2008). Gender similarities characterize math performance. Science, 321(5888), 494-495. DOI: 10.1126/science.1160364

^{4.} California Department of Education. (2013). Alignment of the Preschool Learning Foundations. http://www.cde.ca.gov/sp/cd/re/psalignment.asp