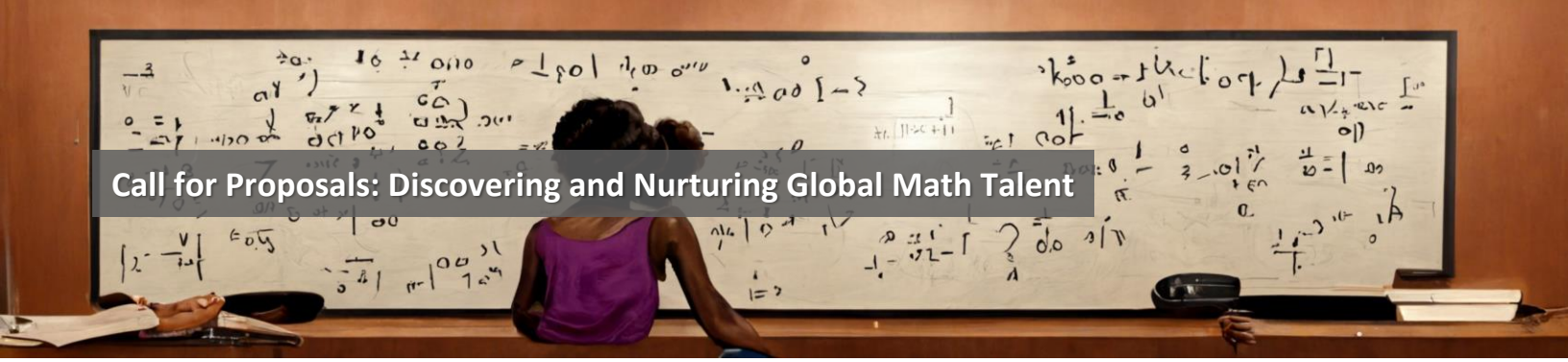

Call for Proposals: Discovering and Nurturing Global Math Talent

About Us. The Agency Fund is a multi-donor partnership focused on innovations and organizations that support people in the navigation of difficult lives. We maintain an open window to identify research and innovation concepts within the general scope of our approach. We also partner with funders to issue more targeted calls for proposals (such as this one) involving specific outcomes and population groups. This call is issued in partnership with Carina Initiatives and the Global Talent Lab.

Background for this Call for Proposals. A fifth of the world's population is between the ages of 5 and 17; and of these 1.7 billion youth, 1.5 billion live in low- and middle-income countries.[1] The realization of their potential will not only shape their own lives, but the future of humanity as a whole. Human potential comes in many different shapes that warrant nurture and care. Youth who perform highly in mathematics can benefit from special attention to this talent, as it can open paths to rewarding and impactful careers in science & technology.[2] But at present, frontier performance is extremely concentrated in specific demographics. For illustration, some 4% of International Math Olympiad gold medalists have been female, and 0.1% African.[3] While the seeds of talent are widely distributed, many youth do not reach the frontier of their potential.[4-6] The reasons include profound structural challenges. For example, in lower-income countries with young populations, parents and education systems tend to be strained in their capacity to invest in individual children.[7] Cultural norms also play a role: girls continue to receive less schooling in most countries.[8] Yet other factors could have fairly tractable solutions. For example, some countries have simply implemented strong mechanisms to identify and nurture talent, parts of which may be replicable elsewhere. Also, negative stereotypes about the intellectual capabilities of certain demographics need not necessarily be addressed at a society-wide scale; they can demonstrably be disrupted directly where they may do the most damage – at the level of individual students – preventing them from shaping negative self-beliefs and causing withdrawal.[9-10]

What and How We Plan to Fund. If more youth from socioeconomically disadvantaged backgrounds were to reach the frontiers of science & technology, they could advance human knowledge and innovation while simultaneously serving as role models for others. We hypothesize that an ill-nourished sense of belonging in science & technology, and a lack of clarity around specific paths, currently keep many talented youth from reaching their true potential. So we seek to fund projects that meet at least one of the following criteria:

- Projects that screen for hidden math talent in low- and middle-income countries at large scale by leveraging rich data sources (e.g., national exams), so as to discover exceptional but hidden talent; and
- Projects that offer support to exceptionally talented youth in the navigation of their potential. This could involve access to inspiring role models;[11] nurturing experiences and environments;[12] insights about educational and career options;[13] coaching, mentorship, etc. (Such "agency-oriented" interventions may come alongside more traditional supports, such as scholarships or pedagogy; but ideally, they can be evaluated separately.)

In this call, we are most interested in efforts involving students with the kind of talent that is one-in-a-thousand – a rarified but still sizeable group. (By definition, 0.1% of youth comprise 1.7 million). We are interested in time-limited projects that present a crisp theory of change and rigorously measure impact on short-term outcomes (e.g., educational achievement, performance in math competitions, admission to selective universities, etc.). The very strongest applicants will leave open the option to collect long-term impact data, and might even generate descriptive research on talent flows in their region of focus. We will consider applications from academic researchers as well as implementers – but we are especially drawn to applicants that demonstrate both research and implementation muscle, as well as a sustained institutional commitment to working at the intersection. The deadline for submissions is 20 Jan 2023 at 11:59AM Pacific Time. For FAQs and to apply, visit www.agency.fund

Readings.

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3. Carola Hoyos (2019): The Biggest Gender Divide Is in Mathematics. Financial Times
4. A Bell et al (2018): Who Becomes an Inventor in America? The Importance of Exposure to Innovation. Quarterly Journal of Economics 134(2)
5. SF Reardon et al (2019): Gender Achievement Gaps in U.S. School Districts. American Educational Research Journal 56(6)
6. AM Steegh, TN Höffler, MM Keller, I Parchmann (2019): Gender Differences in Mathematics and Science Competitions: A Systematic Review. Journal of Research in Science Teaching 56(10)
7. TP Schultz (1997): Demand for Children in Low Income Countries. Handbook of Population and Family Economics 1(A)
8. DK Evans, M Akmal, P Jakiela (2020): Gender Gaps in Education: The Long View. CGD Working Paper 523
9. MC Steffens, P Jelenec, P Noack (2010): On the Leaky Math Pipeline: Comparing Implicit Math-Gender Stereotypes and Math Withdrawal in Female and Male Children and Adolescents. J Educ Psychol 102(4)
10. K Hoff, J Walsh (2018): The Whys of Social Exclusion: Insights from Behavioral Economics. World Bank Research Observer 33(1)
11. E Riley (2022): Role Models in Movies: The Impact of *Queen of Katwe* on Students' Educational Attainment. Review of Economics and Statistics
12. G Ellison, A Swanson (2010): The Gender Gap in Secondary School Mathematics at High Achievement Levels: Evidence from the American Mathematics Competitions. Journal of Economic Perspectives 24(2)
13. R Jensen (2010): The (Perceived) Returns to Education and the Demand for Schooling. Quarterly Journal of Economics 125(2)