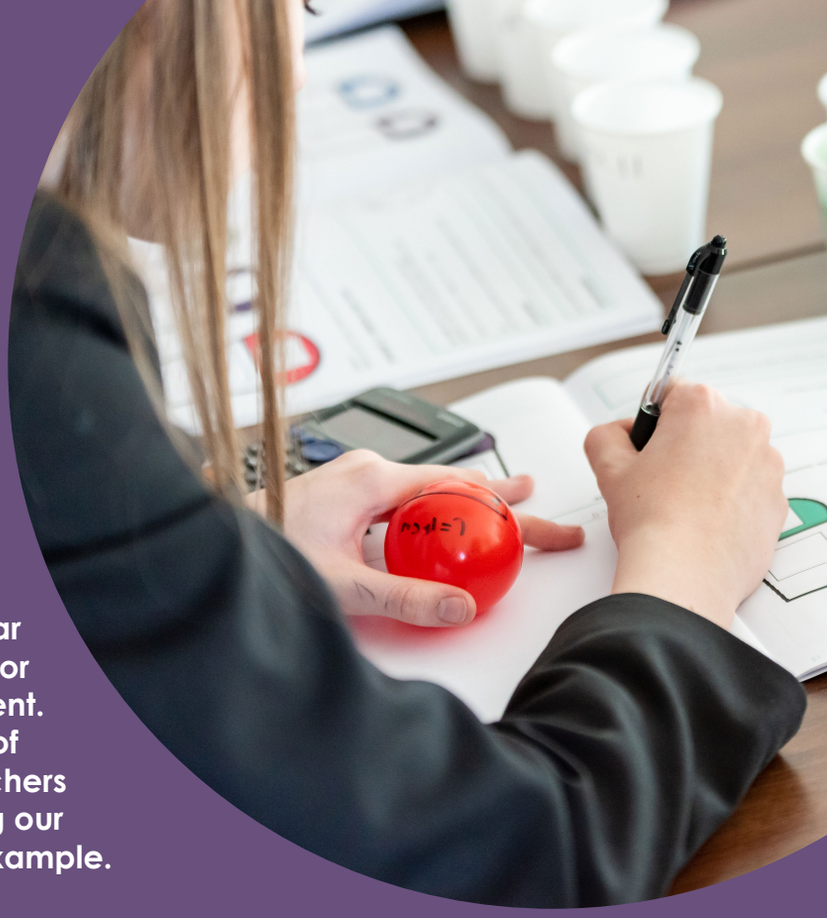
Researchers in Schools

Impact in Focus: Women in STEM



The challenge of getting more young women to choose STEM subjects (in particular maths and physics) at A Level, degree and for their careers is well documented but persistent. This document explores why there is a lack of female representation in STEM and how teachers can help to break down these barriers, using our Researchers in Schools programme as an example.

We know that, despite achieving similar results at GCSE, girls are less likely to go on to study maths or physics at A level. This creates barriers to access for STEM degrees, many of which continue to be male dominated. This, in turn, has implications for the whole STEM pipeline: we see that women are under-represented at almost every stage, making up only 24% of the core STEM workforce (Wise, 2019).

The lack of female representation in maths and physics is reflected in entrants to ITT routes. Whilst women made up 61% of secondary school postgraduate ITT entrants in 2019, this dropped to 50% for maths trainees and to just 31% for new physics entrants (ITT Census, 2019).

Women as a percentage of ITT entrants*

*(ITT Census, 2019)

ITT Entrants	Maths	Physics
61%	50%	31%

Why this problem persists

Low confidence amongst girls in maths and physics, a lack of female representation in STEM subjects and limited knowledge of science careers are all suggested to be barriers to uptake (IFS, 2019; Teach First 2020; Aspires, 2013).

"Our students need more exposure to role models who can mentor them on their journey and help them see possibilities beyond their present circumstances."

Dr Esther Sample (Maths, 2018 Cohort, Northampton)

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The RIS Programme

The RIS programme offers a tailored route into teaching exclusively for PhD graduates.

We believe RIS is contributing to addressing this challenge by recruiting female physics and maths PhD graduates in to teaching who might not otherwise have considered the profession. We hope that as a result, the pupils our participants teach, get to see that an academic research career in a STEM subject is accessible to all and that studying STEM subjects can lead to a diverse range of careers.

We support all our teachers (regardless of gender) to think about how they can address inequalities in achievement and aspiration through their classroom teaching and by running extracurricular activities.

For more information on the programme and how you can get involved, please email us via hello@researchersinschools.org or visit our website at thebrilliantclub.org/ris

"I get to channel my passion for science and environmental education into all aspects of my teaching. I am afforded the time to pursue STEM interventions that are designed to provide multiple benefits to the students beyond the classroom, including a greater awareness of their abilities and potential opportunities. It is beyond gratifying when a student approaches with an idea for a project or to express their desire to pursue a career in STEM because of the work that they have done with you."

Kimberly Ferran
(Science, 2018 Cohort, London)

STEM projects delivered in 2019/20

Dr Carly Matis (Science, 2017 Cohort, Manchester) ran a robotics club and arranged for them to host pupils from around the world for an international robotics competition.

Dr Christianah Oluwadare (Maths, 2019 Cohort, Luton): Registered her school for the UKMT Junior Maths Challenge and ran a Maths Challenge club for KS3 students alongside gaining QTS.

Dr Paulina Guerrero Gutiérrez (Science, 2018 Cohort, Essex) used her contacts across academia to run a programme of 'Skype a Scientist' sessions to enable her students to interview current science researchers about their careers and discoveries.

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