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Science Camp for High School Girls in Tanzania

by Profs. Najat K. Mohamed, Margaret Samiji, and Eunice Mureithi (University of Dar es Salaam, Tanzania).

Tanzanian women in the STEM related fields and careers are generally fewer in number. This is sadly true in the vast number of countries in Africa. The situation is especially worse in physics and mathematics due to gender stereotypes. The participation and success by women in tertiary education or research depends on the quality of their education at lower levels. The number of women in STEM at the university level is correlated with their number at the secondary school level as well as their performance at that level. To address this gender imbalance, the Departments of Physics and Mathematics at the University of Dar es Salaam, with the support of the International Science Programme (ISP), launched a Science Camp Project for high school girls. This project targeted young women of ages between 17-19 years in order to improve their STEM abilities and their performance on their examinations. The project started in 2016, with advanced women students from Government schools in Dar es Salaam with the hope of expanding to other regions in Tanzania.

The main objective of the project is to increase the number of women entering the universities to study STEM subjects or pursue STEM-related professions. Specifically, the project aims to 1) strengthen their physics and mathematics knowledge and abilities in topics in the A-level syllabus, 2) strengthen their practical skills through hands-on demonstrations and practical sessions, 3) enlighten the young women who are studying mathematics and physics about their career opportunities, 4) provide mentors for these students in order to build their interest and confidence, and 5) improve the capabilities of A-level teachers in mathematics and physics.

Three one-week science camps (2016-2018) have been organized so far. A total of 75 high school girls and 18 physics and mathematics teachers have benefitted. The project is run by four female faculty members (one Professor of Mathematics, two Senior Lecturers in Physics and one Lecturer from Mathematics) in collaboration with the men from the two departments. The senior women also act as role models and mentors for the younger women. The teachers and the students select the topics to be covered. These topics are those which they find challenging to teach or understand. During the Science Camp Week, the students participate in demonstrations to increase their interest and understanding. In addition, the students do practical sessions in physics laboratories to develop the hands-on skills needed for the A-level physics curriculum. The participating teachers take part in the learning process and, hence, improve their competence in the topics that they find especially challenging. The teachers are also given handouts on these challenging topics and learn different methodologies of teaching them.



Participants of the 2017 Science camp for girls at the Physics Department, University of Dar es Salaam



A-level schoolgirls during practical session at the Physics Laboratory, University of Dar es Salaam