

Global Young Academy
Young Scientist Ambassador Program (YSAP) and Science Education for Youth (SEY)
Science Diplomacy Caravan



Project Coordinators
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Sasha Kagansky (UK/Russia)

County of Destination:
Cambodia

Time of Visit:
12-16 May 2018



Ambassadors:

Hong Ching Goh, (Malaysia)
Kit Chan, (UK/Australia)
Rothsophal Nguon, (Cambodia)
Sasha Kagansky, (UK/Russia)

Mission Report

YSAP + SEY = the Caravan activities overview

Objectives of the idea

- a) Increase collaboration and engagement between GYA members in multiple working groups, cross disciplines and from different countries for science education outreach and research development.
- b) Establish a platform for GYA members to share their research results and skills with underprivileged children/students and professionals at the community level
- c) Increase the visibility of GYA in Cambodia through the teachers' community
- d) Initiate the establishment of an equitable mobile laboratory to increase access and exposure to STEM (science, technology, engineering, and mathematics) experiments in rural areas
- e) Enhance the interest in STEM careers at an earlier age (elementary, secondary, and high school levels) through the exchange of teaching methodologies, resources, and best practice in STEM instruction.

Background:

STEM education is highly promoted by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) as well as regional institutions like European Union, Association of Southeast Asia Nations, and many other regions to increase fundamental science knowledge and skills among children and youth. This year the Global Young Academy (GYA) 'caravan' team has initiated a capacity building and science advocacy workshop for elementary/high school teachers in Siem Reap. The science-diplomacy caravan brings together young scientists

with diverse scientific backgrounds and countries to share their recent research results and teaching methodology for creative and experiment based classroom. This initiative is designed to offer professional development, continuing education and support for teachers who are in need of technical assistance to prepare their students to become future scientists.

This project aims to organize a science-diplomacy for the peace caravan in three countries that are affected by humanitarian crises, namely Afghanistan, Cambodia, and Syria. The science-diplomacy caravan brings together young scientists with diverse scientific backgrounds and nationalities, who will visit and provide:

- a) A two-day capacity building and science advocacy workshop to 30 elementary school teachers in each of the three targeted countries (total 90 teachers);
- b) A three-day visit workshop about learning basic science skills to some 300 children living in marginalized areas in the three target countries (about 100 children from each country).

Cambodia was chosen as a pilot study for the science-diplomacy for peace caravan due to the proximity to the venue of the eighth GYA-AGM (in Pattaya, Thailand, May 2018). Thus, after the AGM and the YSAP WG outreach at Borapha University Chonburi campus, the Caravan team led by Sasha Kagansky and Rothsopal Nguon, followed by Hong Ching Goh (Malaysia), and Kit Chan (UK/Australia) crossed over from Thailand into Cambodia to launch the project in Siem Reap province during 12-16 May 2018.

The second phase will take place tentatively in other ASEAN countries, Afghanistan or Syria depending on available funding and local collaborators.

Besides, the caravan team will set up a mobile science laboratory that could serve remote schools in the northern parts of Cambodia (i.e. Siem Reap, Oddar Meanchey and Preah Vihear provinces). The mobile laboratory will consist of tools and equipment with which teachers can demonstrate basic K-12 science education experiments. The mobile-science station caravan, in which GYA members and local researchers are partners, can reach out to children from local communities and engage with them in a series of basic science-lab activities and experiments. In addition, the caravan platform will also allow for informal education opportunities for their parents, relatives, and other community members who can observe the outreach activities.

The objectives for the mobile library are ambitious, despite the slow progress of education development across Cambodia. Due to the tragedy of the civil war there is still a learning crisis in Cambodia. Although student attendance is improving at schools, they lack the basic education in skills and proficiencies that would allow them to continue in a STEM career.

The Caravan Activities in Cambodia:

After the eighth GYA-AGM in Pattaya, the project team headed to Siem Reap, Cambodia on the 12th May 2018. This pilot trip was a joint initiative between WG: YSAP and WG: SEY as part of the GYA science education outreach. The two working groups combined funding and resources to conduct outreach workshops on both life skills and STEM knowledge improvement for under-privileged communities.

The team began on the 13th of May with 20 high school students at a boarding house of the Cambodia Education Development Fund ([CEDF/ Opt-Cam](#)) in Siem Reap town. These students are from low income families in the rural parts of Siem Reap, near the Tonle Sap, at Anlong Samnor village. The majority of these students' family members have not completed secondary

education, and the entire district has limited access to clean water and electricity. They are placed in the city in order to obtain a better quality of learning experience and the opportunity to gain from urban living.

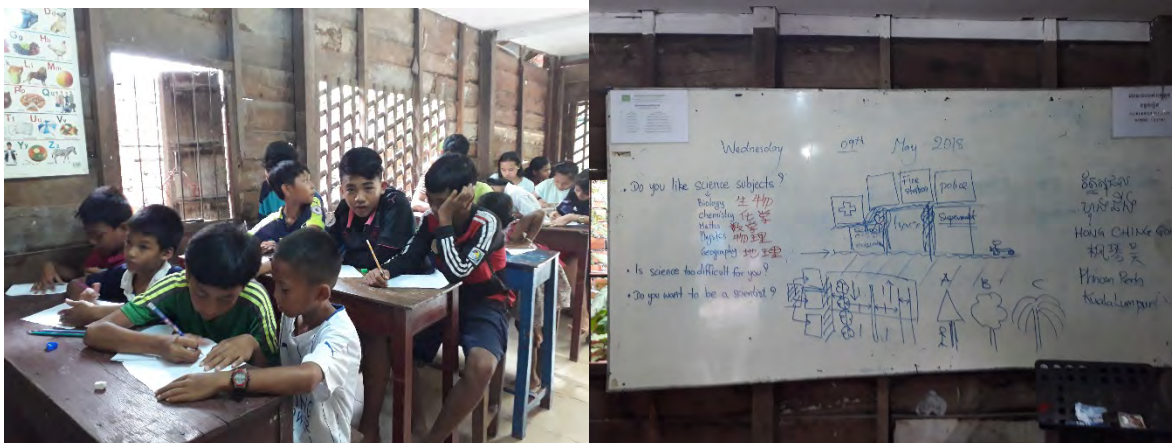
Firstly, the caravan ambassadors introduced themselves and told short stories about their studies and career experience to inspire the students to work hard in high school and keep up their education to graduate levels. Secondly, students were allowed to ask the caravan ambassadors any questions that allow them to learn more about university life and their dream careers. Thirdly, students were assigned to work in groups to design their own village employed the concepts of urban planning. This workshop aims to raise awareness on STEM education as a fundamental solution to the needs of the community.



On the 14th of May, the team met a group of 25 local teachers from 10 schools, either public, private, or NGO based. The Caravan ambassadors introduced themselves and the GYA briefly, then allowed the participants to interact in groups to share their experiences in teaching STEM subjects. Afterwards they discussed in groups how to identify good practices and solutions to solve these challenges. The workshop not only provided an opportunity for local teachers to learn from one another, but also to interact with our education ambassadors who were able to share teaching techniques and online available materials through their ASEAN contacts. At the end of the workshop the participants expressed their happiness and acknowledged the great benefits learnt through discussion and sharing.



Later that afternoon the team also visited an organization called Building Your Future Today (BFT), where they interacted with 35 children aged 10-16 years old. The students were asked to draw and describe a scientist. Furthermore, the students were taught how to use a microscope.



Then on May 15th the team visited another organization called Future for Khmer Children (FKC), to conduct a science experiment workshop based on elementary biology and chemistry education for the 90 children in attendance. The objective of this workshop was to observe the stereotypes about scientists and introduce more interactive classroom activity by integrating music and art as a part of the STEM-based teaching and learning methodology.



In total the caravan team reached out to 3 NGOs and 10 schools, trained 31 teachers (6 are on site) and had direct interaction with 145 children. As a result, all workshops have successfully achieved the expected outcomes, as teachers and students enjoyed the discussion and sharing ideas through this learning platform. The teachers expressed their appreciation for all the tools, techniques and resources shared by GYA members. They also admired and were committed to adopting the caravan workshop arrangement style in their classroom activities. They wish to have more teachers undergo training within the expertise of the GYA network as a follow up.