

# Parallel STEM Challenge Running in China and USA

By Dr. Winnie Wong - EEF President



青樹教育基金會

## EVERGREEN EDUCATION FOUNDATION

2022 Annual Letter

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One of Evergreen's main partners, The Li Geng Sheng Project (LGS) of Peking University in China, developed a STEM challenge for kids in China between May through August 2022. This challenge was modeled and adapted from the content and instruction from the 2022 Fluor Challenge created by Science Buddies: see <https://www.sciencebuddies.org/fluor-challenge>.

LGS translated the Fluor Challenge from English into Chinese and administered its own challenge, including introducing seminars, coordination teams, judges, evaluation, and awards in China. Evergreen partnered with LGS on this project by coordinating 2 teams from EDNova Academy in the USA that did the same Fluor Challenge in parallel. Evergreen aims to use this opportunity to set up online exchanges between China and US student participants to share their ideas, experiences, process, and results across the two countries.

STEM projects have been an important small project focus for Evergreen: Evergreen's partnership with LGS provides additional opportunities to continue Evergreen support for STEM project initiatives in rural China.

Submissions from several teams' participating in the LGS project in Anhui and Henan provinces, China, and the USA are illustrated in this report.



*Student participants in China (courtesy of LGS)*

# Evergreen Paper Ball Run challenge

By Rosemary Huang

In the afternoon of October 23, 2022, Evergreen volunteers organized an activity with seven children from Hillview to attempt the Paper Ball Run challenge. The project is meant to help kids think about physics, such as kinematics, force of gravity, while also following the engineering design process.

First, after getting the extremely energetic children to settle down, we explained the overall objective: to design a structure that would allow the ball to roll for as long as possible before hitting the ground while using the least amount of paper. Then, after listing several main ideas such as friction that would steer their designs in the right direction, we allowed time for individual brainstorming. After brainstorming, we had them all share their ideas so that they could discuss how others were tackling the problem. This mirrors the “planning” process of engineering design. Then, after letting them choose groups, we had them redraw a combined design for their structure.



We let the children have complete freedom when it came to construction. Some started working to ensure they had a strong foundation and others worked to build good support poles for their structures. Many had to troubleshoot or use their problem solving skills to redesign their structures when they realized that their original idea wouldn't be possible with the time and materials they had. This stage reflects the “creating”, “testing”, and “improving” aspects of the engineering design process and the children really worked hard.

After either the timer was up or the groups felt they did the best they could, we timed how long it took for the ball to roll through the structure to the ground. The group in first place managed to get a score of 16! Overall, most of them really enjoyed this experience, saying it helped them improve their problem solving and teamwork skills.

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### VISION:

Every Child in Rural China Has  
Access to Relevant Educational  
Opportunities

### MISSIONS:

To improve education opportunities  
To promote information literacy  
To bridge between China & the  
world

### VALUES:

Bringing education opportunities  
to rural China

## Robotics Engineering Design Summer Workshops in Evergreen School Classrooms

This summer, EEF collaborated with three high school students – Deborah Ang, Ella Yu, and Mingchuan Liu – to bring robotics to Tonghe Primary School, Shacheng No.4 Middle School, and Tongfu South Street No.1 Middle School. The three high school students created a curriculum for online teaching; the LGS Project of the Beijing University, Department of Information management purchased nine kits for the schools. The six-week long workshop introduced students to the Engineering Design Process, which is a new way of problem solving by developing creative solutions based on the failures of past iterations. After completing several guided exercises in building a basic robot and programming with sensor input, students were tasked with completing some missions on their own. The students exhibited high levels of engagement and demonstrated creativity and perseverance in their work.

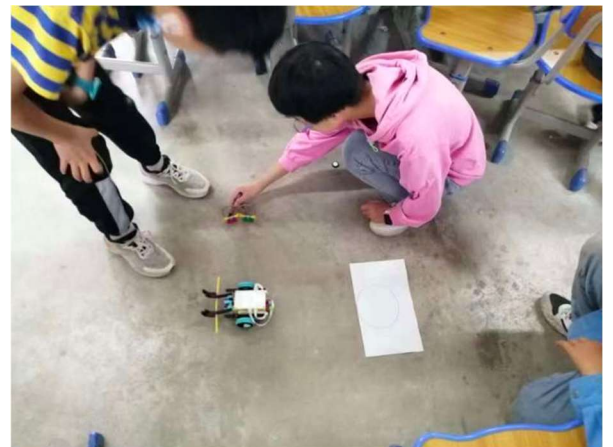
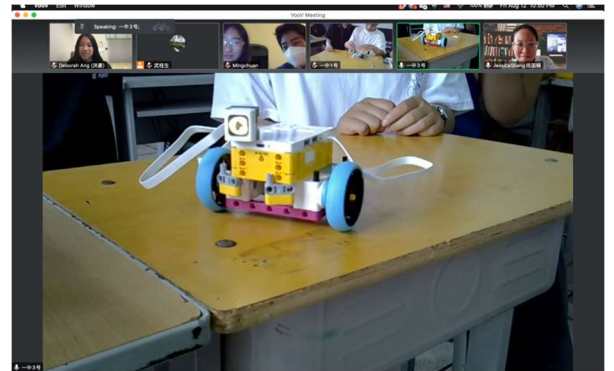
Teacher Liu reflected on the class: “At the beginning, the kids had no idea what robotics was; now they can write code, which controls the robot to accomplish a designated task. They have made tremendous strides that would not have been possible without the very patient explanation and guidance from the teachers. We will definitely continue with the program so that more kids will have opportunities to learn about robotics and cultivate their interest in programming.”

Special thanks to the following people:

- (1) **Deborah Ang** (11th grader at Phillips Exeter Academy and founder of [Robotica Institute](#), an outreach organization that focuses on spreading robotics to K-12 students with limited access to STEM); **Ella Yu** (10th grader at College Preparatory School); and **Mingchuan Liu** (9th grader at Head-Royce School) for providing the curriculum and executing the lessons.
- (2) **Instructor Dai**, for sourcing and arranging for the purchase and delivery of the kits.
- (3) **Head Instructor Jessica Shang**, and Instructors Liu, Yang, and Wu for facilitating the lessons.



Photos of student participants in China (courtesy of LGS)



# EEF Funds Prof. Wang et al to Roundtable for the Development of Rural and Community Libraries

In order to promote the high-quality development of the rural and community library industry, from October 28 to 31, 2022, the Private Library Research Group of the Information Management Department of Peking University, the Love Reading Foundation, the Xinh Foundation, and the Wanjia Library co-sponsored the first national "Roundtable for the Development of Rural and Community Libraries." The meeting was held in Xiamen and organized by the Fujian Bird's Nest Public Welfare Service Center for Student Aid, Fujian Xiashu Student Aid Public Service Center and Xiamen Bird's Nest Reading Project.

A total of 41 representatives from 39 institutions participated in this meeting. To learn about their operating models and ways of participating in social governance, participants visited local grassroots non-governmental libraries, such as Xiamen Gangtuo Firefly Public Library, Gaodian Public Library, and New Xiamen People's Library. The meeting included keynote reports, round table discussions and other activities. In-depth discussions and exchanges were conducted on the current situation and future of rural and community libraries in China. Discussion focused on the role and significance of libraries in community governance and rural revitalization, and how to build rural and community libraries.

Evergreen supported rural library development efforts by providing a total of 8876 yuan in travel funds for Wang Zizhou, Qiu Lu, Han Ying and Ma Yuxin, members of the private library research group of the Information Management Department of Peking University.

I want to support rural education in China by donating to Evergreen Education Foundation:

## STEM Programs

- \$50 will support one day of a teacher's workshop lodging
- \$150 will give one way teacher's workshop travel expenses
- \$500 will fund a teacher to attend an entire workshop

## General Funds

\$ \_\_\_\_\_



## Donation Total

\$ \_\_\_\_\_

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