

## HANG LUNG MATHEMATICS AWARDS

The Hang Lung Mathematics Awards is a biennial mathematics research competition for secondary school students in Hong Kong. Founded in 2004 by Mr. Ronnie C. Chan, Chairman of Hang Lung Properties Limited, and Professor Shing Tung Yau, a world renowned mathematician and a Fields Medalist, the objective of the competition is to encourage secondary school students to realize their creative potential in mathematics and sciences and stimulate their passion for intellectual discovery. Schools are invited to form teams of up to five students. Under the supervision of a teacher, each team decides on a mathematics topic, designs and carries out a mathematics research project, then submits a research report that summarizes the methodology, research, and results. A Scientific Committee will evaluate the research reports in a rigorous, multi-step review process that is comparable to publishing an article in a scientific journal, and determines the teams that will be invited to participate in an oral defense. The oral defense is modeled after the doctoral dissertation defense, and is comprised of a brief public presentation of the research project, followed by a closed-door inquiry by the Scientific Committee. At the conclusion of the oral defense, the Scientific Committee will decide on the winners of the Hang Lung Mathematics Awards, and the results will be announced at an awards presentation ceremony the following day.

The Hang Lung Mathematics Awards is co-organized by Hang Lung Properties, the Institute of Mathematical Sciences and the Department of Mathematics of The Chinese University of Hong Kong (CUHK). Hang Lung Properties donates over HK\$2 million to each competition, of which HK\$1 million is set aside as monetary prizes, and the remainder goes towards the academic consultancy, assessment process, professional adjudication, administration of the competition, educational resources, as well as guidance and mentoring. The Department of Mathematics of CUHK offers tuition scholarships of more than HK\$500,000 for teachers nominated by the winning schools to enroll in the Master of Science (MSc) in Mathematics program, and handles the academic and educational aspects of the competition.

At each Hang Lung Mathematics Awards, up to eight awards will be presented to recognize those mathematics research projects that meet the highest academic standards in terms of methodology, originality, research, and scholarship. The eight awards are: a Gold Award, a Silver Award, a Bronze Award, and up to five Honorable Mentions. Each Award has four components: a Student Education Award, a Teacher Leadership Award, a School Development Award, and a Tuition Scholarship for the MSc in Mathematics program at CUHK.

Each winning student and teacher will receive a crystal trophy, a certificate, and a monetary prize; the school will receive a crystal trophy and a development award. The monetary prizes include a Student Education Award to be shared equally among team members and applied towards their university studies; a Teacher Leadership Award for the supervising teacher; and a School Development Award to promote mathematics education at the school. Each winning school may also nominate a teacher to receive a Tuition Scholarship from CUHK to earn an MSc in Mathematics at the University.

Etched inside the crystal trophy is a representation of a Calabi-Yau manifold. Named after mathematicians Eugenio Calabi and Shing Tung Yau, Calabi-Yau manifolds form a special class of surfaces used in algebraic geometry and theoretical physics. They are spaces with multiple supersymmetries. In modern theory, the universe is a ten-dimensional space consisting of a four-dimensional space-time, together with a six-dimensional Calabi-Yau manifold curled up everywhere every moment.

To learn more about Hang Lung Mathematics Awards, please visit:  
<https://hlma.math.cuhk.edu.hk>