
News: CUHK Mathematics Young Scholars Win Internally Renowned Awards*

Three young scholars of the Department of Mathematics, The Chinese University of Hong Kong (CUHK) have recently won internationally renowned mathematics awards in recognition of their outstanding achievements and efforts in mathematical research. **Prof. Lui Lok-Ming, Ronald**, Associate Professor, has received the Morningside Silver Medal of Mathematics, **Prof. Qiu Yu**, Research Assistant Professor, has received the International Conference on Representations of Algebras (ICRA) Award and **Dr. Ma Ziming**, a PhD graduate, has received the New World Mathematics Awards (Doctor Thesis Award – Gold Prize). CUHK is the only university in Hong Kong to have won these awards.

Prof. Chan Hon-Fu, Chairman of the Department of Mathematics of CUHK and a SIAM Fellow, is delighted to see CUHK win internationally renowned mathematics awards. He said, “Our Department is dedicated to world-class research and nurturing young talents. I am proud that once again our colleagues and student have been awarded distinguished prizes in world-class mathematical conferences. Their accomplishments have re-affirmed our leading position among the top institutions in the field of mathematics.”

Prof. Lui Lok-Ming, Ronald was awarded the “Morningside Silver Medal of Mathematics” this year for his pioneering contributions on computational quasiconformal geometry and its application to medical imaging, computer visions and graphics. Computational quasiconformal geometry aims to accurately analyze the deformation patterns of geometric shapes. It has been widely applied to computer

graphics, computer vision and other fields. In medical sciences, it can be used to detect the abnormalities of human organs and help medical teams to analyze the illness. Prof. Lui obtained his master degree and PhD degree from the University of California, Los Angeles under the supervision of Prof. Tony F. Chan. He then pursued postdoctoral studies at Harvard University under the supervision of Prof. Yau Shing-Tung. He joined the Department of Mathematics of CUHK in 2010. Prof. Lui has remarkable accomplishments in research and teaching. He has received various awards including the New World Mathematics Awards (Doctor Thesis Award – Silver Prize), an Exemplary Teaching Award from the Faculty of Science of CUHK and Phi Tau Phi Scholarship. His research focuses on solving fundamental problems in computational quasiconformal geometry on general Riemannian surfaces and applying them to real world applications such as human brain mapping. This can help to effectively study human brain structures and brain diseases through rigorous mathematical formulation and algorithms. This newly developed mathematical technology is also widely applied to computer vision, computer graphics and image processing.

Prof. Lui is glad to receive the “Morningside Medal of Mathematics” which is regarded as the Fields Medal of the Chinese community. He said, “I am deeply honored to receive this prestigious award. This award gives me a great encouragement and motivation to keep working hard to strive for excellence in my research career. In the future, I will strive to push forward the field of computational quasiconformal geometry, and to apply it to various areas, such as in medical imaging and computer visions, to benefit society.”

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Prof. Qiu Yu is one of the two winners of the ICRA award for his contributions in the study of stability conditions and braid groups actions in Calabi-Yau categories. His researches come from String Theory in Physics and Homological Mirror Symmetry in Mathematics. Prof. Qiu applies Representations of Algebras and Topology to study spaces of Bridgeland's stability conditions. Prof. Qiu obtained his PhD degree from the University of Bath. After graduation, he became a visiting scholar of the Université de Sherbrooke and pursued postdoctoral studies at the Norwegian University of Science and Technology. His research interest is the intersection between Representation Theory and Algebraic Geometry.

Prof. Qiu Yu said, "I am honoured to receive the award. It is a great encouragement to me. I would like to learn more about Mirror Symmetry from Prof. Conan Naichung Leung and other professors to further study stability conditions on Calabi-Yau categories and their applications to Dynamical System and Cluster Algebras."

Dr. Ma Ziming, a PhD graduate in Mathematics of CUHK, was awarded the New World Mathematics Awards (Doctor Thesis Award - Gold Prize) in recognition of his research on Mirror Symmetry in his outstanding PhD thesis. In his thesis "From Witten-Morse Theory to Mirror Symmetry", Dr. Ma extends Witten deformation, Prof. Witten's famous theory, to Morse category. Dr. Ma then adds Algebraic structure into the theory and explains Kontsevich-Soibelman's work on Scattering Diagram. Dr. Ma's theory is critical in resolving the Strominger-Yau-Zaslow conjecture of String Theory. Dr. Ma obtained a Bachelor Degree in Mathematics with first-class honours from CUHK in 2008. He then pursued his studies in a master degree and a PhD degree at CUHK under the supervision of Prof. Conan Naichung Leung. After graduation from CUHK in 2014, he became a Postdoctoral Fellow at Harvard University. He is now an Assistant Professor at the Department of Mathematics of National Taiwan University.

Dr. Ma said, "I am honoured that my thesis receives recognition from academia. I would like to express my gratitude to the Department of Mathematics of CUHK for providing me with an excellent learning environment and Prof. Leung Naichung, Conan's guidance. It enabled me to have a fruitful and joyful life during my PhD studies."

The academic performance of the Department of Mathematics of CUHK is well-accredited worldwide.

The professors and students have won various internationally renowned mathematics awards. According to the World University Rankings by Subject 2016 of Quacquarelli Symonds (QS), the Department of Mathematics of CUHK was ranked 27th in the world, 3rd in Asia and 1st in Hong Kong for its brilliant standing in academic and employer reputation, citations per paper and impacts of papers.

The Morningside Medal of Mathematics

The Morningside Medal of Mathematics is awarded to outstanding Chinese mathematicians under the age of 45 for their achievements in pure, applied and computational mathematics. A committee of internationally renowned mathematicians selects the medalists. The medals are presented at the triennial International Congress of Chinese Mathematicians (ICCM) which is a premier event that brings together Chinese and overseas mathematicians to discuss the latest research developments in pure and applied mathematics.

International Conference on Representations of Algebras (ICRA) Award

The ICRA Award is awarded to outstanding mathematicians under the age of 35 for their outstanding work in Representations of Finite Dimensional Algebras. The award is presented at the biennial International Conference on Representations of Algebras. The conference is a premier event that brings together mathematicians from different countries to discuss the latest research developments in Representations of Algebras.

New World Mathematics Awards

New World Mathematics Awards are awarded to outstanding Chinese mathematics students for their theses, encouraging them to continue their mathematical researches. Winners are selected by review committees, formed by world-renowned mathematicians, from submissions by Chinese undergraduate, master and PhD mathematics students from around the world.