# DEPARTMENT OF MATHEMATICS

# The 10<sup>th</sup> Epsilon Fund Award to Top Students

The Epsilon Fund Award was established in 2006 with donations from faculty and staff at the Department of Mathematics, or from the departmental fund to honor excellent students, including undergraduates, postgraduates and post-doctoral researchers who excel in mathematical scholarship and research.  Some fifty students were awarded since its establishment.  This year seven students get the award and two students obtain honorable mention.  Each of them possesses very high cumulative grade average, especially in mathematics subject, and some have received multiple graduate program offers from famous universities.

## Seven Mathematics students receive the Epsilon Fund Award

## Two postgraduates:

1.    **Chang LIU (Year 3; PhD)**

    劉 暢

    三年級哲學博士(數學)研究生

Chang LIU is now our year-three student pursuing the PhD study.  "Mr. Chang Liu has made great progress in the development of unified scheme for the computational fluid dynamics.  By using the fast spectral method to solve the Boltzmann collision term, he constructed a new gas kinetic scheme for accurate computation of rarefied flows.  The new scheme becomes one of the most advanced numerical methods for non-equilibrium flow computations.  New reliable solutions can be obtained in the whole flow regimes from free molecular flow to the continuum Navier-Stokes solutions," remarked Liu Chang's research supervisor, Professor Kun Xu, who highly recommends Liu Chang for the award.  Professor Xu continues, "One of the breakthroughs is that the new method can present the physical solutions where the Navier-Stokes equations are not applicable, such as low Reynolds number and high Knudsen number cases.  His contribution to the fluid dynamics is that the scheme can be used to quantitatively evaluate the validity of the Navier-Stokes equations in different flow regimes."  After the successful development of the unified scheme for the neutral gas, Liu Chang is now working on the plasma simulation.  "The developed scheme will have a great impact for the plasma study in space science and inertial confined fusion", said Professor Xu.

**2.** **Fengwei ZHOU (Year 4; PhD)**
周 峰 暐
四年級哲學博士(數學)研究生

Fengwei ZHOU first came to the Department of Mathematics in 2011 pursuing the PhD study. Professor Bei-Feng Chen, his research supervisor, said, "Arithmetic matroid was introduced recently which is a matroid with certain arithmetic properties specified, it is closely related to toric arrangements. Arithmetic Tutte polynomial is an important invariant for arithmetic matroids like the role of Tutte polynomial for ordinary matroid. Fengwei made a few interesting improvements on the subjects. He gave a combinatorial interpretation for an axiom of arithmetic matroid. For some special (an infinite family class) representable arithmetic matroids, he obtained comparison formulas on the coefficients of the Tutte quasi-polynomials. He also introduced a new notion of Z-closure which is finer than ordinary closure operation of matroid. The results are a new structure of Z-flat lattice." Fengwei has done well in his research. He is also a good tutor. He was one of the recipients of the Din-Yu Hsieh Teaching Award for the best teaching assistant in 2012.

## Five undergraduates:

**1.** **Anbang HU (Year 3; 3Y AM)**
胡 安 邦
三年制:三年級理學士(數學) - 應用數學本科生

Anbang HU is currently our third-year student pursuing the Bachelor of Science (Mathematics) Degree and enrolling in the Applied Mathematics Option. He is also doing an additional major degree program in Computer Science. Anbang is the top UG student in the AM option. He obtains an excellent GPA of 4.099 and has been on the Dean's List since Fall semester of 2011. Anbang has been awarded scholarships such as the George K Lee Foundation and the Cheng Foundation. He has done a one-semester exchange program at Columbia University in the City of New York. He will continue his master degree in Computer Science at Carnegie Mellon University next year.

**2.** **Hongzi MAO (Year 3; 3Y GM)**
毛 宏 自
三年制：三年級理學士(數學) - 綜合數學本科生

Hongzi MAO is an outstanding third-year student pursuing the Bachelor of Science Degree in two separate major programs - Mathematics and Computer Science.  He has an excellent GPA of 4.018.  Professor Kin Yin Li said, "Hongzi ranked in the top 3 in the MATH 3033 (Real Analysis) course in 2014 among 163 studen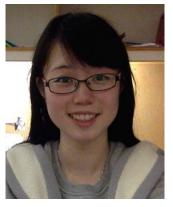ts.  In the summer of 2014, he was one of the few HKUST UG students selected to participate in a summer research project at MIT."  Hongzi has been awarded numerous scholarships including the Cheng Foundation, the Paul Ching Wu Chu Scholarship, the China Merchant Scholarship and the School of Science Scholarship.  He was the recipient of many awards such as the SIGCHI Best of CHI Honorable Mention, the ACM MobiCom Best Demo Award and the HKUST Academic Excellence Award.  Hongzi has received PG offers from UW, Cornell and MIT.  For the coming year he will be going to MIT for a PhD program in EECS.

**3.** **Ye ZHANG (Year 3; 3Y MAEC)**
張 曄
三年制：三年級數學(數學與經濟)理學士本科生

Ye ZHANG is currently our third-year student pursuing the Bachelor of Sciences Degree in Mathematics and Economics program.  Professor Kin Yin Li remarked that with an excellent GPA of 3.966, Zhang Ye ranked number 1 in MATH 3033 (Real Analysis) course in 2013 among 163 students.  She was also number 1 in MATH 4061 (Topics in Modern Analysis) course in 2014.  Zhang Ye is the recipient of numerous scholarships such as the Scholarship Scheme for Continuing Undergraduate Students from 2012 to 2014; the Fong Shu Chuen Scholarship; the China Merchant Scholarship and the Joseph Lau Luen Hung Charitable Trust Scholarship.  She is also active in extracurricular activities.  She won the table tennis tournament in 2012.  Due to her academic excellence, Zhang Ye has received PG offers from Columbia University, Northwestern University and University of British Columbia.  She chooses to have PhD study in Columbia University.

## 4.   Hoi Hei Janson NG (Year 3; 4Y PMA)
### 吳 鎧 希
### 四年制:三年級理學士(數學) - 純粹數學高級班本科生

Hoi Hei Janson NG is currently our 4Y third-year student pursuing the Bachelor of Science (Mathematics) Degree enrolling in the Pure Mathematics Advanced Track.  He is the topmost among all MATH UG students with an excellent GPA of 4.184.  He obtains A+ in all MATH honors courses and gets remarkable, excellent grades in courses of other disciplines as well.  Due to his academic excellence, he is recommended by Professor Min Yan to participate in the summer research program launched by University of Chicago.  Parts of the support come from the Mathematics Department.  Hoi Hei has been in the Dean's List since 2012 Fall and has received scholarships such as the Cheng Foundation Scholarship, the Wing Lung Bank Scholarship and the University Scholarship.  He has plans to pursue postgraduate study in US upon graduation in 2016.

## 5.   Hannan YANG (Year 3; 4Y SFM)
### 楊 翰 楠
### 四年制:三年級理學士(數學) - 統計及金融數學本科生

Hannan YANG is currently our third-year student studying the Bachelor of Science Degree in Mathematics with concentration in the Statistics and Financial Mathematics Track.  He gets a high GPA of 3.936.  Professor Man-Yu Wong said, "Hannan is a very good student.  He gets grade A for near all courses in Mathematics and Statistics.  He is the best student among all of his classmates in the Statistics and Financial Mathematics Track.  His name has been put in the Dean's List each semester due to his academic excellence.  I expect him to get the first class honors with Academic Achievement Award when he graduates in the summer of 2016."  Hannan gets the Academic Excellence Award from University, the Scholarship scheme for continuing students and the Joseph Lau Luen Hung Charitable Trust Scholarship.  He has study exchange in the University of California.

## Two Mathematics students receive Honorable Mention

1.   **Yifeng HUANG** 黃奕烽 (UG Year 3; 3Y AS) *left photo*

2.   **Siwei LI** 李思維 (UG Year 3; 3Y MAEC) *right photo*