

## Participants of Undergraduate Research Fellowship (URFP) Programme

\*Excellence in Poster Presentation

#Best Presenter

### 2019-20

| Name           | Curriculum        | Year | Project Title of Project/ Directed Studies Course   | Supervisor of Project/ Directed Studies Course                             | Project Title of Summer Research Internship  | Internship Supervisor  |
|----------------|-------------------|------|---|--|--|--|
| CHIU Pak Wing  | BSc (4)           | 4    | The transcriptional regulation of Irx3 and Irx5 in mouse inner ear  | Prof Mai Har Sham, School of Biomedical Sciences                           | --   | --   |
| Kong Wang Yeuk | BSc (4)           | 4    | Asymmetric (4+3) cycloaddition of epoxy enol silane with dienes catalyzed by Chiral Binaphthyl Disulfonic Acid  | Prof Pauline Chiu, Department of Chemistry                                 | Asymmetric (4+3) cycloaddition of epoxy enol silane with dienes catalyzed by Chiral Binaphthyl Disulfonic Acid and Derivatives | Prof Pauline Chiu, Department of Chemistry   |
| LAM Si Yu      | BSc (4)           | 4    | Determination of Breeding Grounds of the Siberian Rubythroat and Yellow-Breasted Buntings with Stable Isotopes and Geolocator Tracking                  | Dr Timothy C Bonebrake & Dr Caroline Dingle, School of Biological Sciences | --   | --   |
| LIANG Shuang   | BSc (4)           | 4    | Algebraic and analytic methods on complex algebraic geometry  | Prof Ngai Ming Mok, Department of Mathematics                              | --   | --   |
| SUN Xianlin    | BSc(ActuarSc) (4) | 4    | Bootstrap post-model selection inference under a general framework  | Prof Stephen M S Lee, Department of Statistics & Actuarial Science         | --   | --   |
| Tang Xun       | BSc (4)           | 3    | Adaptive numerical methods for long-time integration and model reduction with applications in computing effective diffusivity and Anderson localization | Dr Zhiwen Zhang, Department of Mathematics                                 | Demonstration of generic Quantum controllability under QAOA setting  | Prof Lin Lin, Department of Mathematics, University of California Berkeley               |
| TSANG Kin Ming | BSc (4)           | 4    | Representations of integers by mixed sums of weighted m-gonal numbers and squares   | Dr Benjamin R Kane, Department of Mathematics                              | --   | --   |
| Wong Yin Pok   | BSc (4)           | 4    | Synthesis of Luminescent Metal Complexes and their Functional Studies for Sensing   | Prof Vivian W W Yam, Department of Chemistry                               | Coordination chemistry and photophysical characterization of lanthanide complexes  | Dr Rebecca Abergel, Department of Nuclear Engineering, University of California Berkeley |
| XU Hongting    | BSc (4)           | 4    | The Role of ISM1 in hematopoiesis   | Prof Zhongjun Zhou, School of Biomedical Sciences                          | --   | --   |
| XU Wan         | BSc (4)           | 4    | Elucidating the Role of SOX10 in Neuroblastoma  | Dr Martin C H Cheung, School of Biomedical Sciences                        | --   | --   |

**2018-19**

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|-------------------------|------------|------|---|---|---|---|
| Gu Jiacheng             | BSc(4)     | 4    | Role of Long Non-coding RNAs in Cancer Stem Cells   | Dr Jiangwen Zhang, School of Biological Sciences      | Role of Phosphorylation of Ybx1 in the Translation Control of Maternal sqt RNA and Nodal Signaling Pathway in Zebrafish Embryogenesis   | Prof Karuna Sampath, Warwick Medical School, The University of Warwick    |
| Ho Sik Yin              | BSc(4)     | 4    | Use of CombiGEM-CRISPR in screening potential novel drug combinations for liver cancer  | Dr Alan S L Wong, School of Biomedical Sciences       | --  | --  |
| Kwan Hiu Lam Rachel*#   | BSc(4)     | 4    | Role of TRPC1-induced Ca <sup>2+</sup> -signaling in neuromuscular synapse development  | Dr Chi Wai Lee, School of Biomedical Sciences         | Role of TRPC1-induced Ca <sup>2+</sup> -signaling in neuromuscular synapse development  | Dr Chi Wai Lee, School of Biomedical Sciences                             |
| Lai Siu Lun Michael     | BSc(4)     | 4    | Using transparent brain to investigate spreading of neurodegeneration in Parkinson's disease  | Dr Raymond C C Chang, School of Biomedical Sciences   | Using neuronal tracing and passive transparent brain to visualize neuronal pathway  | Dr Raymond C C Chang, School of Biomedical Sciences                       |
| Lee Tak Wang Terence    | BSc(4)     | 4    | IAV PB1-F2 cytotoxic sequence mediates NLRP3 inflammasome activation via oxidative stress induction   | Prof Dong-Yan Jin, School of Biomedical Sciences      | Influenza A virus PB1-F2 cytotoxic motif promotes self aggregation to elicit NLRP3 dependent IL-1 $\beta$ release   | Prof Dong-Yan Jin, School of Biomedical Sciences                          |
| Leung Tsz Kin Calvin    | BSc(4)     | 4    | Oviposition preference and thermal tolerance of stag beetles (Family: Lucanidae)  | Dr Timothy C Bonebrake, School of Biological Sciences | --  | --  |
| Leung Yee Man           | BSc(4)     | 4    | Chloroplast genomes comparison of mycoheterotrophic Exacum paucisquamum and autotrophic Exacum tetragonum   | Prof Richard Saunders, School of Biological Sciences  | --  | --  |
| Shukla Yash Sanjaykumar | BSc(4)     | 4    | Autonomously-produced synthetic push-pull motif   | Dr Julian A Tanner, School of Biomedical Sciences     | Autonomously-produced synthetic push-pull motif   | Dr Thomas Ouldrige, Department of Bioengineering, Imperial College London |
| Wan Lok Yee             | BSc(4)     | 4    | Preparation of recombinant protein of adiponectin in E. coli and testing of its bioactivity in cell lines with adiponectin receptor expression and its potential effects on promoter activation of pituitary hormones | Prof Anderson O L Wong, School of Biological Sciences | Preparation of recombinant protein of adiponectin in E. coli and testing of its bioactivity in cell lines with adiponectin receptor expression and its potential effects on promoter activation of pituitary hormones | Prof Anderson O L Wong, School of Biological Sciences                     |
| Wang Chuwen             | BSc(4)     | 4    | Uniruled Projective varieties   | Prof Ngai Ming Mok, Department of Mathematics         | --  | --  |

## 2017-18

| Name                 | Curriculum | Year | Project Title of Project/ Directed Studies Course  | Supervisor of Project/ Directed Studies Course              | Project Title of Summer Research Internship  | Internship Supervisor  |
|----------------------|------------|------|--|---|--|--|
| Chan Chun Ngai       | BSc(4)     | 4    | Holocene climate changes in marginal Asian monsoon regions   | Dr Zhonghui Liu, Department of Earth Sciences               | Field investigation of lake status in Inner Mongolia   | Dr Zhonghui Liu, Department of Earth Sciences  |
| Cheung Man Him       | BSc(4)     | 4    | Elicidating the role of Dlc1B in motor neuron development  | Dr Martin Cheung, School of Biomedical Sciences             | --   | --   |
| Chu Ka Chi           | BSc(4)     | 4    | Investigation and Validation on Gene Expression During Development of nucleus Pulposus   | Prof Kathryn S E Cheah, School of Biomedical Sciences       | Investigation and Validation on Gene Expression During Development of Nucleus Pulposus - Hox Genes and Cell Surface Markers                                | Prof Kathryn S E Cheah, School of Biomedical Sciences  |
| Ding Anyang          | BSc(4)     | 4    | Palaeobiogeographic Analysis of Coelurosaurian Evolution   | Dr Michael D Pittman, Department of Earth Sciences          | --   | --   |
| Ling Yuet Fung       | BSc(4)     | 4    | Upper-ocean stratification in the polar North Atlantic and its impact on deep-water ventilation during past interglacials                        | Dr Benoit Thibodeau, Department of Earth Sciences           | Upper-ocean stratification in the polar North Atlantic and its impact on deep-water ventilation during past interglacials                                  | Dr Benoit Thibodeau, Department of Earth Sciences  |
| Man Pui Hei Marcus*# | BSc(4)     | 4    | Modulation of the cGAS-STING pathway by MERS-CoV   | Prof Dong-Yan Jin, School of Biomedical Sciences            | Modulation of the cGAS-STING pathway by MERS-CoV   | Prof Dong-Yan Jin, School of Biomedical Sciences   |
| Ng John Joson Quimpo | BSc(4)     | 4    | Synthesis of fluorescent chemical probes for detection of superoxide ions  | Dr Ho Yu Au-Yeung, Department of Chemistry                  | --   | --   |
| Poh Wei Church       | BSc(4)     | 4    | Design (modification), Synthesis, Characterization and Photophysical Study of Phosphorescent Organometallic Complexes                            | Prof Vivian W W Yam, Department of Chemistry                | Probing the Influence of the R-Zn-R Bond Angle in Dialkylzinc Complexes on the Lewis Acidity of the Zinc Metal Centre and Implications for Zinc Activities | Prof Ulrich Fekl, Department of Chemical and Physical Sciences, University of Toronto Mississauga          |
| Wang Jen-chieh       | BSc(4)     | 4    | Studies on the effects of stereochemistry on (4+3) cycloaddition to synthesize perhydroazulenes diastereoselectively                             | Prof Pauline Chiu, Department of Chemistry                  | Studies on the effect of stereochemistry on (4+3) cycloaddition to synthesize perhydroazulenes   | Prof Pauline Chiu, Department of Chemistry   |
| Wang Jianian         | BSc(4)     | 4    | Discrete-time series analysis on nomadic migration of historical china   | Dr Guodong Li, Department of Statistics & Actuarial Science | --   | --   |
| Yan Junran           | BSc(4)     | 4    | Role of centromere and kinetochore proteins in anoxia-induced suspended animation and recovery in <i>S. cerevisiae</i>                           | Dr Karen W Y Yuen, School of Biological Sciences            | The role of centromere, kinetochore and cell cycle checkpoint proteins in anoxia-induced suspended animation and recovery in <i>S. cerevisiae</i>          | Dr Karen W Y Yuen, School of Biological Sciences   |
| Zeng Ji              | BSc(4)     | 3    | L2 Estimates of d-bar Operator on Complex Manifolds  | Prof Ngaiming Mok, Department of Mathematics                | --   | --   |
| Zhou Ruiyi           | BSc(4)     | 4    | Adapting Scalable Correlated Electronic Structure Theory to Born-Oppenheimer Molecular Dynamics Simulations of Molecular Exited Electronic State | Dr Jun Yang, Department of Chemistry                        | Adapting Scalable Correlated Electronic Structure Theory to Born-Oppenheimer Molecular Dynamics Simulations  | Prof Roberto Car, Department of Chemistry, Princeton Institute for the Science and Technology of Materials |

**2016-17**

| <b>Name</b>          | <b>Curriculum</b> | <b>Year</b> | <b>Project Title of Project/ Directed Studies Course</b>  | <b>Supervisor of Project/ Directed Studies Course</b>               | <b>Project Title of Summer Research Internship</b>   | <b>Internship Supervisor</b>  |
|----------------------|-------------------|-------------|---|---|--|---|
| Ho Julian Xi Wei     | BSc(4)            | 5           | Role of miRNA-1 and -499 in maturation of human embryonic stem cell-derived cardiomyocytes in 3D tissue culture | Dr Wendy W Y Wong & Dr Kwok Ming Yao, School of Biomedical Sciences | --   | --  |
| Ni Haozheng          | BSc(4)            | 4           | Bootstrap approximation in time series modeling   | Dr Guodong Li, Department of Statistics & Actuarial Science         | --   | --  |
| Rabbani Mashiat*#    | BSc(4)            | 4           | Evaluating Nucleoside Analogs as Potential Anti-Cancer Drugs  | Prof Alice S T Wong, School of Biological Sciences                  | Novel mechanisms for targeting Cancer Stem cells using nucleoside analogues and nanotechnology based drug delivery | Prof Peng Ling, Department of Chemical Biology, Centre National de la Recherche Scientifique (CNRS) |
| Tse Yuen Cheong      | BSc(4)            | 4           | Design and Synthesis of Luminescent Metal Complexes   | Prof Vivian W W Yam, Department of Chemistry                        | Design, Synthesis and Photophysical Study of Cyclometallated N <sup>C</sup> N Alkynylplatinum(II) Complexes        | Prof Vivian W W Yam, Department of Chemistry  |
| Wong Thomas Hin Fung | BSc(4)            | 4           | The Anticancer components from Hedyotis diffusa   | Prof Chi Ming Che, Department of Chemistry                          | --   | --  |
| Zhang Zhiqian        | BSc(4)            | 4           | CRISPR/Cas9 mediated isolation and genomic cloning of EBV strains from clinical EBV-infected cell samples       | Prof Dong-Yan Jin, School of Biomedical Sciences                    | --   | --  |

**2015-16**

| Name                 | Curriculum | Year | Project Title of Project/ Directed Studies Course   | Supervisor of Project/ Directed Studies Course   | Project Title of Summer Research Internship                        | Internship Supervisor   |
|----------------------|------------|------|---|--|--|---|
| Fan Ruolin*          | BSc(4)     | 4    | Systemic exploration in the regulating network of hypertrophic-chondrocyte-to-osteoblast differentiation    | Prof Kathryn S E Cheah, School of Biomedical Sciences  | --   | --  |
| Guo Fengyi           | BSc(4)     | 4    | Impacts of Urbanization on Spotted Dove Communication   | Dr Timothy C Bonebrake, School of Biological Sciences & Dr Caroline E Dingle, Department of Earth Sciences | --   | --  |
| Hassan Ayon Ahmed    | BSc(4)     | 4    | Determining the effect of shear stress on the adhesion of tumor cells in cancer metastasis                  | Prof Alice S T Wong, School of Biological Sciences   | --   | --  |
| Husain Abdullah      | BSc(4)     | 4    | Screening of G-protein-coupled receptors cDNA library for dimerization with Human Secretin Hormone Receptor | Prof Billy K C Chow, School of Biological Sciences   | --   | --  |
| Leung Yi Lok Enoch*# | BSc(4)     | 4    | Reconstruction of mass distribution of galaxy cluster(s) via gravitational lensing                          | Dr Jeremy J L Lim, Department of Physics   | Studying the UV luminosity functions of galaxies at high redshifts | Dr Jeremy J L Lim, Department of Physics  |
| Liu Yangdongling     | BSc(4)     | 4    | Design, Synthesis and Photophysical Study of Luminescent Metal Complexes                                    | Prof Vivian W W Yam, Department of Chemistry   | --   | --  |
| Luo Di               | BSc(4)     | 4    | New Time Evolution Methods for Matrix Product States of Tensor Network in Quantum Calculation               | Prof Guanhua Chen, Department of Chemistry & Dr Shizhong Zhang, Department of Physics                      | Investigation on Tensor Network Renormalization Group              | Prof Garnet Kin-Lic Chan, Department of Chemistry, the Chan Group, Princeton University                   |
| Sun Chenyue*         | BSc(4)     | 4    | Visible-light mediated synthesis of dihydrofuran derivatives with ruthenium photoredox catalysts            | Prof Chi Ming Che, Department of Chemistry   | Red-light induced carbon disulfide release from a cobalt complex   | Prof Peter C Ford, Department of Chemistry and Biochemistry, University of California, Santa Barbara, USA |
| Wen Boya*            | BSc(4)     | 4    | Fermat-type functional equations and binary form  | Prof Tuen Wai Ng, Department of Mathematics  | --   | --  |
| Wu Teng              | BSc(3)     | 4    | Exploring properties of Bayesian & Frequentist hybrid confidence interval                                   | Prof Stephen M S Lee, Department of Statistics & Actuarial Science   | --   | --  |
| Xiong Lingyun*       | BSc(4)     | 4    | Functional Role of hnRNP A1 on FOXM1 alternative splicing   | Dr Kin Hang Kok, School of Biomedical Sciences   | --   | --  |
| Zhang Yongquan       | BSc(4)     | 4    | Complex Manifolds   | Prof Ngaiming Mok, Department of Mathematics   | From Holomorphic Functions to Complex Manifolds                    | Prof Ngaiming Mok, Department of Mathematics  |

**2014-15**

| Name           | Curriculum | Year | Project Title of Project/ Directed Studies Course                                       | Supervisor of Project/ Directed Studies Course                 | Project Title of Summer Research Internship                                     | Internship Supervisor                             |
|----------------|------------|------|---|--|---|---|
| Cai Weixin*    | BSc(3)     | 3    | Buffered Autoregressive Model with Exogenous Variables                                  | Dr Philip L H Yu, Department of Statistics & Actuarial Science | Semiparametric Heteroscedastic Modeling for Seasonal Time Series                | Dr Prabir Burman, University of California, Davis |
| Chan Ho Wang*  | BSc(3)     | 3    | Anammox Bacteria in Animal System   | Dr Jidong Gu, School of Biological Sciences                    | Molecular Diagnosis of Anammox Bacteria   | Dr Jidong Gu, School of Biological Sciences       |
| Chan Hok Fung  | BSc(3)     | 5    | Physiologically - relevant doses of UVA exposure alters human skin keratinocytes growth | Dr Jetty C Y Lee, School of Biological Sciences                | --  | --  |
| Cheng Tsz Fung | BSc(3)     | 3    | Roles of BART microRNAs in Epstein-Barr virus-induced epithelial transformation         | Prof Dong-Yan Jin, Department of Biochemistry                  | Roles of BART microRNAs in Epstein-Barr virus-induced epithelial transformation | Prof Dong-Yan Jin, Department of Biochemistry     |

**2013-14**

| Name         | Curriculum       | Year | Project Title of Project/ Directed Studies Course                | Supervisor of Project/ Directed Studies Course            | Project Title of Summer Research Internship  | Internship Supervisor                                    |
|--------------|------------------|------|--|---|--|--|
| Li Yu        | BSc(3)           | 2    | Complex Differential Geometry                                    | Prof N Mok, Department of Mathematics                     | --   | --   |
| Pan Wenqi    | BSc(3)           | 2    | The role of Suppressor of fused in mouse hindbrain development   | Dr M H Shum, Department of Biochemistry                   | The role of Suppressor of fused in the formation of mouse cranial facial skeleton and outflow tract of embryonic heart | Prof C C Hui, University of Toronto                      |
| Sun Lianyi   | BSc(ActuarSc)(3) | 3    | Analysis of large data sets: new tools from random matrix theory | Dr J F Yao, Department of Statistics & Actuarial Science  | --   | --   |
| Wong Mo Dick | BSc(ActuarSc)(3) | 2    | Markov chains on a continuous state space                        | Dr J F Yao, Department of Statistics & Actuarial Science  | Particle methods with financial applications   | Dr P Del Moral, INRIA-Bordeaux-Sud-Ouest Research Centre |
| Yang Shihao* | BSc(ActuarSc)(3) | 2    | Valuing contingent options: A discounted density approach        | Dr H L Yang, Department of Statistics & Actuarial Science | --   | --   |

**2012-13**

| Name             | Curriculum       | Year | Project Title of Project/ Directed Studies Course       | Supervisor of Project/ Directed Studies Course                                      | Project Title of Summer Research Internship   | Internship Supervisor                   |
|------------------|------------------|------|---|---|---|---|
| Chai Wai Yeeng   | BSc(3)           | 2    | Do endocrine disrupting chemicals affect cancer?        | Dr A S T Wong, School of Biological Sciences  | --  | --                                      |
| Choi Chek Hin    | BSc(ActuarSc)(3) | 3    | Introduction to the gerber-shiu function in ruin theory | Dr E K C Cheung, Department of Statistics & Actuarial Science                       | Optimal portfolio with correlation constraints  | Dr C Bernard, University of Waterloo    |
| Chow Tai Cheong* | BSc(3)           | 2    | Pax6 and neurodegeneration of Parkinson's disease       | Dr Y Q Song, Department of Biochemistry   | Neurodegeneration of parkinson's disease: the role of Pax6 in MPP+-induced apoptosis Parkinson's disease in vitro model | Dr Y Q Song, Department of Biochemistry |
| Lai Cheuk Hei    | BSc(3)           | 1    | Pathogenesis of influenza viruses                       | Dr Chan Wan Yi, Department of Pathology<br>Dr Chan Chi Wai, School of Public Health | --  | --                                      |

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|--------------------|------------------|---|---|---|---|---|
| Lam Chun Ming      | BSc(3)           | 2 | Light controllable kinesin  | Dr J D Huang, Department of Biochemistry                    | Meiotic spo11 recombination initiation complex in zea mays analysis using yeast two-hybrid system – cloning of spo11-1A, spo11-1B, and prd2 | Dr Arnard Ronceret, University of California, Berkeley      |
| Lau Wing Yan       | BSc(3)           | 2 | Molecular characterization of puerarin-protein interactions by proteomics and domain mapping  | Dr J Rong, School of Chinese Medicine                       | Isolation of puerarin binding protein by biotin-streptavidin system   | Dr J Rong, School of Chinese Medicine                       |
| Li Yu Ting Stephen | BSc(3)           | 2 | The role of cell-cell junction proteins and actin regulatory proteins on germ cell migration and development during spermatogenesis | Prof W W M Lee, School of Biological Sciences               | Unraveling the role of actin regulatory proteins on cytoskeleton during spermatogenesis   | Dr C Y Cheng, Rockefeller University                        |
| Lin Tsen-yuan      | BSc(3)           | 2 | Analysing Fermi's data  | Prof K S Cheng, Department of Physics                       | --  | --  |
| Ng Ngai Fung*      | BSc(3)           | 2 | Riemann surfaces and complex manifolds  | Prof N Mok, Department of Mathematics                       | Studies on kahler manifolds   | Prof N Mok, Department of Mathematics                       |
| Peng Jun           | BSc(3)           | 1 | Calculus of variation   | Prof W S Cheung, Department of Mathematics                  | --  | --  |
| Shen Keren         | BSc(3)           | 2 | The generalization of Gibbard-Satterthwaite theorem   | Dr T W Ng, Department of Mathematics                        | One candidate voting with a quorum  | Dr T W Ng, Department of Mathematics                        |
| Song Yifan         | BSc(3)           | 2 | Data analysis for Fermi Satellite   | Prof K S Cheng, Department of Physics                       | --  | --  |
| Tang Yunfan        | BSc(ActuarSc)(3) | 2 | Option pricing under regime switching models  | Prof H L Yang, Department of Statistics & Actuarial Science | --  | --  |
| Tse Man Nok        | BSc(3)           | 2 | The roles of Lmx1a gene in regulating Irx3/5 genes during inner ear development   | Dr M H Sham, Department of Biochemistry                     | The roles of Lmx1a in regulating Irx3 and Irx5 genes in inner ear development   | Dr M H Sham, Department of Biochemistry                     |
| Wan Ho Chi         | BSc(ActuarSc)(3) | 2 | Dependance structures in multiple life insurances and annuities   | Dr K C Cheung, Department of Statistics & Actuarial Science | A study in optimal reinsurance  | Dr K C Cheung, Department of Statistics & Actuarial Science |
| Wong Kin Lam       | BSc(3)           | 2 | Modulation of secretin and secretin receptor gene regulations by NFAT5 in mouse hypothalamic cells                                  | Prof K C Chow, School of Biological Sciences                | The modulation of secretin receptor expression by hyperosmotic stress in mouse hypothalamic cells   | Prof K C Chow, School of Biological Sciences                |
| Wu Qihang*         | BSc(3)           | 2 | Tectonic evolution of the Chinese Altai   | Prof M Sun, Department of Earth Sciences                    | A detailed structural study of Qiongkuer Region, China Altai: multiphase deformation and modification for terrane subdivision proposed      | Prof M Sun, Department of Earth Sciences                    |
| Zheng Yao*         | BSc(ActuarSc)(3) | 3 | Applications of nonlinear time series models  | Prof W K Li, Department of Statistics & Actuarial Science   | Applications of nonlinear time series models: fitting threshold models to veilleux's predator series  | Prof W K Li, Department of Statistics & Actuarial Science   |