

## 國立清華大學第 24 屆新進人員研究獎得獎人簡介

李政昇老師在 2019 年 8 月加入清華大學生命科學院分子與細胞生物研究所，從事染色體斷裂修復與基因重組的研究。李老師是清華大學的校友，於 2006 年畢業於生命科學系，之後到美國布蘭戴斯大學攻讀分子與細胞生物學的博士，接著在波士頓兒童醫院暨哈佛醫學院擔任博士後研究員，期間獲得美國癌症研究機構的獎學金。李政昇老師的研究結合酵母遺傳學、分子生物學、與次世代定序的方法，從多個面向研究染色體構型在染色體斷裂修復與基因重組的過程中所扮演的角色。

李老師與美國哈佛大學團隊共同研究並發現抗體基因重組過程中的重要機轉，幫助我們更加了解單一抗體基因為何能生成不同的抗體，來對抗各種病原體。染色體上相距甚遠的片段可藉由黏著蛋白所介導的環擠出作用而被拉近並完成重組。這項突破性的研究成果刊登在國際頂尖的自然期刊。

李老師非常感謝此獎項的肯定，未來會持續在研究染色體重組的相關機制上努力，期能有更好的研究表現。

Prof. Cheng-Sheng Lee joined the Institute of Molecular and Cellular Biology, College of Life Sciences at National Tsing Hua University in August, 2019. His research focuses on the DNA double strand break repair and gene recombination. Prof. Lee is a NTHU alumnus: he received his bachelor's degree from the Department of Life Science in 2006. Prof. Lee then went to Brandeis University to pursue his doctoral degree in the Molecular and Cell Biology program, followed by postdoctoral research at Boston Children's Hospital/Harvard Medical School. Meanwhile, he was supported by the Irvington Postdoctoral Fellowship from Cancer Research Institute. Prof. Lee's research combines tools from yeast genetics, molecular biology, and next generation sequencing to study the role of chromosome conformation in chromosome break repair and gene recombination from multiple aspects.

Prof. Lee and collaborators from Harvard found the involvement of an important mechanism in regulating the somatic recombination of the gene segments encoded for immunoglobulin heavy chain. The finding helps better understand how this single gene in one individual organism is able to produce different antibodies against all different antigens. Cohesin-mediated loop extrusion can promote the contact and recombination of gene segments that are linearly distal to each other. The breakthrough research work was published in Nature, a top international scientific journal.

Prof. Lee wants to thank National Tsing Hua University for this award, and will keep being dedicated to the research in the field of chromosome recombination. Look forward to his other research accomplishments in the future.