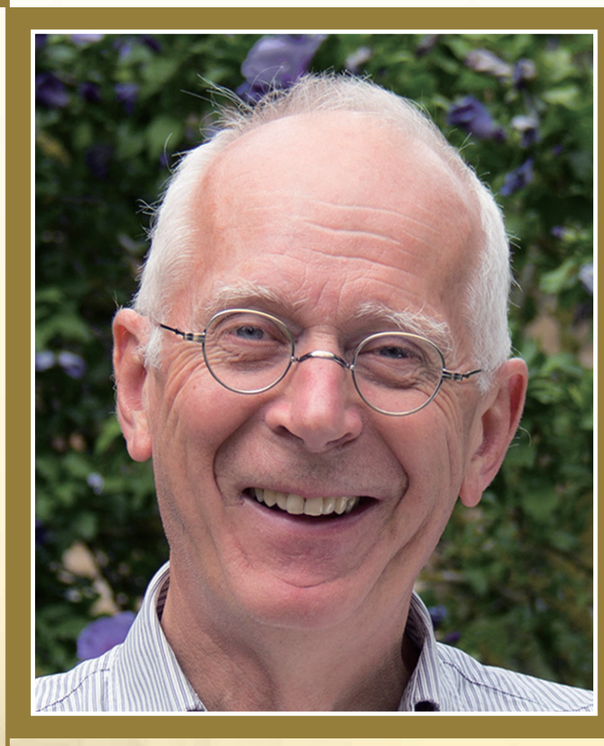
香港城市大學
City University of Hong Kong
專業 創新 胸懷全球
Professional • Creative
For The World

# City University Distinguished Lecture Series



Speaker

## Professor Sir David Baulcombe

*Regius Professor of Botany and Head of the Department of Plant Sciences*
*Cambridge University*

# Non coding RNA, epigenetics and non Mendelian inheritance in plants

**on**

**Friday, 10 November 2017 at 4:30 pm**

**at**

**Connie Fan Multi-media Conference Room**
**4/F Cheng Yick-chi Building**
**City University of Hong Kong**
**Tat Chee Avenue, Kowloon**

## *Abstract*


Eukaryotes contain small regulatory RNAs that have been referred to as the dark matter of genetics. They are typically 21-24 nucleotides long, associated with Argonaut or Piwi proteins. Some of these small RNAs guide the Argonaut/Piwi protein to a complementary RNA and they are negative regulators of gene expression acting at the level of messenger RNA turnover or translation. Others participate in more complex epigenetic systems affecting chromatin or they act as part of an RNA signal that moves between cells. In plants the posttranscriptional mechanism is involved in defense against RNA viruses. The chromatin effects play a role in defense against DNA viruses and transposable elements and it is associated with the establishment of heritable epigenetic marks.

However the importance of this defense system goes beyond suppression of transposons and viruses. There are secondary effects of the epigenetic marks that may influence the expression of adjacent genes in the sense of McClintocks “controlling elements”. In most instances the effect is gene silencing and in some instances the effect may influence the biology of the affected plant. I will describe how RNA silencing may be particularly important following wide cross hybridisation and how it may influence hybrid vigour and transgressive segregation. I will describe our recent work that implicates paramutation like processes following wide cross hybridisation.


## *Biography*

Professor Sir David Baulcombe is Regius Professor of Botany and Head of the Department of Plant Sciences at Cambridge University. His research interests involve plants and he focuses on gene silencing and epigenetics – the science of how nurture can influence nature. His discoveries, including the seminal discovery of small interfering RNAs, changed thinking about the role of RNA in the regulation of gene expression of animals, plants and fungi. He is also interested in the application of science to develop sustainable agriculture.

Professor Sir Baulcombe has received numerous prestigious awards including most notably the Albert Lasker Award for Basic Medical Research and the Wolf Prize in Agriculture. He is also a Fellow of the Royal Society, a Fellow of the Academy of Medical Sciences, a Member of the Academia Europaea, a Member of European Molecular Biology Organisation, and a Foreign Associate Member of the National Academy of Sciences (USA).

**Online registration:**
**http://www.cityu.edu.hk/vprt/cityu-dls/upcoming.htm**

*City University Distinguished Lecture Series*


**Enquiries:**
**Office of the Vice-President**
**(Research and Technology)**

**Tel: 3442 9049**
**Fax: 3442 0322**
**Email: vprtdl@cityu.edu.hk**