GATERSLEBEN LECTURE

IPK LEIBNIZ-INSTITUT



Speaker: **Prof. Dr. Julian M. Hibberd FRS**
University of Cambridge, Department of Plant Science, Molecular Physiology, Cambridge, UK

Title: **Engineering C3 rice for C4 photosynthesis**

Time: **Tuesday, December 15, 2026, 2 pm**
https://ipk-gatersleben-de.zoom-x.de/j/64783767811?pwd=hndGuIynz0tMsTZ3oKnPjTsgHfQDL8.1
ID: 647 8376 7811
Kenncode: 184928

Place: **IPK Lecture Hall and via Zoom,**
Correnssstr. 3, 06466 Seeland OT Gatersleben

Abstract:
Until around 30 million years ago, the metabolism underpinning photosynthesis had remained largely unchanged since evolving in bacteria ~2.6 billion years ago. These ancient pathways were mapped out in the 1940s and 1950s by Melvin Calvin and colleagues, becoming known as C3 photosynthesis because the initial product of CO2 fixation contains three carbons.
A dramatic rewiring occurred during the Oligocene epoch, leading to the evolution of C4 photosynthesis. Species using the C4 pathway are significantly more productive and more efficient in their water and nitrogen use. Despite its immense complexity, the C4 pathway has evolved independently in more than 70 plant lineages.
To better understand the evolution of this complex phenotype, we studied the ancestral C3 state. In this talk, I will summarize our recent progress in understanding the molecular evolution of C4 photosynthesis, and how these insights are informing the integration of C4 traits into C3 crops to boost productivity and sustainability.

Biography:
Qualifications:
1991: BSc in Biology (First Class), University of Bangor, Wales.
1994: PhD in Plant Biology, University of Bangor, Wales.

Posts held:
2022: Head of Department, Department of Plant Sciences, University of Cambridge.
2014 onwards: Professor, Department of Plant Sciences, University of Cambridge.
2011-2014: Reader, Department of Plant Sciences, University of Cambridge.
2006-2010: University Senior Lecturer, Department of Plant Sciences, University of Cambridge.
2005-2006: University Lecturer, Department of Plant Sciences, University of Cambridge.
2000 onwards: Fellow of Emmanuel College, Cambridge.
2000-2005: Sir David Phillips Research Fellowship, funded by the BBSRC.
1997-1999: PDRA Department of Plant Sciences, University of Cambridge.
1994-1997: PDRA Department of Animal and Plant Sciences, University of Sheffield.

Prof. Dr. Nils Stein (organizer) *PhD Board and PostDoc Board (host)*