NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

ON-SITE BIOLOGY COLLOQUIUM

Friday, 20 Sept 2024 | 4 pm | DBS Conference Room 1, Blk S3 Level 5

Hosted by Prof Antonia Monteiro

Map to Block S3

Revealing the complexity of coevolutionary innovations

By **Christopher W. Wheat**
Professor of Population Genetics
Department of Zoology, Stockholm University, Sweden

Plants and insects are locked in a coevolutionary battle, where plants develop novel chemical defenses and insects adapt to overcome them. These interactions are responsible for much of the Earth's biodiversity, with adaptations that are key innovations driving speciation bursts on both sides of the interaction. One persistent question is whether traits identified as key innovations accurately predict functional performance and selection dynamics within species, as this necessitates characterizing their function, investigating their fitness consequences, and exploring the selection dynamics acting upon them. I will cover the nearly 20 years of my work into the interactions between mustard plants and their butterfly herbivores, highlighting how recent functional genomic insights from butterflies suggests that we are only starting to appreciate the complexity of these coevolutionary interactions.

About the Speaker

Christopher W. Wheat earned his B.Sc. from Emory University. He completed his PhD with Prof. Ward B. Watt at Stanford University, where he studied the genetics of flight performance and fitness differences in butterflies. His first postdoctoral position was at the Max Plank Institute for Chemical Ecology, where he worked with Prof. Tom Mitchell-Olds. He did a second postdoc in collaboration with Prof. Ilkka Hanski at the Metapopulation Research Group of the University of Helsinki and Prof. Jim Marden at Penn State University. He then became an Academy Research Fellow at the University of Helsinki and was hired as a Lecturer at Exeter University. In 2013, Chris relocated to Stockholm University as an Associate Prof in Population Genetics, where he is now a Professor in the Department of Zoology. His research interests are diverse, covering evolutionary and ecological functional genomics, population genomics, coevolution, conservation genomics, and phylogenomics. He is currently an Associate Editor at Genome Biology and Evolution.