

ASHBi SEMINAR

Quantification of approximate symmetries in biological systems

Lecturer: **Adriana Dawes, Ph.D.**
Professor, Ohio State University



Date **Monday, 11 September 2023**

Time **14:00 – 15:30 [JST]**

\ Hybrid /

Venue **Conference Room / Zoom**
B1F, Faculty of Medicine Bldg. B



*Register via the right QR code

Abstract

What do leaves and human faces have in common? What about daisies and sea urchins? They possess bilateral and rotational symmetries! Symmetry is a fundamental feature of natural systems, and is often correlated with survival, fecundity, and evolvability. While symmetry is ubiquitous and often intuitively obvious, symmetry in biological organisms is rarely perfect, making it challenging to apply mathematical definitions of idealized symmetry. To address this challenge, we developed a flexible, entropy-based method for quantifying symmetry that requires very little user input. I will highlight some novel insights arising from applications of this measure, including evidence for convergent evolution in flowering plants, classification of biopolymer networks, and visualization of the emergence and loss of symmetries in pattern formation systems.

Organizer : Graduate School of Medicine

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