

# Joint KJELDGAARD & Biomedicine Lecture

Thursday 17 September 2020 at 13.15 – 14:00

Followed by PhD session at approximately 14:05 – 14:30  
(coffee and cake cancelled)

Auditorium I, Department of Chemistry, Langelandsgade  
140, Building 1514-213, 8000 Aarhus C, Aarhus University



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## Comparative approach to understanding the evolution of morphogenesis

Life has an amazing ability to create shapes. Animals in particular excel at generating “endless forms, most beautiful” by coordinating the behaviors of cells in the process known as morphogenesis. Although we have a solid understanding of many morphogenetic processes, we know very little about how these processes evolved from unicellular ancestors to the diversity of shape and form seen in nature today. I argue that to understand morphogenesis, we need to understand the many ways in which cells change shape and coordinate their behaviors in groups. To achieve that, we need to abandon the concept of model species and study morphogenesis more broadly across the tree of life. We ought to, firstly, make use of the fully resolved animal phylogeny as a solid theoretical framework for understanding morphogenesis and secondly, to bring biophysical concepts and approaches to the studies of evolution of development (evo-devo). To tackle these questions, we need to build a bridge between the evolution of development (evo-devo) and tissue morphogenesis research fields. I will illustrate my early attempts to do so on two examples from gastrulation morphogenesis of insects.

Hosts: Peter Refsing Andersen, Aarhus Institute of Advanced Studies, Department of Molecular Biology and Genetics, AU and Joanna Kalucka, Aarhus Institute of Advanced Studies, Biomedicine, AU.