



Katedry genetiky a biochémie PriF UK
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Vás pozývajú na 128. prednášku v rámci Kuželových seminárov:

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FROM CNIDARIANS TO OTHER CREATURES: INVESTIGATING THE PRINCIPLES OF BUILDING ANIMAL BODIES

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The astounding diversity of animal body plans naturally suggests a corresponding diversity in the underlying developmental processes. However, the toolkit for building bodies from cells is surprisingly limited. Leitmotifs such as tissue folding, stretching, lumen formation, and organizers keep recurring over and over. What sets various body plans apart are rather the combinations, timing, and locations of these processes. Cnidarians, with their basal evolutionary position, simple body architecture, and amenability to experimental manipulations, provide a unique system for investigating the fundamental principles of building bodies common to all animals. In this talk, I will highlight two such instances from the freshwater polyp *Hydra* and the sea anemone *Nematostella*, focusing on the regulation of body parts development.

Relevant publications

- **Ferenc, J.**, & Ikmi, A. (2023). Nutritional control of developmental processes. *Development*, 150(20), dev200623.
- Vogg, M. C., **Ferenc, J.**, Buzgariu, W. C., Perruchoud, C., Sanchez, P. G. L., Beccari, L., ... & Tsiairis, C. D. (2022). The transcription factor *Zic4* promotes tentacle formation and prevents epithelial transdifferentiation in *Hydra*. *Science Advances*, 8(51), eabo0694.
- **Ferenc, J.**, & Tsiairis, C. D. (2022). Studying Mechanical Oscillations Mechanical oscillations During Whole-Body Regeneration in *Hydra*. In *Methods in Molecular Biology: Whole-Body Regeneration*: (pp. 619-633). New York, NY: Springer US.
- **Ferenc, J.**, Papasaikas, P., Ferralli, J., Nakamura, Y., Smallwood, S., & Tsiairis, C. D. (2021). Mechanical oscillations orchestrate axial patterning through Wnt activation in *Hydra*. *Science Advances*, 7(50), eabj6897.
- Misailidis, G., **Ferenc, J.**, & Tsiairis, C. D. (2021). Self-Organization of Tissues Through Biochemical and Mechanical Signals. In *Modeling Biomaterials* (pp. 43-70). Cham: Springer International Publishing.