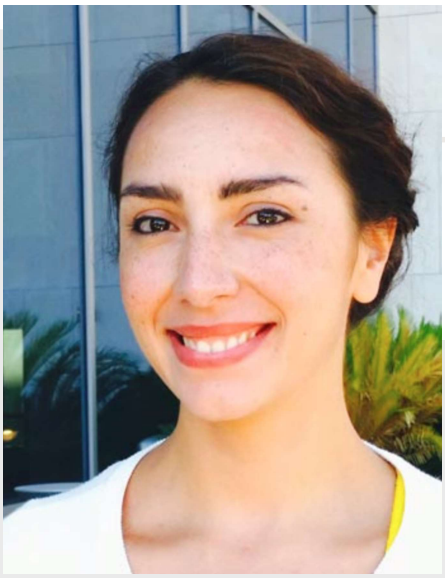
IMEG Seminar Series

The road to global science

Dr. Jacqueline Tabler

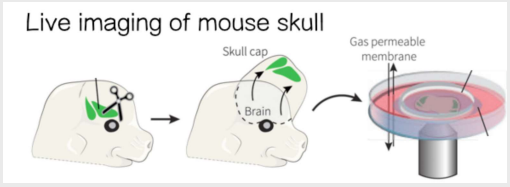
Group Leader, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany



May 27th, 2021, 16:00~17:00

"Mechanisms of skull morphogenesis"

This seminar series is for students, postdoc, and all researchers in Kumamoto University. Check your email box and find the Zoom ID and password !!



Abstract

An organs function depends not only on forming the correct cell types but on the physical arrangement of its cell and the material properties of their extracellular matrix which together generate correct organ shape. While differentiation is an important regulator of physical structure, increasingly that same physical structure is found to reciprocally influence differentiation and morphogenesis. Here, we use the embryonic skull cap to explore the relationship between the emergence of complex and extreme physical structure, morphogenesis and cell fate regulation. We combine live and fixed tissue imaging in mouse, novel analytic methods, single cell RNA sequencing and perturbation of collagen networks to not only understand bone differentiation in vivo but identify mechanisms through which emergent physical properties which form in the skeleton influence cell movements and the balance between differentiation and self-renewal.

You must be fascinated by ...

Live imaging of skull development

You may think it is impossible to visualize skull development in live. Learn how to overcome the challenges of understanding tissue development through new microscopy, physical perturbations and quantitative approaches.

Single cell vs. tissue

Tabler group is tackling fundamental questions with the scRNA-seq analysis. How do collective cells form skull and, how are gene expressions involved in the complex process?

Max Planck Institute

MPI always leads science in the world. Check this place!!

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