

# *"Whole-body correlation of gene expression with single-cell morphology"*

**Abstract:** We take advantage of the highly stereotypic development of the marine annelid *Platynereis dumerilii* to establish the link between gene expression and cellular ultrastructure for the entire larval body. To this end, we have spatially registered a high-resolution serial block-face electron microscopy dataset to a whole-body cellular gene expression atlas for 6dpf *Platynereis*. To analyze cellular morphology in detail we develop an automated segmentation pipeline that we use to render the somatic volume for all the cells in the organism. We also provide an integrated browser to easily explore, analyze and visualize these datasets.



**Detlev Arendt** studied biology at the University of Freiburg in Germany, where he also obtained his doctorate in natural sciences. His laboratory in the Developmental Biology Unit at the European Molecular Biology Laboratory has established the marine annelid *Platynereis dumerilii* as a molecular model for evolutionary, developmental and neurobiological research. His major interest is the evolution of animal body plans and nervous systems. He has also studied the evolution of photoreceptor cells and in recent years pioneered the new field of cell type evolution and development. He has been a senior scientist at EMBL since 2007, has received two consecutive European Research Council Advanced Grants since 2012; is a European Molecular Biology Organization member since 2015; and holds a honorary professorship at the Centre for Organismal Studies at Heidelberg University.