

# MECHANISMS OF POSTNATAL NEUROBLAST MIGRATION IN VERTEBRATES

Diego García-González<sup>1,2</sup>

<sup>1</sup> University of Heidelberg and German Cancer Research Center, Heidelberg, Germany

<sup>2</sup> Current address: Biotech Research & Innovation Centre, University of Copenhagen, Denmark

## ABSTRACT

In the vertebrate brain, the vast majority of neurons undergoes generation and differentiation in distinct locations. Therefore, correct migration and placement of newborn neurons is essential for shaping functional circuitry in the brain. Concerted action of extrinsic stimuli is required to regulate long-distance migration of postnatally-generated neurons from the ventricular-subventricular zone (V-SVZ) to reach their final destination. Some migratory principles are evolutionarily conserved, whereas others are species- and cell type-specific. For instance, blood vessels support neuroblast migration during brain development. In this talk I will present two different mechanisms that control neuroblast migration towards specific forebrain structures. With the help *in vivo* and *ex vivo* approaches in postnatal and adult mice, including BrdU injections, retroviral infections, genetic labeling in reporter mice, time-lapse imaging, optogenetics, electrophysiological recordings, calcium imaging and comparative brain anatomy, I will show novel features about how the vertebrate brain develops from an evolutionary perspective.