Cool Stuff from the Literature

- We know that specific double stranded RNA molecules (shRNA, miRNA, etc) are cut and processed in a specific way to regulate eventual protein expression. But how does a cell know to process these specific RNA transcripts and not all the other RNA molecules with RNA-RNA secondary structure? A recent paper in Nature has identified N6-methyladenosine as a specific chemical modification that marks primary micro-RNAs for processing. This could be textbook material! (read more)

- Angiogenesis can be abnormal in preterm infants. Regulation of focal contacts controls how cells sprout to form new blood vessels. A new paper now proposes an additional regulatory piece of the machinery. The enzyme MAP4K4 regulates the disassembly of focal contacts and retraction of vascular endothelial cell protrusions. Inhibiting MAP4K4 can protect against oxygen-induced retinopathy, identifying a potential therapy for vascular diseases of the retina, including ROP (check out extended data figure 9). (read more)

- Ever wonder why humans think differently than animals? (Well, you should!). Human brains contain specialized progenitor cells in the area of the brain termed the outer radial glia. Two studies not only identify genes unique to the human outer radial glia, but also demonstrate that one particular gene (ARHGAP11B) is unique to humans. Expression of ARHGAP11B in mice expanded the outer radial glia progenitors and made mouse brains look more human. Planet of the Mice here we come!

  - “Human-Specific Gene ARHGAP11B Promotes Basal Progenitor Amplification and Neocortex Expansion” (read more)
  - “Single-cell analysis reveals transcriptional heterogeneity of neural progenitors in human cortex” (read more)