CURRENT RESEARCH AND SCHOLARLY INTERESTS
The overarching goal of the Brunet lab is to understand the genetic mechanisms of aging and longevity. Aging is a highly plastic process regulated by a combination of genetic and environmental factors.

I am interested in the basic molecular components that characterize “young” and “aged” cellular states. Aging is associated with an increased onset of cancer, and I seek to define the set of factors that can rejuvenate an aged cell, without the risk of malignant transformation. Ultimately, we might be able to design strategies to directly convert “old” cells from a patient into “young” ones, eventually developing more effective cancer therapies and prevention methods.
• Genetics (Phd Program)
• Neurosciences (Phd Program)

Publications

PUBLICATIONS

• Comprehensive transcriptome analysis using synthetic long-read sequencing reveals molecular co-association of distant splicing events *NATURE BIOTECHNOLOGY*
  Tilgner, H., Jahanbani, F., Blauwkamp, T., Moshrefi, A., Jaeger, E., Chen, F., Harel, I., Bustamante, C. D., Rasmussen, M., Snyder, M. P.
  2015; 33 (7): 736-742

• A Platform for Rapid Exploration of Aging and Diseases in a Naturally Short-Lived Vertebrate *CELL*
  2015; 160 (5)

• Pharyngeal mesoderm regulatory network controls cardiac and head muscle morphogenesis *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  2012; 109 (46): 18839-18844

• The actin regulator N-WASp is required for muscle-cell fusion in mice *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  2012; 109 (28): 11211-11216

• The occipital lateral plate mesoderm is a novel source for vertebrate neck musculature *DEVELOPMENT*
  2010; 137 (17): 2961-2971

• Epidermal progenitors give rise to Merkel cells during embryonic development and adult homeostasis *JOURNAL OF CELL BIOLOGY*
  2009; 187 (1): 91-100

• Distinct Origins and Genetic Programs of Head Muscle Satellite Cells *DEVELOPMENTAL CELL*
  2009; 16 (6): 822-832

• The contribution of Islet1-expressing splanchnic mesoderm cells to distinct branchiomeric muscles reveals significant heterogeneity in head muscle development *DEVELOPMENT*
  2008; 135 (4): 647-657