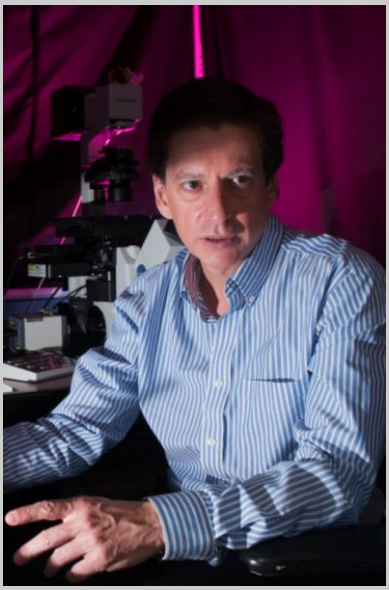
# NC STATE UNIVERSITY

## Comparative Medicine Institute


Jorge Piedrahita



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## Comparative Models for Regenerative Medicine

### Research emphasis:

Dr. Piedrahita's laboratory has been involved in the isolation and characterization of a wide range of stem cells. These include stem cells such as EG or PGC-derived cells, neural stem cells, amniotic fluid stem cells, intestinal stem cells, and induced pluripotent stem cells. Species have included mice, dogs, and pigs. In addition, Dr. Piedrahita's laboratory has been involved in the development of the pig as a large animal model of human disease. His group has developed a series of transgenic lines that can be used either as animal models of human disease or for translational studies in regenerative medicine.

### Application :

- Transgenic pigs
- Pig and dog stem cells
- Regenerative medicine
- TALENs and CRISPR-Cas technologies in large animals

### Collaboration potential:

- Large animal models for biomedical applications (pigs)
- Stem cell applications in companion animals and animal models (pigs)

### Selected publications:


McCall-Martin A, Chen X, Linder KE, Estrada JL, Piedrahita JA. 2010. Varying phenotypes in swine versus murine transgenic models consitutively expressing the same human sonic hedgehog transcriptional activators, K5-hGLI2 delta N. Transgenic Res. 2010 Oct;19(5):869-87. doi: 10.1007/s11248-010-9362-0. Epub 2010 Jan 23.

Piedrahita JA, and Olby N. 2011. Perspectives on transgenic livestock in agriculture and biomedicine: an update. Reprod. Fertil. Dev. 23:56-63 (Review Article).

Gonzalez LM, Williamson I, Piedrahita JA, Blikslager AT, Magness ST. 2013. Cell lineage identification and stem cell culture in a porcine model for the study of intestinal epithelial regeneration. PLoS One. 2013 Jun 28;8(6):e66465. doi: 10.1371/journal.pone.0066465. Print 2013.