

# Keck School of Medicine of USC

## **Development, Stem Cell and Regenerative Medicine (Ph.D.) Learning Objectives**

Upon completion of this program, students will be able to:

1. Describe how vertebrate embryos are assembled from fertilization through later organ patterning.
2. Discuss how progenitor and stem cells are specified and maintained through the life of animals.
3. Classify and contrast the major signaling pathways that coordinate multicellularity.
4. Relate the development and regeneration of organs.
5. Examine clinical problems for which stem cells can provide novel regenerative therapies.
6. Compare and contrast the strengths and weaknesses of different vertebrate model organisms.
7. Design and interpret hypothesis-driven scientific studies to address key problems in the field.
8. Develop and practice skills in communication to a scientifically literate audience.
9. Write effective grant proposals and scientific publications to disseminate findings to the public.
10. Develop creative and critical thinking skills to enable a career in the life sciences.