

## **Reading Materials for Qualifying Exam (Magness)**

### **Stem cell Concepts: In vivo tissue regeneration and ex vivo tissue engineering**

**Day:** April 28<sup>th</sup>, 2023

**Start Time:** 10:00a

**End Time:** 12:00p

Exam Submission must be emailed to me ([magness@med.unc.edu](mailto:magness@med.unc.edu)) prior to a 12:01pm time stamp.

**\*\*\* IMPORTANT\*\*\* No exams will be accepted past a 12:00p time stamp on the email.**

**Preface:** The goal of this exam is to evaluate your understanding of basic stem cell biology as it relates to tissue regeneration and tissue engineering. You will be responsible for mastering the fundamentals to the extent that you can use information to answer basic conceptual questions and also to develop hypothetical solutions to hypothetical problems in stem cell-driven regenerative medicine. The reference material attached to this exam summary serves as a guide. You are encouraged to use these materials and the citations within them to develop your knowledge surrounding the exam topics.

You should be fluent in these concepts prior to taking the exam:

Basic stem cell biology

Pluripotent stem cells

Tissue specific stem cells

iPSCs

Stem cell niches

Endogenous vs engineered stem cells

Strengths and weakness of stem cell therapies

**References:** Basic text book on stem cell biology, 5 journal articles that have been posted along with this summary of the exam.