SI Session 3.1 10/15/19 Lecture: 10/11 and 10/14

List out prenatal development beginning with an oocyte and ending with a hatched blastocyst:

The \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ stays with the embryo until it reaches the uterus. The blastocyst hatches from here.

Match the following terms to the correct definition:

Totipotent Pluripotent Multipotent

1. Have the ability to form a limited range of cells and tissues appropriate to their location (muscle cells for smooth and striated muscle, blood cells for RBC, WBC, and platelets, etc.)
2. Have the ability to form all cell types of the conceptus
3. Have the ability to form several types of all three germ layers (ectoderm, mesoderm, endoderm) but not the whole organism

What is a gastrula? What is gastrulation? Where does gastrulation occur?

Once the blastocyst enters the uterus between day 7-9 of gestation, the inner cell mass differentiates into three germ layers. Which germ layer does the reproductive system develop from?

The ectoderm gives rise to the nervous system, skin, and hair. Which component of the reproductive system develops from this germ layer?

What organs are derived from the endoderm?

The Posterior Pituitary

1. Only stores oxytocin
2. Developed from the roof of the mouth
3. Uses the hypothalamo-hypopseal portal system
4. Is the neurohypophysis
5. Both A and D

The Anterior Pituitary

1. Produces LH and FSH
2. Develops from the roof of the mouth (gives rise to Rathke’s pouch)
3. Receives chemical messengers via the hypothalamo-hypopseal portal system
4. Is the adenohypophysis
5. All of the above

Describe the development of the reproductive system in regards to trimesters

 1st trimester:

 2nd trimester:

 3rd trimester:

Why does the y chromosome drive primary sex determination?

List some chromosomal sex defects that can occur:

During the first 15% of gestation, the primordial germ cells develop while the yolk sac is still present. The primordial germ cells them migrate by ameboid movement to what location in the embryo?

1. Hindgut
2. Gonadal Ridge
3. Mesentery

List and describe the three distinct renal systems:

Draw Phenotypical Sexual Differentiation

The reproductive system consists of three primary components. List them:

Explain Freemartins:

There are fundamental differences in the hypothalamus of the male and female. These differences are established prenatally and remain throughout the reproductive life of both sexes. In the area below, draw a diagram to explain the differences in the hypothalamus between a male and female: