Urinary System Dissection

Fetal Pig Protocol:

1. Locate the two kidneys in the abdominal cavity.

2. Find the adrenal glands: small, white bands of tissue on the top, inside edge of each kidney. Be aware that the peritoneum holds the adrenal gland against the kidney; because you have removed the peritoneum, the adrenal will no longer be resting on the kidney but will instead be near the spinal column. Also, although there are left and right adrenal glands, often the left adrenal is missing due to the removal of tissue during the dissection of the posterior blood vessels earlier in the semester.

3. Note the tubes that go from each kidney to the bladder, the muscular structure located between the two umbilical arteries. These tubes are the ureters.

4. Note the urethra coming off the base of the bladder (note: you will get a much better view of the urethra after you have completed the dissection of the reproductive systems).

5. Remove one kidney from the fetal pig by severing the ureter. Make a longitudinal incision through the kidney, so that you cut it into two equal halves.

6. Within the kidney, find the interlobar arteries and/or veins, which are the large blood vessels extending up through the renal pelvis.

7. The arcuate arteries and veins are the vessels that connect one interlobar artery or vein to another.

8. The interlobular arteries and veins are the very small blood vessels that extend from the interlobars into the renal cortex.

Sheep Kidney Protocol:

1. Obtain a sheep kidney from those provided. Make a longitudinal incision through this kidney, just as you did in the fetal pig kidney. You only need one half of the sheep kidney to work with, so give your other half to someone else.

2. Observe the renal capsule, the thin membranous covering of the kidney.

3. The renal pelvis is the large sac at the base of the kidney. It may be filled with white adipose tissue.

4. The pyramids are the smooth, discolored structures located in the inner core of the kidney, above the pelvis. Note that you will need to remove some of the pyramids to see the remaining
structures, which lie underneath. Be sure that in doing this you do not remove all of the pyramids, but just a portion on one side.

5. The calyces are the tube-like extensions from the renal pelvis. The openings at the ends of the calyces are the papillae. The columns are the tissue between each calyx.

6. The renal medulla is the region of the kidney containing the calyces, pyramids, columns, and papillae. The renal cortex is the outer layer of tissue beyond the papillae