Cat urogenital and hepatic portal system

You will be responsible for the anatomy of the urogenital and circulatory systems of both males and females. Make sure you examine both sexes today.

Male reproductive system
ductus deferens (vas deferens)  
scrotum  
testis  
anal gland (near end of rectum)  
prostate gland  
spermatic cord (contains ductus deferens, spermatic artery and vein)  
urethra

glands penis  
epididymis  
gubernaculum  
bulbourethral gland (Cowper's gland)  
penis

To start the male dissection, find the ductus deferens at the base of the bladder. Follow it outside the body where it will join with the spermatic artery and vein into a common structure - "spermatic cord". The spermatic cords extend down to the testes. Push the spermatic cords to the side. Cut through the pubic symphysis (read bottom of this page first). Once through the symphysis, remove tissue to expose the urogenital canal, prostate, bulbourethral gland, anal gland. You will have to dissect close to the sides of the pelvis to avoid cutting the bulbourethral glands. Then follow a spermatic cord and dissect along it to expose a testis and the ductus deferens. Remove a layer of white tissue on the testis to see epididymis. Look for the gubernaculums, which holds the bottom of the testis in the scrotum. Now follow the urogenital canal and dissect to expose your cat's penis. Partially cut penis to see corpora cavernosa tissue within penis.

Female reproductive system
ovary  
oviduct  
ostium  
uterine horn  
urethra  
cervix (valve-like structure separating vagina and uterine body)  
body of uterus  
vagina  
anal gland (near end of rectum)  
urogenital sinus

Except for the urethra, vagina, urogenital sinus and cervix, most parts of the female reproductive system are already exposed from previous dissection. You should be able to identify the ovary quite easily. Lateral to the ovary is the ostium, a flap-like structure which is actually funnel-shaped if you tease the sides. Leading around the ovary is the oviduct, a short coiled tube that leads to the uterine horn. You often have to look along the back of the ovary to see the oviduct. Cats have a bipartite uterus.

Cutting through the pubic symphysis- male and female cats
Read the dissection on page 376 (blue paragraphs starting with “Avoiding the median...”). To see the urethra and rectum and other structures, you will need a sharp scalpel to cut through the pubic symphysis - do not cut too deeply when you do this! There is important anatomy just below the bone. It is best if you cut directly in the middle. As you cut more posteriorly (through ishium), you will have to cut through more muscle before you get to the bone. You can use bone clippers to help shear the sides of the pubic symphysis once you've cut through, if necessary. When using bone clippers, I recommend wearing the protective glasses because those bone bits can fly. If you have a male, be careful not to cut through the spermatic cord.
Urinary system (male and female)
kidney
cortex
medulla
renal pelvis
ureter
urinary bladder
urethra
rectum (part of digestive system descending colon becomes rectum once in the pelvic cavity)

The information on the urogenital dissection starts on p. 371. The anterior parts of the urogenital system are already exposed. Examine the kidney and section lengthwise to see renal cortex and medulla (Figure 38.2).

Hepatic portal system:

Veins
hepatic portal
gastroplenic
anterior splenic
posterior splenic
cranial (superior) mesenteric (drains small intestine and caudal mes. vein)
caudal (inferior) mesenteric (drains large intestine)
anterior pancreaticoduodenal
intestinal

This system brings blood from the intestines and abdominal viscera to the liver. The blood vessels are all injected with yellow latex. Use a forceps or probe to remove tissue to expose them. Start below the liver, around where the bile duct is located. Remove tissue there until you expose a large yellow blood vessel – the hepatic portal vein. It is best to follow a major blood vessel (such as the hepatic portal vein or gastroplenic) and slowly expose the branching vessels. A good diagram of the branching pattern is on p. 397 with pictures on p. 402-3. The dissection is explained starting on pp. 399 (starting with “Drainage of viscera” along with description of many arteries. Also refer to the diagram of veins from the last laboratory handout.

Say goodbye to your kitty for a little while. Spray a little pretty pink preservative on kitty with the bottles provided. If there is still a lot of liquid in your bag, tell me and I will dispose of some.
FIGURE 6-3
Female urogenital system.

FIGURE 6-1
Kidney (vertically sectioned).
FIGURE 8-2
Male urogenital system.