I. OVARY (SLIDES FE 1,2)

While differences exist in the ovaries of various mammalian species, all have certain features in common. All contain a basic organization of cortex and medulla, and a collection of follicles in various stages of development:

A. **Primordial follicle** - an oocyte surrounded by a single layer of flattened cells called **follicular cells**.

B. **Growing follicles**

1. **Primary follicle**
   - **Early**- an oocyte surrounded by a single layer of cuboidal cells.
   - **Late**- an oocyte surrounded by several layers of **granulosa cells**.

2. **Secondary follicle** - one or more small fluid-filled cavities present among the **granulosa cells**.

C. **Mature (Graffian) follicle** - a single, large vesicle is present. **Cumulus oophorus** usually developed.

In the slides of the ovary, identify the above stages of follicular growth. Not all the stages of development are present on any one slide; hence utilize all ovary slides in your and your neighbor's collection. Identify the **cortex** and **medulla**. In which region does one find early stages of follicular development? Examine the oocyte nucleus and review meiosis as it applies to oogenesis. Study the **zona pellucida** and the arrangement of the **follicular epithelium** (granulosa cells). Look for the basement membrane. In the **Graffian follicles**, identify all the components and the arrangement of the **theca interna** and the **theca externa**.

II. OVARY (Slide FE 3)

Following ovulation, the wall of the mature follicle becomes disorganized, but the cellular elements are transformed into another structure, the **corpus luteum**. Identify the **granulosa lutein** and the **theca lutein**. Which of the two has the larger cells?

Disintegration of the corpus luteum results in its replacement by a **corpus albicans**.
III. UTERINE TUBE (Slide FE 4)

Which part of the oviducts were these sections taken from? Study the mucosa, muscularis, and the serosa. Note the mucosal folds. Are they low or large and branching? Note the frequency of the ciliated cells in the epithelium. Note the layering of the smooth muscle in the muscularis.

IV. UTERUS (Slides FE 5-8)

On both of these slides, identify the myometrium, stratum basalis, and the stratum functionalis.

Slides FE 5 & 8 show the endometrium during menstruation. Slide FE 8 is a section at early menstruation. Note the denuded surface of the endometrium, the edematous lamina propria, and dilated blood vessels. Slide FE 5 is a section at late menstruation. Note that most of the stratum functionalis has sloughed off.

Slide FE 6 is a section of uterus during the proliferative phase. Note that simple columnar epithelium lines the surface (except where it was damaged during tissue preparation) and the glands are elongating and not yet wavy. Note the difference between the S. functionalis and the S. basalis.
Slide FE 7 is labeled 'secretory'. It appears, however, that it is late proliferative or early secretory.

V. CERVIX / VAGINA (Slides FE 9 & 10)

Slide FE 9 is a section through the cervical-vaginal junction. Note the structural change as you move from the cervix to the vagina. The cervix is lined by a simple columnar epithelium and the lamina propria contains lots of glands that open onto the surface. Note the smooth muscle of the muscularis. The vagina is lined by stratified, non-keratinized, squamous epithelium and lacks glands.

Slide FE 10 is a section of the vagina. It is lined by stratified squamous non-keratinized epithelium. The lamina propria is composed of a loose fibroelastic connective tissue containing a rich vascular supply in the deeper regions. The muscularis is composed of smooth muscle cells arranged so that the mostly longitudinal bundles of the external surface intermingle with the more circularly arranged bundles near the lumen.

VI. NIPPLE (Slide FE 11)

The nipple is covered with stratified squamous keratinized epithelium, usually pigmented. The core of the nipple is composed of dense collagenous connective tissue with abundant elastic fibers connected to the surrounding skin or interlaced within the connective tissue. The wrinkling of the surface of the nipple results from the attachments of the elastic fibers. The nipple contains an abundance of smooth muscle arranged in two ways: circularly around the nipple and radiating longitudinally along the long axis of the nipple. The contraction of these muscle fibers is responsible for the erection of the nipple in response to various stimuli. Locate the bundles of smooth muscle (circular and longitudinal) and
distinguish from the **dense connective tissue**. Locate sections of the lactiferous ducts. These ducts are lined with a stratified cuboidal epithelium for most of their course but transitions to stratified squamous keratinized epithelium as it approached the surface of the nipple. Locate **sebaceous glands** that are scattered around in the connective tissue near the surface.