

Veterinary Anatomy Courseware

An alphabetical list of instructional software.

Autonomic Nervous System Tutor 2.2 by T.F. Fletcher © 1988, 1992, 1998

HyperCard application that presents ANS anatomy in text and graphics. The courseware features a tutorial (didactic) section and a drill (pathway tracing) section. The tutorial section has three parts: General Organization, Sympathetic Division, and Parasympathetic Division. Each part is followed by a quiz. The drill section offers students practice in tracing autonomic pathways to a variety of visceral organs; also, it can be used to graphically display correct pathways.

Disk size: 2.6 MB. Minimum hardware: Macintosh (9" b&w screen); requires 2 MB RAM.

Basic Eye Tutor 1.0.3 by R. Miller & T.F. Fletcher © 1994

HyperCard application that presents basic science information about the eye & adnexia through text and graphics, with some animation. Core information is organized sequentially; ancillary information is accessible via look-up buttons. The Tutor has five sections, each followed by a multiple-choice quiz. The sections are: Embryology; Anatomy of the Eyeball; Anatomy of Adnexia; Biochemistry of Vision; and Visual Neurobiology.

Disk size: 2.6 MB.. Minimum hardware: Macintosh (9" b&w screen; requires 2 MB RAM.

Canine Bones 3.3 by A. Burrell & T.F. Fletcher © 1994, 1998

HyperCard application that illustrates major features of canine bones (to be used in conjunction with a set of bones for optimal learning). The program presents bone anatomy in two modes: 1] In the Names mode, bone illustrations are accompanied by a list of names of bone features. Clicking on a name evokes a pop-up pointer to the corresponding bone feature. 2] In the Features mode, clicking on an illustrated feature of a bone causes the name of the feature to pop-up.

Disk size: 2.5MB. Minimum hardware: Macintosh (9" b&w screen; requires 2 MB RAM.

Canine Brain Atlas 2.0.1 by T.F. Fletcher © 1998, 1999

SuperCard stand-alone application that presents color plates of 16 transverse sections through a canine brain along with the names of brain structures that veterinary students are expected to know. For each color plate, clicking on a name selects the name and evokes pop-ups of both its definition and its indicator label on the color plate. The name of the selected term can be heard when a Pronounce button is clicked. Alternatively, a Display Labels button will cause all plate labels to be shown; whereupon, clicking a label causes its corresponding definition to appear and name to be selected. Optionally, you can step or cycle through enlarged images of the brain sections. Another section of the courseware, accessible via button click, displays labeled sketches of surface and dissection views of the canine brain organized by major brain divisions.

Disk size: 25 MB. Minimum hardware: Macintosh (640 x 480 pixels, thousands of colors); requires 10 MB RAM.

Canine Muscle Groups 0.8 by T.F. Fletcher © 1999

SuperCard application that presents canine muscles arranged logically in regional groups. Grouping muscles, in contrast to thinking of them individually, facilitates learning and recall. Muscles within a regional group generally share similar actions and innervation. The courseware allows students to toggle between outline views of muscle groups and lists of individual muscles within a group, including illustrations and comments about the muscle group. This courseware is intended for veterinary students studying anatomy using Miller's Guide to the Dissection of the Dog, which is the source of muscle grouping and illustrations for the courseware. The courseware is optimized for a 640- by 480-pixel display.

Disk size: 3 MB. Minimum hardware: Macintosh (640 x 480 pixels); requires 5 MB RAM.

Canine Planar Anatomy Atlas 0.7.1 by T.F. Fletcher © 1998

SuperCard application that presents transverse, sagittal and dorsal plane sections through canine cadavers. You toggle your viewing options by button clicks. You may toggle among section planes, among levels per plane, and among label options (muscle-skeleton labels, viscera-vessel labels, or no labels) per section per plane. Anatomical structures are labeled by number. Pressing a keyboard number key evokes an identification statement about the labeled structure. Optionally, you can keep a running score of your own right and wrong answers. For veterinary students, the Atlas is intended to complement viewpoints obtained from cadaver dissection. The Atlas should be valuable to anyone requiring knowledge of canine anatomy. The courseware is optimized for a 640- by 480-pixel color display.

Disk size: 30 MB. Minimum hardware: Macintosh (640 x 480 pixels, thousands of colors); requires 8 MB RAM.

Cranial Nerve Nuclei 1.2 by T.F. Fletcher ©1999

This courseware is a SuperCard application intended for veterinary students studying cranial nerve nuclei within the brain. Cartoons of cranial nerve cell columns, color coded by type (SE, VE, GSA, GVA, etc.), are shown in dorsal, transverse, and sagittal views of a canine brainstem. Cranial nerve nuclei are also labeled in transverse sections through a canine brain. There are five sections:

1. Introduction to general features of afferent/efferent & somatic/visceral nuclei;
2. Illustration of cranial nerves plus a synopsis of innervation/fiber-type per nerve;
3. Neurological deficits resulting from damage per cranial nerve;
4. General afferent and efferent cell columns & cranial nerve nuclei; and
5. Special afferent pathways and nuclei (vision, hearing, kinesthesia, taste, & olfaction.

Disk size: 35 MB. Minimum hardware: Macintosh (640 x 480 pixels, thousands of colors); requires 8 MB RAM.

Cranial Nerve Reference 2.5 by K. Hoffmann & T.F. Fletcher © 1992, 1994, 1998

HyperCard application that represents a reference manual for reviewing information about cranial nerves, using the dog as a model for anatomical features and graphic illustrations. Information is organized into five sections: Anatomy, Function, Fiber type, Exit Foramina, and Nuclear Location within the brain.

Disk size: 2.4 MB. Minimum hardware: Macintosh (9" b&w screen) ; requires 2 MB RAM.

Embryology Tutor 0.9.8 by T.F. Fletcher © 1995, 1997

HyperCard application that presents developmental anatomy in a series of ten lessons (eventually). Currently four lessons are available, plus a section that summarizes derivatives of the germ layers (ectoderm, mesoderm, and endoderm). Each lesson features a: list of Major Topics (with links to tutorial screens), detailed Lesson Outline (with links to tutorial screens), Lesson Objectives, Lesson Summary, Lesson Glossary, Lesson Tutorial (a series of didactic screens), and a Lesson Quiz. The series of tutorial screens presents basic information through text and graphics, with additional information optionally available via button clicks. The multiple-choice quiz offers instructor commentary and the option of reviewing tutorial screens that are pertinent to the current question.

Currently available lessons are:

Nervous System and Special Senses (420K); [available separately as Neuroembryology 1.0]

Cardiovascular System (530K);

Urinary System (544K).

Genital System (500K).

Disk size: 2.2 MB + lessons (2 MB). Minimum hardware: Macintosh (9" b&w screen); requires 2 MB RAM.

Endocrine Microanatomy 1.0 by C.M. Czarnecki. © 1998

SuperCard application that presents illustrations and text about the endocrine system. The program consists of: Introduction, Overview, Tutorial, Review, and Self-evaluation components. Images are presented in sequential magnifications, as one would use a microscope to view cellular components. Images are available for Triple (blue/orange/red), H&E, and, in some cases, special stains. Interactive questions with appropriate feedback are presented at timely intervals.

Disk size: 60 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors).

Equine radiology: Head by V.S. Cox and G. Johnston

Authorware program that presents radiographic anatomy of the horse head with cadaver correlates. Disk size: 26 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors) or PC (Windows 95).

Equine radiology: Carpus by V.S. Cox and G. Johnston

Authorware program that presents radiographic anatomy of the horse carpus.

Disk size: 5 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors) or PC (Windows 95).

Equine radiology: Tarsus by V.S. Cox and G. Johnston

Authorware program that presents radiographic anatomy of the horse tarsus.

Disk size: 7 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors) or PC (Windows 95).

Equine radiology: Fetlock by V.S. Cox and G. Johnston

Authorware program that presents radiographic anatomy of the horse fetlock.

Disk size: 5 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors) or PC (Windows 95).

Equine radiology: Foot & Digit by V.S. Cox and G. Johnston

Authorware program that presents radiographic anatomy of the horse foot and digit.

Disk size: 13 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors) or PC (Windows 95).

Gaits 1.3 by V. Johnson & T.F. Fletcher © 1994, 1998

HyperCard application for learning foot-fall patterns of normal quadruped gaits, using the dog as a model species. Continuous cycle animation or step by step modes can be selected to show foot-fall patterns and lateral views of dogs at various gaits (walk, amble, trot, pace, canter, transverse gallop and rotary gallop). Background information about gaits, a glossary of pertinent terms, and pop-up text descriptions for each gait are included.

Disk size: 2.5 MB. Hardware: Macintosh (9" b&w screen, but faster is better for animation); requires 2 MB RAM.

Glands 1.4 by C.M. Czarnecki © 1993

HyperCard courseware that, through schematic illustrations, demonstrates gland morphology as would be seen in tissue sections under a microscope. Tutorial and quiz sections are offered.

Disk size: 2.5 MB. Minimum hardware: Macintosh (9" b&w screen); requires 2 MB RAM.

GI-Related Organs 1.0 by C.M. Czarnecki. © 1998

SuperCard application that presents illustrations and text about liver, pancreas, salivary glands, and tongue. The program consists of: Introduction, Overview, Tutorial, Review, and Self-evaluation components. Images are presented in sequential magnifications, as one would use a microscope to view cellular components. Images are available for Triple (blue/orange/red), H&E, and, in some cases, special stains. Interactive questions with appropriate feedback are presented at timely intervals.

Disk size: 42 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors).

Head Anatomy (Head to Head) 1.3 by V.S. Cox & T. Sundell © 1988

HyperCard courseware that presents the gross anatomy of the head of horse, ox and dog in quiz format.

Disk size: 2.2 MB. Minimum hardware: Macintosh (9" b&w screen); requires 2 MB RAM.

Histology Courseware 1.0 by C.M. Czarnecki. © 1998

Courseware, authored in Director for Mac and PC platforms, presents instruction in three subject areas: Cytology, Basic Tissues, and Tubular Organ Micromorphology.

Each subject area consists of: Introduction, Overview, Tutorial, Review, and Self-evaluation components. Images are presented in sequential magnifications, as one would use a microscope to view cellular components. Images are available in Triple stain (blue/orange/red), H&E, and, in some cases, special stains. Interactive questions with appropriate feedback are presented at timely intervals.

The **Cytology** section presents illustrations and text about cellular organelles and inclusions. The **Basic Tissues** section presents illustrations and text about epithelium, connective tissue (including blood and supporting tissue), muscle, and nerve. The **Tubular Organs** section presents the morphology of cardiovascular, gastrointestinal, respiratory, reproductive and urinary systems of mammals and birds.

Disk size: 430 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors); requires 8 MB RAM. A Windows 95 PC version is available.

Horse Teeth & Age 2.0 by A. Burrell & T.F. Fletcher © 1992, 1993

HyperCard application that presents anatomy of equine incisor teeth and guidelines for estimating a horse's age based on tooth eruption and tooth wear. Tooth-set illustrations of different age horses are included to practice age estimation.

Disk size: 2.3 MB. Minimum hardware: Macintosh (9" b&w screen); requires 2 MB RAM.

Immune System Microanatomy 1.0 by C.M. Czarnecki. © 1998

SuperCard application that presents illustrations and text about the organs involved in the immune system. The program consists of: Introduction, Overview, Tutorial, Review, and Self-evaluation components. Images are presented in sequential magnifications, as one would use a microscope to view cellular components. Images are available for Triple (blue/orange/red), H&E, and, in some cases, special stains. Interactive questions with appropriate feedback are presented at timely intervals.

Disk size: 85 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors).

Kidney Microanatomy 1.0 by C.M. Czarnecki. © 1998

SuperCard application that presents illustrations and text about the kidney. The program consists of: Introduction, Overview, Tutorial, Review, and Self-evaluation components. Images are presented in sequential magnifications, as one would use a microscope to view cellular components. Images are available for Triple (blue/orange/red), H&E, and, in some cases, special stains. Interactive questions with appropriate feedback are presented at timely intervals.

Disk size: 30 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors).

Neuroembryology 1.0 by T.F. Fletcher © 1995, 1999

HyperCard application that presents developmental anatomy of the nervous system and special senses. The courseware consists of a series of tutorial screens presenting basic information through text and graphics, augmented with additional information optionally available via button clicks. Other courseware features include: 1] list of Major Topics (with links to tutorial screens), 2] detailed Lesson Outline (with links to tutorial screens), 3] Lesson Objectives, 4] Lesson Summary, 5] Lesson Glossary, and 6] a Lesson Quiz. The multiple-choice quiz offers instructor commentary and the option of reviewing tutorial screens that are pertinent to the current question.

Disk size: 2.5 MB. Minimum hardware: Macintosh (9" b&w screen); requires 2 MB RAM.

Ovary Microanatomy 1.0 by C.M. Czarnecki. © 1998

SuperCard application that presents illustrations and text about the ovary. The program consists of: Introduction, Overview, Tutorial, Review, and Self-evaluation components. Images are presented in sequential magnifications, as one would use a microscope to view cellular components. Images are available for Triple (blue/orange/red), H&E, and, in some cases, special stains. Interactive questions with appropriate feedback are presented at timely intervals.

Disk size: 30 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors).

Placental Images 1.0 by V.S. Cox, et al.

Authorware tutorial that presents color images of placentas and related structures of seven species of domestic animals. Explanatory text and associated clinical problems related to placentation are included.

Disk size: 27 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors) or PC (Windows 95).

Problem-Solving in Histology 1.0 by C.M. Czarnecki © 1993.

HyperCard application that examines problem-solving skills applied to histology principles in veterinary medicine.

Disk size: 2.8 MB. Minimum hardware: Macintosh (9" b&w screen); requires 2 MB RAM.

Small Animal Radiographic Anatomy 1.0 by V.S. Cox © 1998

This Authorware 4 tutorial is designed to replace radiographs on view boxes as the primary means of radiologic instruction. This software increases the efficiency of study because no time is wasted searching through envelopes to find radiographs, some of which are misfiled by other hurried students. It also amplifies access to radiographic images because the tutorial can be available on any Windows computer rather than being limited to one room on campus.

Over 100 images are available for study and are grouped according to body region, head, spine, chest, abdomen, etc. Each image is presented first without labels along with a list of structures the user should look for. With a mouse click labels are overlaid on the image but can be toggled off and on the image instantaneously. This allows the labels to illuminate but not obscure structures. The majority of the images illustrate normal radiographic anatomy but clinical correlates are included, especially when they enhance understanding of radiographic anatomy.

Angiograms, bronchograms and cystograms are used to increase understanding of plain films.

Companion illustrations are used to depict techniques for radiographic positioning. While most of the images deal with the dog and cat, rabbits are also included.

Disk size: 18 MB. Minimum hardware: Macintosh or PC (Windows 95); 800 x 600 pixels resolution, 24 bit color).

Spinal Cord Tutor 1.1 by T.F. Fletcher © 1994

HyperCard application that comprehensively presents information about the development, structural organization and function of the spinal cord. A series of text and graphics tutorial screens is organized into a surface layer of basic information with additional information optionally available by button click. An Index is available for looking up selected topics or entering the tutorial at various points. A multiple-choice quiz offers instructor commentary and the option of reviewing tutorial screens that are pertinent to the current question.

Disk size: 2.8 MB. Minimum hardware: Macintosh (9" b&w screen); requires 2 MB RAM.

Testis Microanatomy 1.0 by C.M. Czarnecki. © 1998

SuperCard application that presents illustrations and text about the testis. The program consists of: Introduction, Overview, Tutorial, Review, and Self-evaluation components. Images are presented in sequential magnifications, as one would use a microscope to view cellular components. Images are available for Triple (blue/orange/red), H&E, and, in some cases, special stains. Interactive questions with appropriate feedback are presented at timely intervals.

Disk size: 24 MB. Minimum hardware: Macintosh (640 by 480 pixels, 256 colors).

Tubular Organs 1.1 by C.M. Czarnecki © 1993.

HyperCard courseware that reviews the morphology of the major components comprising the walls of tubular organs of the gastrointestinal, respiratory, reproductive, and urinary systems of mammals and birds. Schematic illustrations of epithelium and glands, connective tissue and muscle are included. The program is presented in two parts. Review, presented in question & answer format; Self-Quiz, illustrating profiles of selected tubular organs as seen in tissue sections.

Disk size: 2.8 MB. Minimum hardware: Macintosh (9" b&w screen); requires 2 MB RAM.

Virtual Veterinary Anatomy by V.S. Cox (under development)

Authorware courseware presenting images of dissected ungulates (hoofed animals). May be used to prepare for dissection and to review at home after dissection. Intended to make anatomic learning more efficient (not to replace dissection). Most of the images are from fresh tissue dissections which are more realistic than embalmed material. Endoscopic videoclips are included to add functional understanding.

Hardware: Windows 95/NT, 800 x 600 pixels.