10-1-2005

Ocular anatomy histology Powerpoint presentation

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Ocular anatomy histology Powerpoint presentation

Abstract
This project is a digital photo representation of ocular histology slides, chosen to represent the basic ocular anatomy course as taught at Pacific University College of Optometry. The purpose of this project is to facilitate the study of ocular histology without requiring access to a microscope and histology slides, or to an internet connection. This Microsoft Powerpoint presentation was prepared by topic using digital photos of the ocular histology slides at Pacific University. These photos were taken through the microscope with a four megapixel Olympus digital camera. Multiple photos were taken of each view of interest, and the best representations of given areas were included in the powerpoint presentation. Many of the photos were of sufficient quality that they were requested for use by Dr. Lee Ann Remington O.D .. Twenty-nine of the images were reproduced in the second edition (2005) of her textbook: Clinical Anatomy of the Visual System. The series of powerpoint presentations, in their varying forms of evolution, have been freely available to students and faculty at Pacific University over the past two years through access to the College of Optometry Web-based server, Victoria. I have received feedback from several first year students. The program was used to assist their study of the laboratory portion of the ocular anatomy course at Pacific University. Those who used the program particularly liked the formatting and accessibility of the images. They were able to view and print the images while studying on personal computers. I have received other feedback noting the convenience of being able to make a single download and having the information on hand, particularly from students without internet access at home. While appreciated by the target audience for which the program was intended, there have been several critiques that the project is redundant. The information provided is viewed in the laboratory portion of the anatomy course, or available through several optometric and ophthalmologic university websites or publications. While this is true, it doesn't take into consideration the benefit to the projected users of the program; namely the ability to study regardless of microscope access or internet availability. Also to be considered is that several of the images are now available in Dr. Remington's new textbook, however I view this as an endorsement rather than a detraction from this thesis project.

Degree Type
Thesis

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Ocular Anatomy Histology
Powerpoint Presentation

Signatures

Author:

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Advisor:

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Lee Ann Remington
BIOGRAPHY

Neil A. VanderHorst is a member of Pacific University College of Optometry graduating class of 2006. Neil is a member of Beta Sigma Kappa Honors Society, and enjoys gaining experience in a wide variety of optometric specialties including ocular disease and visual therapy.

Neil is a Canadian student and received a Bachelor of Science from Okanagan University College in Kelowna, British Columbia, Canada. This Bachelors degree includes a Major in Biology, with a concentration in physiology, along with a Minor in French. Neil has an affinity for genetics, and enjoys fluency in the French language having lived in France for two years.

Neil VanderHorst enjoys the support of his loving wife Kimberly, as well as his baby daughter Emma. After graduation the VanderHorst family plan to settle in northern Washington state for several years, pending the decision to go into private practice in the US or in Canada. It is Neil’s long-term practice goal to become a well respected pediatric specialist.
ABSTRACT

This project is a digital photo representation of ocular histology slides, chosen to represent the basic ocular anatomy course as taught at Pacific University College of Optometry. The purpose of this project is to facilitate the study of ocular histology without requiring access to a microscope and histology slides, or to an internet connection.

This Microsoft Powerpoint presentation was prepared by topic using digital photos of the ocular histology slides at Pacific University. These photos were taken through the microscope with a four megapixel Olympus digital camera. Multiple photos were taken of each view of interest, and the best representations of given areas were included in the powerpoint presentation.

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Inner Limiting Membrane
Nerve Fiber Layer

Meningeal Sheaths:
Pia Mater
Arachnoid
Dura Mater
Thinning of NFL, Ganglion cell layer, IPL, INL

Retinal thickening as approaching macula
(macula just off to the right of picture)
CORNEA & LIMBUS
HISTOLOGY SLIDES

An Optometric Thesis project by
Neil VanderHorst

Cornea
- Epithelium
- Bowman's Layer
- Stroma
- Descemet's Layer
- Endothelium
Corneal Epithelium (A) continuous with Conjunctival Epithelium (B)
Corneal Stroma (C) continuous with Sclera (D)
Conjunctival Stroma (E)  Episceral Vessels (F)
EYELID
HISTOLOGY SLIDES

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Upper Lid

Orbicularis muscle

Meibomian glands
Duct of Meibomian Gland
Henle's Glands
with duct

Henle's Crypts
with Goblet Cells
Lower Lid

- Palpebral Conjunctiva
- Meibomian Gland
- Accessory Lacrimal Gland
UVEAL TRACT
HISTOLOGY SLIDES

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LENS & EMBRYOLOGY
HISTOLOGY SLIDES

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Developmental changes from lens placode, to lens pit, to lens vesicle.
Note the 8mm ocular development is at a lesser stage of progression than 6mm.

See the differentiation between neural retina and retinal pigmented epithelium.
12 mm

Note elongation of posterior lens fibers. Also of the migration of mesenchyme to form corneal endothelium.

15 mm

Differentiation of neural retina into separate retinal layers.
Observable lens bow, mesenchyme migration into corneal stroma, beginning of lid migration.
35 mm

Distinct retinal and corneal layers.

45 mm

Full migration of lids.
ACKNOWLEDGEMENTS

My special thanks go to Dr. Lee Ann Remington for her invaluable assistance and supervision of this project. Without her patient revisions and counsel throughout subsequent versions of the presentation this project would not have been possible.

I also thank my loving wife for her assistance and conversation during the time consuming photo sessions, the hours of which could have been very lonely indeed.

Finally I acknowledge the value of the Microsoft software used to develop this presentation; namely Powerpoint and Word. I also had the use of a fine digital camera from Olympus.