

Biology of the Eye

ANA 6050, ANA 7055, BIO 6055, and BIO 7055

(3 Credits)

Fall 2017

Tuesday and Thursday; 2:30 – 3:45 pm

State Hall, Room 106

Syllabus

- Aug. 31 Introduction to the course (Dr. Pan, Ophthalmology & Anatomy)
Structure and development of the human eye (Dr. Berkowitz, Anatomy & Ophthalmology)**
- Sept. 5 Cornea – Morphology, biochemistry, and physiology
(Dr. Yu, Ophthalmology & Anatomy)**
- Sept. 7 Evolution of the eye (Dr. Friedrich, Biological Sciences)**
- Sept. 12 Lens – Anatomy, biochemistry, and molecular biology
(Dr. McDermott, Ophthalmology)**
- Sept. 14 Cornea – Infectious disease (Dr. Berger, Anatomy)**
- Sept. 19 Lens – Cataract (Dr. McDermott, Ophthalmology)**
- Sept. 21 Cornea – Corneal wound healing & refractive surgery (Dr. Sosne, Ophthalmology)**
- Sept. 26 Exam I (3:00 – 4:20 pm)**
- Sept. 28 Choroid and choroidal circulation (Dr. Braun, Anatomy)**
- Oct. 3 Photoreceptors and phototransduction (Dr. Qiao, Henry Ford Hospital)**
- Oct. 5 Retinal circuitry and cellular organization (Dr. Ichinose, Anatomy & Ophthalmology)**

- Oct. 10 Retinal physiology and information processing (Dr. Pan)**
- Oct. 12 Ganglion cell photoreceptors and subconscious vision (Dr. Zhang, Oakland University)**
- Oct. 17 Overview of Retinal Imaging Technology (Dr. Berkowitz)**
- Oct. 19 Fundamentals of electroretinography: Basic and clinical considerations (Dr. Glybina, Ophthalmology)**
- Oct. 24 Central visual pathways and processing (Dr. Ichinose, Anatomy & Ophthalmology)**
- Oct. 31 Exam II (3:00 – 4:20 pm)**
- Nov. 2 Retinal vasculature: development, circulation and diseases (Dr. Kowluru, Ophthalmology & Anatomy)**
- Nov. 7 Aging processes and the onset of eye diseases (Dr. Arking, Biological Sciences)**
- Nov. 9 Retinal regeneration in zebrafish (Dr. Thummel, Anatomy & Ophthalmology)**
- Nov. 14 Non-coding RNAs in the eye and ocular diseases (Dr. Xu, Ophthalmology & Anatomy)**
- Nov. 16 Retinal innate immunity (Dr. Kumar, Ophthalmology & Anatomy)**
- Nov. 21 Retinal diseases (Dr. Abrams, Ophthalmology)**
- Nov. 28 Glaucoma (Dr. Goyal, Ophthalmology)**
- Nov. 30 Age-related macular degeneration (Dr. Lin, Ophthalmology)**
- Dec. 5 Diabetic retinopathy (Dr. Chapman, Ophthalmology)**
- Dec. 7 Visual prosthesis (Dr. Im, Henry Ford Hospital)**
- Dec. 12 Term paper due (for graduate credit)**
- Dec. 14 Exam III (2:45 – 4:45 pm)**