

580.625: Structure and Function of the Auditory and Vestibular Periphery

Organizing Faculty: P. Fuchs

Summary: This course will cover basic mechanisms and functions of the inner ear and brainstem. Grades will be based on participation in class and first-half and second-half exams (both in class, short answer/essay types).

Meeting Times: Tuesday and Thursday, 9:00 - 10:15 a.m. in 529 Ross Research Bldg. at the School of Medicine. An organizational meeting will be held at this location on Thursday, Sept. 1 at 9:00AM.

Course Materials: Most lectures will be given in the form of PowerPoint presentations. Annotated versions of these files will be posted on Blackboard (registered students) and the webpage of the Center for Hearing and Balance on the afternoon of the lecture. This site can be accessed at: <http://www.strucfunc.com>. Course materials on the website are freely available to the public but have been downsampled to prevent their misuse. If you would like to incorporate any of this material in your own presentations, contact the author for permission and access to high-quality images.

For further information regarding the course contact Paul Fuchs (email: pfuchs1@jhmi.edu)

Schedule of Lectures, Fall 2011

- Sept. 1 Organizational meeting (Fuchs)
- Sept. 6 Overview of the Auditory Periphery (Fuchs)
- Sept. 8 Hair Cell Structure and Transduction (Glowatzki)
- Sept. 13 Hair Cell Synaptic Transmission (Glowatzki)
- Sept. 15 Adaptation of Mechanotransduction, Feedback, and Tuning (Fuchs)
- Sept. 20 Mechanisms of Hair Cell Differentiation (Doetzlhofer)
- Sept. 22 Structural Organization of the Ear (Deans)
- Sept. 27 Cochlear Mechanics (Spector)
- Sept. 29 Outer Hair Cell Electromotility and Active Force Production (Spector)
- Oct. 4 Cochlear Anatomy Lab (Hiel) Ross 813 (Temporal Bone Lab)
- Oct. 6 Anatomy and Physiology of the Auditory Nerve (Fuchs)
- Oct. 11 Anatomy and Physiology of the Ventral Cochlear Nucleus (May)
- Oct. 13 Anatomy and Physiology of the Dorsal Cochlear Nucleus (May)
- Oct. 18 Sound Coding and Information Theory (Young)
- Oct. 20 Mid-term exam (through 10/13 lectures inclusive)
- Oct. 25 Physiology of Hearing Loss 1 (Young)
- Oct. 27 Physiology of Hearing Loss 2 (Young)
- Nov. 1 Clinical Perspectives on Hearing Loss (Niparko)
- Nov. 3 Vestibular System (8 am) (Della Santina)
- Nov. 8 Vestibular System (Della Santina)
- Nov. 10 Vestibular System (8 am) (Della Santina)
- Nov. 12-17 Society for Neuroscience**
- Nov. 17 Vestibular System in Space (Shelhamer)
- Nov. 22 Cholinergic Inhibition of Hair Cells (Fuchs)
- Nov. 24 **No Class Thanksgiving Vacation**
- Nov. 29 Vestibular Efferents (Sadeghi)
- Dec. 1 Effects of Olivocochlear Efferents on Hearing (Lauer)
- Dec. 6 Last Day of Classes**
- Dec. 8 - 10 Reading Period**
- Dec. 12 - 19 Final Examination Period**