

Hanse-Wissenschaftskolleg
Institute for Advanced Study

Workshop

Auditory Efferents: *Closing the Loop(s)*

Delmenhorst, 04.-06. November 2024

OrganisatorInnen/ Organizers:

Dr. Laurel H. Carney, University of Rochester, New York, USA
Dr. Christine Köppl, Carl von Ossietzky Universität, Oldenburg
Dr. Go Ashida, Carl von Ossietzky Universität, Oldenburg

Gefördert durch/ Funded by:



Venue:

Hanse-Wissenschaftskolleg
Institute for Advanced Study

Lehmkuhlenbusch 4
27753 Delmenhorst
Tel: +49 4221 9160-100
www.hanse-ias.de

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Program

Monday, 04. November 2024

Session 1: Setting the stage

- 09:30 – 09:45 **Introduction to Workshop: Motivation for bringing this group together**
Laurel Carney, University of Rochester (Rochester NY, USA)
- 09:45 – 10:30 **Olivocochlear efferents across vertebrate evolution: Major changes**
Christine Köppl, Carl von Ossietzky Universität (Oldenburg, DE)
- 10:30 – 11:15 **Role of olivocochlear efferents in hearing across the lifespan: Insights from mouse models**
Amanda Lauer, Johns Hopkins University (Baltimore, MD, USA)
- 11:15 – 11:45 *KAFFEPAUSE / COFFEE BREAK*
- 11:45 – 12:30 **Does the medial olivocochlear efferent reflex really help hearing in noise?**
Enrique Lopez-Poveda, University of Salamanca (Salamanca, ES)
- 12:30 – 13:15 **The efferent system and noise-induced hearing loss**
Ana Belén Elgoyan, University of Buenos Aires (Buenos Aires, Argentina)
- 13:15 – 14:30 *MITTAGESSEN / LUNCH*

Session 2: Cochlear efferent circuitry and physiology

- 14:30 – 15:15 **Efferent synaptic mechanisms in the inner ear**
Sonja Pyott, University Medical Center Groningen (Groningen, NL)
- 15:15 – 16:00 **Cellular mechanisms mediating lateral efferent modulation of auditory nerve fiber activity**
Elizabeth Glowatzki, Johns Hopkins University (Baltimore, MD, USA)
- 16:00 – 16:30 *KAFFEPAUSE / COFFEE BREAK*
- 16:30 – 17:15 **LOC Flexibility**
Lisa Goodrich, Harvard University (Cambridge, MA, USA)
- 17:15 ff **Discussion Round - Summary of Day 1: What important questions did we identify?**
- 18:30 – 20:00 *ABENDESSEN / DINNER*

Tuesday, 05. November 2024

Session 3: Brainstem efferent circuitry, physiology and function

- 09:30 – 10:15 **Central auditory pathways and the efferent system**
Brett Schofield, Northeast Ohio Medical University (Rootstown, OH, USA)
- 10:15 – 11:00 **Cochlear efferent neurons and their local circuitry**
Lawrence Trussell, Oregon Health Science University (Portland, OR, USA)
- 11:00 – 11:30 *KAFFEPAUSE / COFFEE BREAK*
- 11:30 – 12:15 **Inhibitory circuits in the medial olivocochlear system**
Catherine Weisz, NIH-NIDCD (Bethesda, MD, USA)
- 12:15 – 13:00 *POSTER SESSION*
- 13:00 – 14:30 *MITTAGESSEN / LUNCH*

Session 4: Systems-level physiology and perception

- 14:30 – 15:15 **Systems-level efferent physiology**
Paul Delano, Universidad de Chile (Santiago, Chile)
- 15:15 – 16:00 **TBN**
- 16:00 – 16:30 *KAFFEPAUSE / COFFEE BREAK*

Session 5: Human physiology and perception

- 16:30 – 17:15 **Assessment of the medial olivocochlear reflex using electrocochleography in humans 8**
Skyler Jennings, University of Utah (Salt Lake City, UT, USA)
- 17:15 ff **Discussion Round - Summary of Day 2: What important questions did we identify?**
- 18:30 – 20:00 *ABENDESSEN / DINNER*

Wednesday, 06. November 2024

- 10:00 – 10:30 **Rapid evaluation of medial olivocochlear and middle ear muscle efferent reflex dynamics**
Shawn Goodman, University of Iowa (Iowa City, IA, USA)
- 10:30 – 11:00 **Psychoacoustic measures of efferent function (with some modeling)**
Elizabeth Strickland, Purdue University (West Lafayette, IN, USA)
- 11:00 – 11:30 *KAFFEEPAUSE / COFFEE BREAK*

Session 6: Incorporating efferents into auditory models

- 11:30 – 12:15 **Efferent effects in the Meddis model of the auditory periphery**
Tim Jürgens, Technische Hochschule Lübeck (Lübeck, DE)
- 12:15 – 13:00 **A subcortical model with MOC efferents**
Laurel Carney, University of Rochester (Rochester NY, USA)
- 13:00 – 14:30 *MITTAGESSEN*
- 14:30 – 15:15 **Wrap-Up - What are key aspects that should be included in models?**
Go Ashida, Carl von Ossietzky Universität (Oldenburg, DE)
- 15:15 ff **Summary of workshop: What is next for the Study Group?**