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BME People

Robert J Peterka

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Department(s)

Biomedical Engineering

Associate Scientist, Biomedical Engineering, OHSU

Adjunct Associate Professor, Dept. of Physiology & Pharmacology

Faculty member, [Neuroscience Graduate Program](#) and [Integrative Biomedical Sciences Program](#)



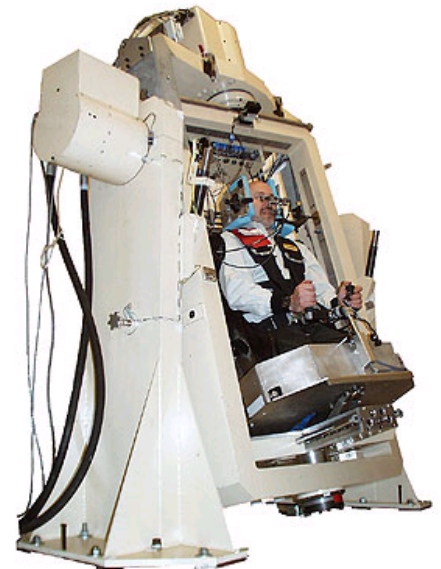
Research Interests

The Peterka Lab

Dr. Peterka is interested in how the brain uses various sources of sensory information to provide an accurate sense of orientation.

He studies vestibular related eye movement control and the interaction of vestibular, visual, and proprioceptive system information used for the control of balance and orientation in humans.

This sensory information is necessary for the control of balance and movement and for the generation of eye movements that maintain clear vision during movements of the head. Eye movements and posture control are studied with particular concern for the processes involved in situations where different sensory systems provide conflicting information to the brain. Such situations can lead to disorientation and motion sickness. His research is important in understanding the underlying mechanisms which cause patients to suffer from equilibrium disorders. He is particularly interested in the application of research results to the development of new clinical balance function tests.



Research Group(s)

Neuroengineering

Systems Neuroscience

Selected Publications

Peterka RJ, Loughlin PJ.

Dynamic regulation of sensorimotor integration in human postural control. *J Neurophysiol.* 2004 Jan;91(1):410-23. Epub 2003 Sep 17.

PMID: [13679407](#) [[PubMed](#) - [indexed for MEDLINE](#)]

Peterka RJ.

Simplifying the complexities of maintaining balance. *IEEE Eng Med Biol Mag.* 2003 Mar-Apr;22(2):63-8. No abstract available.

PMID: [12733461](#) [[PubMed](#) - [indexed for MEDLINE](#)]

Peterka RJ.

Sensorimotor integration in human postural control.

J Neurophysiol. 2002 Sep;88(3):1097-118.

PMID: 12205132 [PubMed - indexed for MEDLINE]

Zupan LH, **Peterka RJ**, Merfeld DM.

Neural processing of gravito-inertial cues in humans. I. Influence of the semicircular canals following post-rotatory tilt.

J Neurophysiol. 2000 Oct;84(4):2001-15.

PMID: 11024093 [PubMed - indexed for MEDLINE]

Peterka RJ.

Postural control model interpretation of stabilogram diffusion analysis.

Biol Cybern. 2000 Apr;82(4):335-43.

PMID: 10804065 [PubMed - indexed for MEDLINE]



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