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- [Prospective Students](#)
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- [Admissions](#)
- [Research](#)
- [People](#)
- [News](#)
- [Events](#)
- [Employment & Internships](#)
- [Facilities & Resources](#)
- [Contact BME](#)

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- [Find Degree Programs](#)
- [Academic Calendar](#)
- [Academic Affairs](#)

## BME People

# Paul Cordo

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### Current Appointments

*Senior Scientist*

*Professor*

*Biomedical Engineering*

Adjunct, Department of Physiology and Pharmacology, OHSU

### Department(s)

*Biomedical Engineering*

### Research Interests

Neuroengineering Research

### Research Group(s)

*Neuroengineering*

*Systems Neuroscience*

### Selected Publications

Cordo P, Gurfinkel VS, Bevan L, Kerr GK..

Force and displacement-controlled tendon vibration in humans..

Electroencephalogr Clin Neurophysiol. 1993 Feb; 89(1):45-53

PMID: 7679630

Gurfinkel V, Cacciatore TW, Cordo P, Horak F, Nutt J, and Skoss R (2006)

Postural Muscle Tone in the Body Axis of Healthy Humans, 96: 2678 - 2687.

Cordo P, Gurfinkel V. (2004)

Motor coordination can be fully understood by studying complex movements. Prog. Brain Res. 143: 29-

38. Presents the case for studying more complex movements in order to understand all of the

components of coordination.

Cordo P, Gurfinkel V, Smith RC, Hodges PW, Verschueren S, Brumagne S. (2003)

The sit-up: complex kinematics and muscle activity in voluntary axial movement. J. Electromyogr.

Kinesiol. 13: 239-252. Describes kinematics and muscle activity associated with voluntary axial

movement.

Cordo P, Flores-Vieira C, Verschueren S, Inglis JT, Gurfinkel V. (2002)

Position sensitivity of human muscle spindles: single afferent and population representations. J.

Neurophysiol. 87: 1186-1195. Demonstrates that muscle spindle responses to movement contain a

number of features that may independently encode several kinematic parameters related to joint

position.

Cordo P, Gurfinkel VS, Bevan L & Kerr GK.

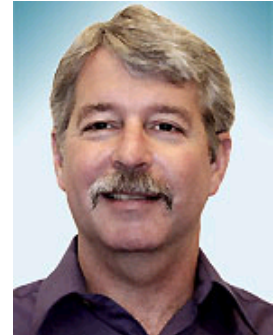
"Proprioceptive consequences of tendon vibration during movement." J. Neurophysiol. 74:1675-1688

(1995)

Cordo P, Nashner LM (1982)

Properties of postural adjustments associated with rapid arm movements. J Neurophysiol 47: 287-302.

Provides a detailed description of postural adjustments that anticipate balance disturbances due to



voluntary movements. Control of anticipatory postural adjustments is modeled for the first time.

Cordo P, Gandevia SC, Hales JP, Burke D, Laird G. (1993)

Force and displacement-controlled tendon vibration in humans. EEG Clin Neurophysiol 89: 45-53. Tendon vibration is a specific and powerful stimulus for muscle spindle Ia afferents. The paper describes the design of a tendon vibrator in which the pulse shape, amplitude, and background force is controlled and the sensitivities of muscle spindle Ia afferents to vibratory stimuli with different frequencies, amplitudes and background forces.

Cordo P. (1987) Mechanisms controlling accurate changes in elbow torque in humans. J Neurosci 7:432-442. Describes feedback regulation of voluntary motor activity by vision, breaking the motor activity down into open-loop, feedforward, and feedback control.

Cordo P, Carlton L, Bevan L, Carlton M, Kerr GK (1994)

Proprioceptive coordination of movement sequences: role of velocity and position information. J Neurophysiol 71: 1848-1861. Proprioceptive input related to dynamic joint position (during movement) and velocity is used to trigger successive components of movement sequences.

Cordo P, Inglis JT, Verschueren S, Collins JJ, Merfeld DM, Rosenblum S, Buckley S, Moss F. (1996) Noise in human muscle spindles. Nature 383: 796-770.

First demonstration of stochastic resonance in human sensory afferents.

### Related Links

[OHSU Brain Institute](#)



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