

# 大学院生命融合科学教育部セミナー INVITED TALK

2026 Jan. 14th. 16:30-18:00, 杉谷キャンパス 講義実習棟 U8 Room 302



PROFESSOR EMERITUS  
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## Biography

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2002 Professor, National  
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1995 Staff Scientist, Director,  
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1991 Associate Professor,  
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1989 Postdoctoral Fellow, New  
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1985 Instructor, Faculty of  
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1982 Graduate School, Faculty  
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1982 Graduated from Kyoto  
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## Dynamic activity model of movement disorders: a unified view to understand their pathophysiology

### Abstract

Malfunction of the basal ganglia leads to movement disorders such as Parkinson's disease, dystonia, and dyskinesia. To understand their pathophysiology in a unified manner, we propose the "dynamic activity model" based on changes in cortically induced responses in individual nuclei of the basal ganglia. In the normal state, electric stimulation of the motor cortex, mimicking cortical activity during initiation of voluntary movement, evokes a triphasic response consisting of early excitation, inhibition, and late excitation in the output stations of the basal ganglia. This response pattern is systematically altered in various models of movement disorders and could well explain the pathophysiology of their motor symptoms. Furthermore, stereotactic surgery restores the response pattern and normalizes movement. The "dynamic activity model" provides a more comprehensive view of the pathophysiology underlying the motor symptoms of movement disorders and clues for new treatments.

本講演に関する連絡先 : 学術研究部医学系 統合神経科学講座

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