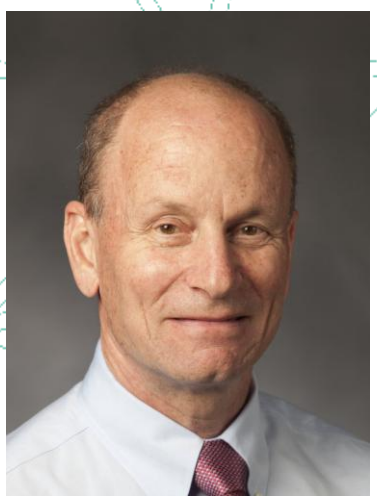
# NEURO GLOBAL Seminar

Date & Time

## Thursday, April 16, 2026
## 15:30 – 17:00



Speaker

# Stephen Lisberger, Ph.D.

Professor of Neurobiology, Duke University

School of Medicine

Title

## How the cerebellum computes and learns

Venue

Auditorium, School of Medicine Building 6 (Megabank) , 1 F/ Seiryo Campus
**医学部６号館 (メガバンク)1階 講堂 星陵キャンパス【B08】**
【MAP】 https://www.tohoku.ac.jp/map/en/?f=SR_B08

Format On-site ONLY

Related Website https://www.neuro.duke.edu/research/faculty-labs/lisberger-lab

●Neuro Globalプログラム生 (Neuro Global Program Students)
【脳科学セミナーシリーズEx】/【先進脳科学セミナーシリーズEx】セミナー 1ポイント
【Brain Science Seminar Series Ex】/【Advanced brain science seminar series Ex】 1 point
●医学系研究科(Graduate School of Medicine)
【医学履修課程】国際交流セミナー (アドバンスド講義科目)」 出席1回分
【Medical Science Doctoral Course】 International Interchange Seminar (Advanced Lecture course) 1 attendance
●生命科学研究科(Graduate School of Life Sciences)
【単位認定セミナー】 【イノベーションセミナー（留学生対象）】 2ポイント
【Credit-granted seminar】 【Innovation seminar (For international students)】 2 points

**東北大学 Neuro Global 国際共同大学院プログラム事務局**
**neuroglobal@grp.tohoku.ac.jp**
**http://www.neuroglobal.tohoku.ac.jp**

Contact : Prof. Mayu Takahashi
[neuroglobal@grp.tohoku.ac.jp]

NEURO GLOBAL
Seminar

## Title

**How the cerebellum computes and learns**

## Abstract

**I will present results from a new approach to understand how the cerebellum works and learns. To provide historical context, I will briefly assert our current model of cerebellar motor learning in smooth pursuit eye movements or awake, behaving monkeys. Next, I will outline a strategy to define how the cerebellar circuit computes by identifying neuron types from extracellular recordings. I will tell you how we have identified the discharge properties during smooth pursuit eye movements of "units" that we are quite confident originate from: Purkinje cells, basket cells, Golgi cells, unipolar brush cells, and mossy fibers. We do not record from granule cells, sadly. Then I will show that key input-output transformations of temporal dynamics seem to occur in the granule cell layer, possibly due to long-timescale synaptic dynamics. Finally, I will explain how the canonical cerebellar circuit computes through a biomimetic circuit model that reproduces both the temporal dynamics and spatial organization of the responses of each individual Purkinje cell in our sample.**

東北大学 Neuro Global 国際共同大学院プログラム事務局
neuroglobal@grp.tohoku.ac.jp
http://www.neuroglobal.tohoku.ac.jp