

2025年度 交流助成 成果報告（海外派遣）



2025年 12月 3日

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保健医療福祉学研究科 博士後期課程
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会議等名称 Society for Neuroscience (SfN)
Annual Meeting 2025

開催地 San Diego, USA

期 日 2025/11/15-19

1) 会議（研究会）の概要

The Neuroscience Annual Meeting 2025, organized by the Society for Neuroscience (SfN), was held in San Diego from November 15–19. As the world's largest international conference in neuroscience, it brings together tens of thousands of researchers across basic science, clinical medicine, and engineering. The meeting features posters, talks, symposia, workshops, and industry exhibits, offering a comprehensive platform where advances in neurobiology, neural engineering, AI, and biomedical technologies are presented. Its highly interdisciplinary nature makes it an ideal venue for research situated at the interface of life science and engineering.

2) 会議（研究会）で発表した研究テーマとその討論内容

I presented a poster titled “Analysis of peripheral neuromuscular activity modulation of the lower limb during gait function acquisition in toddlers.” The study explored how motor-unit-level activity reorganizes during gait acquisition using synchronized surface EMG and 3D motion capture.

During the session, discussions centered on methodological considerations such as infant EMG preprocessing, reduction of motion artifacts. Researchers studying motor development shared practical techniques for improving signal stability, while developmental neuroscience researchers commented on potential links between peripheral neuromuscular maturation and cortical developmental changes.

- 3) 出席した成果（ご自身の研究のみならず、他の研究者との交流を通じて得たものがあれば具体的に報告して下さい。）

Participation in the conference provided substantial benefits that extended beyond the presentation itself. Engaging with researchers who study motor development allowed me to refine my analytical approach, especially regarding the interpretation of variability in joint kinematics and the transition from redundant to efficient motor patterns in early gait. These discussions clarified how reductions in movement variability may reflect emerging stability rather than simple constraint, enhancing the theoretical grounding of my work.

Conversations with neuroscientists working with EEG enriched my understanding of how peripheral motor-unit activity may correspond with central neural maturation. This broader perspective highlighted the value of integrating peripheral and cortical measures when investigating developmental motor control—a direction that could deepen the scientific impact of my future studies.

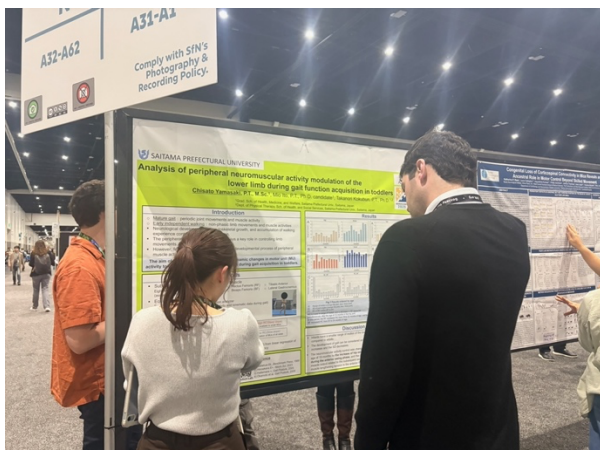
Furthermore, by exchanging methods with teams analyzing infant EMG, I gained new strategies for handling nonstationary signals and developmental variability, which will directly strengthen upcoming analyses. The meeting also provided an opportunity to situate my research within the wider biomedical engineering context, illustrating how developmental biomechanics can interface with neural engineering, computational modeling, and pediatric rehabilitation science.

Overall, the conference significantly advanced my research foundation, expanded my academic network, and opened avenues for interdisciplinary collaboration that will shape the next steps of my work.

- 4) その他

I would like to express my sincere gratitude to the foundation for supporting my participation in this international meeting. The experience greatly contributed to the growth of my research and strengthened my connections with researchers across fields.

公益財団法人 中谷財団
交流助成 【海外派遣】



Poster Presentation:

Presenting my study on neuromuscular activity during gait development at SfN 2025.



Conference Venue:

Main hall of the Neuroscience 2025 meeting in San Diego, where researchers worldwide gathered.