



Washington State University

College of Education, Sport and Human Sciences

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Will defend the Thesis on

Date: April 13, 2026

Time: Noon

Pullman Campus: Cleveland Hall, Room 160A

Zoom: Link by request ceshs.gradstudies@wsu.edu

Faculty, students and the general public are encouraged to attend

Title:

A SYSTEMATIC REVIEW OF NEUROEDUCATIONAL INTERVENTIONS IN TEACHER EDUCATION TO ENHANCE NEUROLITERACY AND REDUCE NEUROMYTHS

Chair: Chad Gotch

This systematic review synthesizes empirical research on neuroeducational interventions in K–12 teacher education designed to enhance neuroliteracy and reduce neuromyth endorsement. Guided by PRISMA 2020 and the PICOC framework, 26 studies published between 2005 and 2025 were analyzed using an inductive three-cycle coding process and thematic synthesis. Four intervention types were identified: course-based, professional development (PD), refutational, and combined approaches. Findings indicate that interventions are most effective when they integrate education-relevant neuroscience content, explicitly address misconceptions through refutation, and incorporate reflective, inquiry-based learning. Sustained and iterative exposure to neuroscience concepts supported more robust conceptual change, whereas short-term interventions produced more limited or temporary effects. Teacher-level factors, including epistemic beliefs and emotions, influenced outcomes, underscoring the complexity of belief revision. Despite gains in neuroscience knowledge, reductions in neuromyth endorsement were inconsistent, suggesting that knowledge acquisition alone is insufficient for meaningful conceptual change in teacher education contexts.