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Shiv Smith Karunakaran*, Washington State University, PO Box 643113, Pullman, WA 99164, and **James Whitbread, Jr.** and **Abigail Higgins**. *Uses of neurocognitive measures to evaluate cognitive load during the mathematical proving process*. Preliminary report.

A recent special issue of ZDM (June 2016) made the case for increasing the interdisciplinary collaboration between researchers in the fields of mathematics education and cognitive neuroscience. Specifically, Ansari and Lyons (2016) argued for increasing the "ecological validity of the testing situations and specific [neurocognitive] tests used to measure mathematical processing" (pp. 379-380). To this end, Ansari and Lyons (2016) suggest that it would be useful to explore the use of lower-cost and less invasive neuroimaging methods such as Near Infrared Spectroscopy (NIRS). The study reported on in this talk serves as a "proof-of-concept" for the use of Frontal Near-Infrared Spectroscopy (fNIRS) to measure the level of cognitive load of the brain under mathematical processing. The talk will address the pros and cons of using neurocognitive measures, such as the fNIRS, to measure and examine the physiological stresses of the brain under the complex mathematical process of proving. (Received September 20, 2016)