

Dr. Dr. Elise Klein

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Leibniz-Institut für Wissensmedien
Schleichstr. 6
72076 Tübingen
e.klein@iwm-tuebingen.de
+49 7071 979-205

Education

09/12/2012	PhD degree (Dr. rer. nat., summa cum laude), University of Tuebingen, Germany
04/03/2009	MD degree (Dr. med., summa cum laude), RWTH Aachen University, Germany
2008-2011	Equivalent to MSc in Psychology , University of Tuebingen
2000 – 2007	Medical School and Medical Approbation , RWTH Aachen University and University of Bern, Switzerland (2006)

Research Experience

since 01/2014	Head of Junior Research Project Group <i>NeuroLearn</i> at the Leibniz-Institut für Wissensmedien and Wrangell Fellow (since 2015)
since 11/2012	Post-doc Researcher at the Leibniz-Institut für Wissensmedien, Tuebingen
10/2008-10/2012	Research Assistant , Diagnostics and Cognitive Neuropsychology, University of Tuebingen
01/2008-10/2012	Research Assistant , Department of Neurology, Section Neuropsychology and Section Neurolinguistic, University Hospital, RWTH Aachen University

Academic Functions (Selection)

Associated member at the LEAD Graduate School, University of Tuebingen, Germany

Reviewer for international funding institutions (e.g., ISF, FWO, SNF etc.), ad hoc reviewer for 37 scientific journals (e.g., Cortex, Cerebral Cortex, Human Brain Mapping, NeuroImage, Journal of Neuroscience etc.)

Visiting Researcher at the International Center for Neurosciences, SARAH network of Rehabilitation Hospitals, Brazil

Third Party Funding (about 2.3 Mio €; own share: about 1.7 Mio €)

Individual applications (about 1.5 Mio €)

Klein (2015-2020)	<i>Margarete von Wrangell Fellowship</i> , funded by the European Social Fund and the Ministry of Science, Research and the Arts Baden-Württemberg (380,000 €)
Klein (2014-2017)	<i>Neurocognitive Foundations and processing pathways of arithmetic learning and their plasticity in adults as well as in typically and atypically developing children</i> , funded by the Leibniz-competition in the funding line "Women in Academic Leadership Positions" (958,644 €)
Klein (2011-2013)	<i>Neurofunctional foundations and neurocognitively supported learning of arithmetic processes</i> , funded by the "Exzellenzinitiative Research Seed Capital Program (RiSC)" of the federal state of Baden-Württemberg (100,000 €)
Klein (2011-2012)	<i>Neurofunctional foundations and neurocognitively supported learning of arithmetic processes</i> , funded by "Projektförderung für NachwuchswissenschaftlerInnen 2011" (29,631 €).

Joint applications (about 832,693 €; own share: 227.860 €)

Klein, Karnath (2018-2021)

Facts and Figures: Neurofunktionelle Strukturen und kognitive Prozesse numerischer Größenverarbeitung und arithmetischen Faktenabrufs, funded by the Deutsche Forschungsgemeinschaft DFG 404.820 € (own share: 227.860 €, KL 2788/2-1)

Ninaus, Karnath, **Klein**, Moeller (2017-2020)

Benefits of a game-based cognitive interface for knowledge work – from basic effects and neural correlates to neuropsychological rehabilitation, funded by the Ministry of Science, Research and the Arts Baden-Württemberg (168,933 €)

Bieck, **Klein**, Siegler, Moeller, Dresler (2017-2018)

Neural correlates of Fraction Arithmetic, funded within the LEAD Intramural Research Fund (IMRF) of the LEAD Graduate School & Research Network (9,900 €)

Möller, **Klein** (2014-2017)

On the neuro-cognitive representations involved in fraction processing and its learning, funded by the Deutsche Forschungsgemeinschaft DFG (249,040 €, MO 2525/2-1)

Awards and Honors

- 2017 Elected member of AcademiaNet (Network for excellent women in science)
- 2014 Selection by the board of trustees for the Nobel Laureate Meeting in Lindau (e.V.) for attendance to the 64th Lindau Nobel Laureate Meeting (March 2014).
- 2014 Award as Editor for Research Topic *Numerical Development - From Cognitive Functions to Neural Underpinnings* in *Frontiers in Psychology*
- 2010 Borchers Medal of the RWTH Aachen for outstanding medical dissertation

10 Most Relevant Publications

- Klein, E.**, Willmes, K., Bieck, S.M., Bloechle, J., & Moeller, K. (in press). White matter neuro-plasticity in mental arithmetic: changes in hippocampal connectivity following arithmetic drill training. *Cortex*.
- Bloechle, J., Huber, S., Bahnmueller, J., Rennig, J., Willmes, K., Cavdaroglu, S., Moeller, K., & **Klein, E.** (2016). Fact Learning in Complex Arithmetic – The Role of the Angular Gyrus revisited. *Human Brain Mapping, 37*, 3061-3079.
- Klein, E.**, Suchan, J., Moeller, K., Karnath, H.-O., Knops, A., Wood, G., Nuerk, H.-C., & Willmes K. (2016). Considering structural connectivity in the triple code model of numerical cognition - Differential connectivity for magnitude processing and arithmetic facts. *Brain Structure and Function, 221(2)*, 979-95.
- Jung, S., Halm, K., Huber, W., Willmes, K., & **Klein, E.** (2015). What letters can "learn" from Arabic digits - fMRI-controlled single case therapy study of peripheral agraphia. *Brain and Language, 149*, 13-26.
- Klein, E.**, Huber, S., Nuerk, H.-C., & Moeller, K. (2014). Operational momentum affects eye fixation behaviour. *Quarterly Journal of Experimental Psychology, 67(8)*, 1614-1625.
- Klein, E.**, Moeller, K., Kiechl-Kohlendorfer, U., Kremser, C., Starke, M., Cohen Kadosh, R., Pupp-Peglow, U., Schocke, M., & Kaufmann, L. (2014). Processing of intentional and automatic number magnitudes in children born prematurely - Evidence from fMRI. *Developmental Neuropsychology, 39(5)*, 342-364.
- Mihulowicz, U., Willmes, K., Karnath, H.-O., & **Klein, E.** (2014). Single-digit arithmetic processing – anatomical evidence from statistical voxel-based lesion analysis. *Frontiers in Human Neuroscience, 8*:286.
- Klein, E.**, Moeller, K., & Willmes, K. (2013). A neural disconnection hypothesis on impaired numerical processing. *Frontiers in Human Neuroscience, 7*, 663.

Klein, E., Moeller, K., Glauche, V., Weiller, C., & Willmes, K. (2013). Processing pathways in mental arithmetic - Evidence from probabilistic fiber tracking. *PLoS ONE*, *8*(1): e55455.

Klein, E., Moeller, K., Willmes, K., Nuerk, H.-C., & Domahs, F. (2011). The influence of implicit hand-based representations on mental arithmetic. *Frontiers in Psychology*, *2*, 197.

Teaching and Supervisor Experience

Elise Klein has given lectures, seminars, and empirical courses on diagnostic psychology, neuropsychology, and neuroscience in both English and German language for students and graduates at all levels in Germany and Brazil (the latter as visiting Researcher).

She has been the supervisor of one PhD (finished), one Master (finished), and two Bachelor (finished) theses and is currently supervising one PhD and two Bachelor theses (ongoing). In addition, she has co-supervised 15 PhD, MD, Master, and Diploma theses.