Curriculum Vitae
Dr. Myriam C. Sander

Max Planck Institute for Human Development
Research Group "Lifespan Age Differences in Memory Representations"
Lentzeallee 94, 14195 Berlin, Germany

Family Name: Dr. Myriam C. Brandmaier
married to Dr. Andreas Brandmaier (research scientist)
two children (*2012, *2015)

Email: sander@mpib-berlin.mpg.de
Web: myriamsander.com
Orcid: 0000-0001-8387-9855

Professional Appointments

Since 04 / 2014 **Minerva Research Group Leader** (W2 position),
Funded by the Max Planck Society

Principal Investigator (since 01 / 2020)
of the "Lifespan Age Differences in Memory Representations" (LIME) Research Group, Max Planck Institute for Human Development, Center for Lifespan Psychology, Berlin, Germany

Co-Principal Investigator (2014 – 2019)
(together with Dr. Markus Werkle-Bergner) of the "Cognitive and Neural Dynamics of Memory across the Lifespan" (ConMem) Research Group, Max Planck Institute for Human Development, Center for Lifespan Psychology, Berlin, Germany

2015 **Maternity leave** (12 months)

04 / 2011 – 03 / 2014 **Postdoctoral research fellow**
Max Planck Institute for Human Development, Center for Lifespan Psychology, Berlin, Germany

2012 / 2013 **Maternity leave** (12 months)

10 / 2007 – 01 / 2011 **Predoctoral research fellow**
Max Planck Institute for Human Development, Center for Lifespan Psychology, Berlin, Germany

Academic Education

2011 **Dissertation** (magna cum laude), Humboldt-Universität zu Berlin
Lifespan age differences in working memory: Insights from behavioral and electrophysiological markers of capacity and selectivity
Advisors: Ulman Lindenberger, Markus Werkle-Bergner

2008 – 2011 **PhD student, Berlin School of Mind and Brain**
International Graduate Research School at Humboldt-Universität zu Berlin

2004 – 2007 **„Diplom"** in Psychology (grade 1.0), Humboldt-Universität zu Berlin
Binding deficits in visual processing in older adults: An investigation of gamma band modulation by stimulus size
Advisors: Ulman Lindenberger, Markus Werkle-Bergner

2001 – 2003 **„Vordiplom"** [pre-diploma degree] in Psychology, Universität des Saarlandes, Saarbrücken

Professional Memberships and Associations

Since 2018 **Faculty member, Berlin School of Mind and Brain**
International Graduate Research School at Humboldt-Universität zu Berlin

Since 2016 **Faculty member, International Max Planck Research School on the Life Course (LIFE)**
International Graduate Research School of the Max Planck Society

2015 – 2018 **Associated Researcher, Berlin School of Mind and Brain**
International Graduate Research School at Humboldt-Universität zu Berlin

Professional Activities and Services

Peer-Review for Journals

Acta Psychologica; Brain and Cognition; Brain Research; Cognitive, Affective, and Behavioral Neuroscience; Cerebral Cortex; Cortex; Developmental Psychology; Developmental Science; European Journal of Neuroscience; Human Brain Mapping; International Journal of Psychophysiology; Journal of Cognitive Neuroscience; Journal of Experimental Psychology: General; Journal of Gerontology; Journal of the International Neuropsychological Society; The Journal of Neuroscience; Journal of Psychophysiology; Mind, Brain, and Education; Neurobiology of Aging; NeuroImage; Neuropsychologia; Psychology and Aging; PLoS ONE; Psychological Science; Scientific Reports

Professional Services

Since 2020	Elected Representative of the Institute's Scientific Staff for the Scientific Council (Arts and Humanities Section) of the Max Planck Society
2020 – 2021	Mentor, Mentoring Program for Doctoral Students, Universität Greifswald
2019	Member of the Committee for the Selection of Open-Topic Max Planck Research Groups
Since 2019	Mentor, WiNS (Women in Natural Sciences) program, Humboldt-Universität zu Berlin
2017	Member of the Committee for the Selection of Open-Topic Max Planck Research Groups
Since 2016	Elected member of the Personnel Selection Committee, Max Planck Institute for Human Development, Berlin

Society Memberships

Deutsche Gesellschaft für Psychologie (DGPs)
European Cognitive Ageing Society (EUCAS)
Cognitive Neuroscience Society (CNS)

Teaching Experience

2019	*Age-related changes in the formation, consolidation, and retrieval of episodic memories.* Single lecture ("Ringvorlesung") for Bachelor and Master students. Humboldt-Universität zu Berlin.
2019	*Cognitive neuroscience of aging.* Single lecture in a seminar for Bachelor students. Freie Universität Berlin.
2018	*Cognitive neuroscience of aging.* Single lecture in a seminar for graduate students of the LIFE program. Max Planck Institute for Human Development, Berlin.
2014 - 2016	*Research on human memory.* Single lecture, annually taught. International Graduate Program Medical Neurosciences, Charité, Berlin.
2012	*Neural plasticity.* Single lecture in a seminar for Bachelor students. Universität Hamburg.
2011 / 2012	*Cognitive neuroscience of memory development.* Weekly seminar for Bachelor students (co-taught with Dr. Markus Werkle-Bergner). Freie Universität Berlin.

Media Coverage

2018

"Wie tickt das Gehirn?", Fernsehbeitrag, ARD alpha
https://www.br.de/fernsehen/ard-alpha/sendungen/campus/wie-tickt-das-gehirn-lernen-intelligenz-forschung-100.html

"Wie funktioniert Gedächtnisforschung?", Videobeitrag, Die-Debatte.org
https://www.youtube.com/watch?v=A9YHB64dNTg

Grants and Awards

2018 – 2020 **DFG Grant** (Deutsche Forschungsgemeinschaft / German Research Foundation):
Adult Age-differences in Auditory Selective Attention:
The Interplay of Norepinephrine and Rhythmic Neural Activity
Co-Principal Investigator together with Dr. Markus Werkle-Bergner
Total grant: 150.000 Euros

2014 – 2022 **Minerva Research Group funded by the Max Planck Society**
"*Age Differences in Memory Representations"*
Total grant: 650.000 Euros

07 / 2016 **Travel grant** awarded by the German Academic Exchange Service

09 / 2013 **Margret-and-Paul-Baltes-Award**
Prize for outstanding dissertation within the field of Developmental Psychology awarded by the DGPs

04 / 2011 **Travel grant** awarded by the German Academic Exchange Service

06 / 2009 **Travel grant** awarded by the Berlin School of Mind and Brain

2003 – 2007 **Stipend** awarded by the **Cusanuswerk**, Bischöfliche Studienstiftung

Current National and International Collaborations

Prof. Yee Lee Shing (Goethe-Universität, Frankfurt)
Prof. Sarah Weigelt (Technische Universität Dortmund)
Prof. Roberto Cabeza (Duke University, USA)
Prof. Mara Mather (University of Southern California, USA)
Prof. Moritz Daum (University of Zurich, Switzerland)

Supervision of Dissertation Projects

2020 – 2023 Claire Pauley (PhD expected in 03 / 2023)
2017 – 2021 Anna E. Karlsson (PhD expected in 05 / 2021)
2016 – 2020 Verena R. Sommer

Supervision of Master and Bachelor Students

2010 Eva Karduck (Diploma, Humboldt-Universität zu Berlin)
2016 Verena R. Sommer (Master, University of Amsterdam)
2018 Patrizia Maier (Master, Humboldt-Universität zu Berlin)
2018 Hung Nguyen (Bachelor, Humboldt-Universität zu Berlin)
2019 Luzie Mount (Master, Ruhr-Universität Bochum; 2nd Referee)
2019 Nele Westermann (Bachelor, Universität Potsdam)
2020 Fitore Morina (Master, Ruhr-Universität Bochum)
2020 Claire Pauley (Master, Carl von Ossietzky Universität Oldenburg)

Conference Talks & Invited Talks

Sander, M. C. (2020, November). *Lifespan age differences in memory representations.* Brain Mind Institute, École Polytechnique Fédérale de Lausanne, Switzerland. By invitation of Prof. Michael Herzog.

Sander, M. C. (2020, June – cancelled due to Corona pandemic). *Contributions of neural specificity and pattern stability to memory performance in younger and older adults.* International Conference of Cognitive Neuroscience, Helsinki, Finland

Sander, M. C. (2020, April – cancelled due to Corona pandemic). *Contributions of neural specificity and pattern stability to memory performance in younger and older adults.* Cognitive Aging Conference, Atlanta, USA.

Sander, M. C., Sommer, V. R.*, Fandakova, Y., Grandy, T. H., Shing, Y. L., & Werkle-Bergner, M. (2019, June). *Age differences in episodic memory relate to structural integrity of frontal gyrus and oscillatory activity during encoding.* Psychologie und Gehirn, Dresden.

Sander, M. C. (2018, January). *Age-related changes in the formation, consolidation and retrieval of episodic memories.* Ludwig-Maximilians-Universität, Munich. By invitation of Prof. Hermann Müller.

Sander, M. C. (2017, November). *Age-related changes in the formation, consolidation and retrieval of episodic memories.* Berlin School of Mind and Brain.

Sander, M. C., Fandakova, Y., Grandy, T. H., Shing, Y. L., & Werkle-Bergner, M. (2016, September). *Rhythmic neural alpha activity tracks the depth of mnemonic processing.* Kongress der Deutschen Gesellschaft für Psychologie, Leipzig.

Sander, M. C., Fandakova, Y., Grandy, T. H., Shing, Y. L., & Werkle-Bergner, M. (2016, July). *Rhythmic neural alpha activity tracks the depth of mnemonic processing.* International Conference on Memory, Budapest, Hungary.

Sander, M. C., Fandakova, Y., Grandy, T. H., Lindenberger, U., Shing, Y. L., & Werkle-Bergner, M. (2015, June). *Alpha power modulations as a mechanism of memory formation in younger and older adults.* Psychologie und Gehirn, Frankfurt.

Sander, M. C., Fandakova, Y., Grandy, T. H., Lindenberger, U., Shing, Y. L., & Werkle-Bergner, M. (2015, April). A*lpha-power modulations oscillatory mechanisms of memory formation in the alpha frequency.* Aging and Cognition, EUCAS, Dortmund.

Sander, M. C. (2013, September). *Lifespan age differences in working memory: Insights from behavioural and electrophysiological markers of maintenance and selectivity.* Invited talk, Fachgruppentagung Entwicklungspsychologie der DGPs, Saarbrücken.

Sander, M.C., Lindenberger, U., Werkle-Bergner, M. (2012, April). *Lifespan age differences in working memory: Insights from behavioural and electrophysiological markers of maintenance and selectivity.* Tagung experimentell arbeitender Psychologen, Mannheim.

Sander, M.C., Werkle-Bergner, M., Lindenberger, U. (2010, September). *Age differences in working memory capacity: A lifespan dissociation.* Kongress der Deutschen Gesellschaft für Psychologie, Bremen.

Sander, M.C., Werkle-Bergner, M., Lindenberger, U. (2010. March). *Age and individual differences in working memory capacity.* Tagung experimentell arbeitender Psychologen, Saarbrücken.

Organization of Conference Symposia

Sander, M. C. (Organizer and speaker). (2020, June – cancelled due to Corona pandemic). *Age differences in episodic memory – lessons from neural pattern analyses.* Symposium, International Conference of Cognitive Neuroscience, Helsinki, Finland.

Sander, M. C., & Werkle-Bergner, M. (Organizers and speakers). (2016, September). *Cognitive and neural dynamics of memory across the lifespan* Symposium, Kongress der Deutschen Gesellschaft für Psychologie, Leipzig.

Sander, M. C., & Werkle-Bergner, M. (Organizers and speakers). (2016, July). *Good vibes for memory: How rhythmic neural activity shapes when, how, and what we remember*. Symposium, International Conference on Memory, Budapest, Hungary.

Sander, M. C., & Werkle-Bergner, M. (Organizers and speakers). (2015, April). *Neural oscillations and aging: Effects on perception, attention, and memory*. Symposium, Aging and Cognition, EUCAS, Dortmund.

Peer-Reviewed Journal Publications

Google scholar metric (on 12th March 2021)
Citations: 643
h-index: 11

⬩ *denotes joint first-authorship*
** denotes graduate student / predoctoral student / postdoctoral fellow under my supervision*

2021

Kobelt, M.* ⬩, Sommer, V. R.* ⬩, Keresztes, A., Werkle-Bergner, M., & **Sander, M. C.** (2021). Tracking age differences in neural distinctiveness across representational levels. *The Journal of Neuroscience,* 41(15), 3499–3511. https://doi.org/10.1523/JNEUROSCI.2038-20.2021

Sander, M. C., Fandakova, Y., & Werkle-Bergner, M. (2021). Effects of Age Differences in Memory Formation on Neural Mechanisms of Consolidation and Retrieval. *Seminars in Cell and Developmental Biology.* Advance online publication. https://doi.org/10.1016/j.semcdb.2021.02.005

Köhncke, Y., Düzel, S., **Sander, M. C.,** Lindenberger, U., Kühn, S. & Brandmaier, A. M. (2021). Hippocampal and parahippocampal grey matter structural integrity assessed by multimodal imaging is associated with episodic memory in old age. *Cerebral Cortex, 31(3),* 1464–1477. https://doi.org/10.1093/cercor/bhaa287

Sommer, V. R.*, Mount, L., Weigelt, S., Werkle-Bergner, M., & **Sander, M. C.** (2021). Memory specificity is linked to repetition effects in event-related potentials across the lifespan. *Developmental Cognitive Neuroscience, 48,* Article 100926. https://doi.org/10.1016/j.dcn.2021.100926

2020

Dahl, M. J., Mather, M., **Sander, M. C.,** & Werkle-Bergner, M. (2020). Noradrenergic responsiveness supports selective attention across the adult lifespan. *The Journal of Neuroscience*, *40(22),* 4372–4390. https://doi.org/10.1523/JNEUROSCI.0398-19.2020

Fandakova, Y., Werkle-Bergner, M., & **Sander, M. C.** (2020). (Only) time can tell: Age differences in false memory are magnified at longer delays. *Psychology and Aging, 35(4),* 473–483. https://doi.org/10.1037/pag0000465

Karlsson, A. E.*, Wehrspaun, C. C.*, & **Sander, M. C.** (2020). Item recognition and lure discrimination in younger and older adults are supported by alpha/beta desynchronization. *Neuropsychologia, 148,* Article 107658. https://10.1016/j.neuropsychologia.2020.107658

Muehlroth, B. E., **Sander, M. C.**, Fandakova, Y., Grandy, T. H., Rasch, B., Shing, Y. L., & Werkle-Bergner, M. (2020). Memory quality modulates the effect of aging on memory consolidation during sleep: Reduced maintenance but intact gain. *NeuroImage, 209:*116490. https://doi.org/10.1016/j.neuroimage.2019.116490

Sander, M. C., Fandakova, Y., Grandy, T. H., Shing, Y. L., & Werkle-Bergner, M. (2020). Oscillatory mechanisms of successful memory formation in younger and older adults are related to structural integrity. *Cerebral Cortex, 30(6),* 3744–3758. https://doi:10.1093/cercor/bhz339

2019

Muehlroth, B. E., **Sander, M. C.**, Fandakova, Y., Grandy, T. H., Rasch, B., Shing, Y. L., & Werkle-Bergner, M. (2019). Precise slow oscillation-spindle coupling promotes memory consolidation in younger and older adults. *Scientific Reports, 9:* 1940. https://doi.org/10.1038/s41598-018-36557-z

Sommer, V. R., Fandakova, Y., Grandy, T. H., Shing, Y. L., Werkle-Bergner, M., & **Sander, M. C.** (2019). Neural pattern similarity differentially relates to memory performance in younger and older adults. *The Journal of Neuroscience. 39(41),* 8089–8099. https://doi.org/10.1523/JNEUROSCI.0197-19.2019

Wiegand, I., & **Sander, M. C.** (2019). Cue-related processing accounts for age differences in phasic alerting. *Neurobiology of Aging, 79,* 93–100. https://doi.org/10.1016/j.neurobiolaging.2019.03.017

2018

Fandakova, Y., **Sander, M. C.**, Grandy, T. H., Cabeza, R., Werkle-Bergner, M., & Shing, Y. L. (2018). Age differences in false memory: The importance of retrieval monitoring processes and their modulation by memory quality. *Psychology and Aging, 33,* 119–133. https://doi.org/10.1037/pag0000212

2011 – 2015

Karch, J. D., **Sander, M. C.**, von Oertzen, T., Brandmaier, A. M., & Werkle-Bergner, M. (2015). Using within-subject pattern classification to understand lifespan age differences in

oscillatory mechanisms of working memory selection and maintenance. *NeuroImage, 118,* 538–552. https://doi.org/10.1016/j.neuroimage.2015.04.038

Fandakova, Y.♦, **Sander, M. C.** ♦, Werkle-Bergner, M., & Shing, Y. L. (2014). Age differences in short-term memory binding are related to working memory performance across the lifespan. *Psychology and Aging, 29,* 140–149. https://doi.org/10.1037/a0035347

Sander, M. C., Lindenberger, U., & Werkle-Bergner, M. (2012). Lifespan age differences in working memory: A two-component framework. *Neuroscience & Biobehavioral Reviews, 36*, 2007–2033. https://doi.org/10.1016/j.neubiorev.2012.06.004

Sander, M. C., Werkle-Bergner, M., Gerjets, P., Shing, Y. L., & Lindenberger, U. (2012). The two-component model of memory development and its potential implications for educational settings. *Developmental Cognitive Neuroscience, 2*(Supplement 1), S67–S77. https://doi.org/10.1016/j.dcn.2011.11.005

Sander, M. C., Werkle-Bergner, M., & Lindenberger, U. (2012). Amplitude modulations and phase-stability of alpha-oscillations differentially reflect working memory constraints across the lifespan. *NeuroImage, 59*, 646–654. https://doi.org/10.1016/j.neuroimage.2011.06.092

Werkle-Bergner, M., Freunberger, R., **Sander, M. C.**, Lindenberger, U., & Klimesch, W. (2012). Inter-individual performance differences in younger and older adults differentially relate to amplitude modulations and phase stability of oscillations controlling working memory contents. *NeuroImage, 60*, 71–82. https://doi.org/10.1016/j.neuroimage.2011.11.071

Sander, M. C., Werkle-Bergner, M., & Lindenberger, U. (2011). Binding and strategic selection in working memory: A lifespan dissociation. *Psychology and Aging, 26*, 612–624. https://doi.org/10.1037/a0023055

Sander, M. C., Werkle-Bergner, M., & Lindenberger, U. (2011). Contralateral delay activity reveals lifespan age differences in top-down modulation of working memory contents. *Cerebral Cortex, 21*, 2809–2819. https://doi.org/10.1093/cercor/bhr076

Under review

Pauley, C.*, Sommer, V. R.*, Kobelt, M.*, Keresztes, A., Werkle-Bergner, M., & **Sander, M. C.** (2021). Age-related declines in neural selectivity manifest differentially during encoding and recognition. BioRxiv, 441936. https://doi.org/10.1101/2021.04.29.441936

(Unpublished) Monographs

Sander, M. C. (2011). *Lifespan age differences in working memory: Insights from behavioral and electrophysiological markers of capacity and selectivity.* Doctoral dissertation, Humboldt-Universität zu Berlin, Germany.

Sander, M. C. (2007). *Binding deficits in visual processing in older adults: An investigation of gamma band modulation by stimulus size.* Diploma thesis, Humboldt-Universität zu Berlin, Germany.