

Anne Schäfer

Personal Data

Title	Prof. Dr.
First name	Anne
Name	Schäfer
Current position	Director, Max Planck Institute for Biology of Ageing, permanent Professor of Medicine, Departments of Neuroscience and Psychiatry, Icahn School of Medicine at Mount Sinai
Current institution(s)/site(s), country	Dep. Neurobiology of Ageing, Max Planck Institute for Biology of Ageing, Cologne, Germany Dep. of Neuroscience and Psychiatry, Friedman Brain Institute at Icahn School of Medicine at Mount Sinai, New York, NY, USA
ORCID	0000-0002-1051-3710

Qualifications and Career

Stages	Periods and Details
Medical Doctoral Degree	2001–2004, Prof. Michel Nussenzweig, The Rockefeller University, New York, NY, USA, and Prof. Ralf Ignatius, Charité University, Berlin, Germany
Medical School (2. and 3. Staatsexamen)	1999–2004, Free University, Charité University, Berlin, Germany
Medical School (Physikum and 1. Staatsexamen)	1996–1999, Johannes Gutenberg University, Mainz, Germany

Stages of Academic/Professional Career

Honorary Professor	2023–present, University of Cologne, Germany
Director	2021–present, Max Planck Institute for Biology of Ageing, Cologne, Germany
Professor	2019–present, Dep. of Neuroscience and Psychiatry, Friedman Brain Institute at Icahn School of Medicine at Mount Sinai, New York, NY, USA
Associate Professor with Tenure	2018–2019, Co-Director, Center for Glial Biology, Dep. of Neuroscience and Psychiatry, Friedman Brain Institute, Mount Sinai School of Medicine, New York, NY, USA
Assistant Professor	2016–2018, Dep. of Neuroscience and Psychiatry, Friedman Brain Institute, Mount Sinai School of Medicine, New York, NY, USA
Assistant Professor	2011–2016, Dep. of Neuroscience and Psychiatry, Friedman Brain Institute, Mount Sinai School of Medicine, New York, NY, USA
Senior Research Associate	2009–2011, Prof. Paul Greengard, Laboratory of Molecular and Cellular Neuroscience, The Rockefeller University, New York, NY, USA
Research Associate	2007–2009, Prof. Paul Greengard, Laboratory of Molecular and Cellular Neuroscience, The Rockefeller University, New York, NY, USA

Postdoctoral Fellow	2004–2007, Dr. Paul Greengard, Laboratory of Molecular and Cellular Neuroscience, The Rockefeller University, New York, NY, USA
Licence to practice medicine (Approbation)	2004, Free University, Charité University, Berlin, Germany

Activities in the Research System

Institutional Responsibilities (selected)

2023–present	Coordinator, Research Area 2 “Stress Response Mechanisms of Tissue-related and Interorgan Communication in Aging and Age-associated Diseases”, Cologne Excellence Cluster EXC 2030 (DFG) “Cellular Stress Responses in Aging-associated Diseases” (CECAD), Cologne, Germany
2023–present	Executive Board Member, Cologne Excellence Cluster EXC 2030 (DFG) “Cellular Stress Responses in Aging-associated Diseases” (CECAD), Cologne, Germany
2019–present	Executive Committee Member, Neurodegenerative Disease Working Group, New York Genome Center, NY, USA
2019–2024	Mentoring Leader of Neuroscience, Mount Sinai, New York, NY, USA
2017	Co-Director, Center for Glial Biology, Mount Sinai School of Medicine, New York, NY, USA

Service to the Scientific Community (selected)

2025	Co-Organizer, XVII European Meeting “Glial cells in health and disease”, Marseille, France
2025	Co-Organizer, Keystone Symposium “Neuro-Immune Interactions”, Whistler, BC, Canada
2023	Co-Organizer, The Brain Conferences (FENS) “Establishment and maintenance of brain cell states”, Rungstedgaard, Denmark
2019–present	Editor, Glia, PLoS One
2019	Co-Organizer, Manhattan Glia Spring Meeting, Inaugural meeting for the Center of Glial Biology at Mount Sinai and CUNY, New York, NY, USA
2019	Co-Organizer, Keystone Symposium “Epigenetics and human diseases (X5)”, Banff, AB, Canada
2019	Vice Chair of Neuroscience, Mount Sinai School of Medicine, New York, NY, USA
2017–present	External Advisory Board Member, “Simons Initiative for the Developing Brain” (SIDB), University of Edinburgh, Scotland, UK
2017–2018	Consultancy, Genentech
2017	Co-Organizer, Banbury Conference “Post-traumatic neuroinflammation: roles in pathogenesis of long-term consequences and repair”, Banbury, UK
2012–present	F1000 Associate Faculty Member

Scientific Results

Category A

Faust, T.E.* , Feinberg, P.A.* , O’Connor, C., Kawaguchi, R., Chan, A., Strasburger, H., Frosch, M., Boyle, M.A., Masuda, T., Amann, L., Knobloch, K.P., Prinz, M., **Schaefer, A.**, and Schafer, D.P. (2023). A comparative analysis of microglial inducible Cre lines. **Cell Rep** 42:113031. doi: 10.1016/j.celrep.2023.113031. (open access)

Paolicelli, R.C.[#], Sierra, A.[#], Stevens, B.[#], Tremblay, M.E.[#], Aguzzi, A., Ajami, B., Amit, I., Audinat, E., Bechmann, I., Bennett, M., Bennett, F., Bessis, A., Biber, K., Bilbo, S., Blurton-Jones, M., Boddeke, E., Brites, D., Brône, B., Brown, G.C., Butovsky, O., Carson, M.J., Castellano, B., Colonna, M., Cowley, S.A., Cunningham, C., Davalos, D., De Jager, P.L., de Strooper, B., Denes, A., Eggen, B.J.L., Eyo, U., Galea, E., Garel, S., Ginhoux, F., Glass C.K., Gokce, O., Gomez-Nicola, D., González, B., Gordon, S., Graeber, M.B., Greenhalgh A.D., Gressens, P., Greter, M., Gutmann, D.H., Haass, C., Heneka, M.T., Heppner, F.L., Hong, S., Hume, D.A., Jung, S., Kettenmann, H., Kipnis, J., Koyama, R., Lemke, G., Lynch, M., Majewska, A., Malcangio, M., Malm, T., Mancuso, R., Masuda, T., Matteoli, M., McColl, B.W., Miron, V.E., Molofsky, A.V., Monje, M., Mracsko, E., Nadjar, A., Neher, J.J., Neniskyte, U., Neumann, H., Noda, M., Peng, B., Peri, F., Perry, V.H., Popovich, P.G., Pridans, C., Priller, J., Prinz, M., Ragozzino, D., Ransohoff, R.M., Salter, M.W., **Schaefer, A.**, Schafer, D.P., Schwartz, M., Simons, M., Smith, C.J., Streit, W.J., Tay, T.L., Tsai, L.H., Verkhratsky, A., von Bernhardi, R., Wake, H., Wittamer, V., Wolf, S.A., Wu, L.J., and Wyss-Coray, T. (2022). Microglia states and nomenclature: A field at its crossroads. **Neuron** 110:3458–3483. doi: 10.1016/j.neuron.2022.10.020. (open access)

Badimon, A., Strasburger, H. J., Ayata, P., Chen, X., Nair, A., Ikegami, A., Hwang, P., Chan, A. T., Graves, S. M., Uweru, J. O., Ledderose, C., Kutlu, M. G., Wheeler, M. A., Kahan, A., Ishikawa, M., Wang, Y. C., Loh, Y. E., Jiang, J. X., Surmeier, D. J., Robson, S. C., Junger, W. G., Sebra, R., Calipari, E. S., Kenny, P. J., Eyo, U. B., Colonna, M., Quintana, F. J., Wake, H., Gradinaru, V., and **Schaefer, A.** (2020). Negative feedback control of neuronal activity by microglia. **Nature** 586:417–423. doi: 10.1038/s41586-020-2777-8. (open access)

Gunner, G., Cheadle, L., Johnson, K., Ayata, P., Badimon, A., Mondo, E., Nagy, A., Liu, L., Bemiller, S., Kim, K., Lira, S.A., Lamb, B.T., Tapper, A.R., Ransohoff, R.M., Greenberg, M.E., **Schaefer, A.**, and Schafer, D.P. (2019). Sensory lesioning induces microglia-mediated elimination of thalamocortical synapses via neuronal ADAM10 and fractalkine signaling. **Nat Neurosci** 22:1075–1088. doi: 10.1038/s41593-019-0419-y. (open access)

Kana, V.*^{*}, Desland, F.A.*^{*}, Casanova-Acebes, M., Ayata, P., Badimon, A., Nabel, E., Yamamuro, K., Sneeboer, M., Tan, I.L., Flanigan, M.E., Rose, S.A., Chang, C., Leader, A., Le Bourhis, H., Sweet, E.S., Tung, N., Wroblewska, A., Lavin, Y., See, P., Baccarini, A., Ginhoux, F., Chitu, V., Stanley, E.R., Russo, S.J., Yue, Z., Brown, B.D., Joyner, A.L., De Witte, L.D., Morishita, H., **Schaefer, A.**, and Merad, M. (2019). CSF-1 controls cerebellar microglia and is required for motor function and social interaction. **J Exp Med** 216:2265–2281. doi: 10.1084/jem.20182037. (open access)

Ayata, P., Badimon, A., Strasburger, H.J., Duff, M.K., Montgomery, S.E., Loh, Y.E., Ebert, A., Pimenova, A.A., Ramirez, B.R., Chan, A.T., Sullivan, J.M., Purushothaman, I., Scarpa, J.R., Goate, A.M., Busslinger, M., Shen, L., Losic, B., and **Schaefer, A.** (2018). Epigenetic regulation of brain region-specific microglia clearance activity. **Nat Neurosci** 21:1049–1060. doi: 10.1038/s41593-018-0192-3. (open access)

von Schimmelmänn, M., Feinberg, P.A., Sullivan, J.M., Ku, S.M., Badimon, A., Duff, M.K., Wang, Z., Lachmann, A., Dewell, S., Ma'ayan, A., Han, M.H., Tarakhovskiy, A., and **Schaefer, A.** (2016). Polycomb repressive complex 2 (PRC2) silences genes responsible for neurodegeneration. **Nat Neurosci** 19:1321–1330. doi: 10.1038/nn.4360. (open access)

Gao, Z., Lee, P., Stafford, J.M., von Schimmelmänn, M., **Schaefer, A.**, and Reinberg, D. (2014). An AUTS2–Polycomb complex activates gene expression in the CNS. **Nature** 516:349–354. doi: 10.1038/nature13921. (open access)

Maze, I., Chaudhury, D., Dietz, D.M., Von Schimmelmänn, M., Kennedy, P.J., Lobo, M.K., Sullivan, S.E., Miller, M.L., Bagot, R.C., Sun, H., Turecki, G., Neve, R.L., Hurd, Y.L., Shen, L., Han, M.H., **Schaefer, A.**[#], and Nestler, E.J.[#] (2014). G9a influences neuronal subtype specification in striatum. **Nat Neurosci** 17:533–539. doi: 10.1038/nn.3670. (open access)

Tan, C.L., Plotkin, J.L., Venø, M.T., von Schimmelmänn, M., Feinberg, P., Mann, S., Handler, A., Kjems, J., Surmeier, D.J., O'Carroll, D., Greengard, P., and **Schaefer, A.** (2013). MicroRNA-128 governs neuronal excitability and motor behavior in mice. **Science** 342:1254–1258. doi: 10.1126/science.1244193.

* shared first authorship, # shared corresponding authorship

Category B

Patents

Inventors: **Schaefer, A.**, Sullivan, J., Tarakhovsky, A., Schaefer, U., and Zhang, T. (Icahn School of Medicine at Mount Sinai, New York, NY, The Rockefeller University, New York, NY, USA)

No.: WO 2015/066034 (2022)

Title: Methods of controlling and improving brain health

Inventors: **Schaefer, A.**, and Greengard, P. (Icahn School of Medicine at Mount Sinai, New York, NY, The Rockefeller University, New York, NY, USA)

No.: WO 2015/066034 (2015)

Title: Compositions and methods for modulating neuronal excitability and motor behavior

Inventors: Heintz, N., Greengard, P., Heiman, M., **Schaefer, A.**, Doyle, J. and Dougherty, J. (The Rockefeller University, New York, NY, USA)

No.: US 2011/0071049 A1 (2011)

Title: Methods and compositions for translational profiling and molecular phenotyping

Public Outreach Activities (selected)

2022 Talk, Science in the Cologne City Hall Lecture Series, "Immunzellen auf der Spur: Warum das Gehirn altert", Cologne, Germany

Academic Distinctions

2024	Invited Lecture, Brown University Ageing Colloquium, Providence, RI, USA
2024	Segefalk Lecture Award of the Segefalk Foundation (Sweden)
2021	ERC Synergy Grant
2019	Max Planck Sabbatical Award
2018	Inventor of the Year 2018 Award, Mount Sinai School of Medicine, New York, NY, USA
2018	Inaugural NINDS Landis Award for Outstanding Mentorship, NIH, USA
2015	Harold and Golden Lamport Research Award, Mount Sinai School of Medicine, New York, NY, USA
2014	Kavli Frontiers in Science Fellow, The National Academy of Science, USA
2014	CURE Challenge Award, USA
2014	Technology Development Fund Award, Mount Sinai Innovation, USA
2012	NIH Director's New Innovator Award, USA
2012	Seaver Autism Center Research Award, USA
2012	Named a "Chrissy Rossi Investigator" 2011–
2013	NARSAD 2010 Young Investigator Award, USA
2005	Hans-Hench Award 2005, German Society for Immunology, Germany
2001–2003	International Scholarship, German National Academic Foundation (Studienstiftung), Germany