

Craig Garner

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Synaptopathy
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Curriculum vitae

Since 2017	Co-founder and advisor, Navan Technologies, Inc.
Since 2014	Co-founder and coordinator (with U. Dirnagl), SPARK-Berlin
Since 2014	Research group leader, German Center for Neurodegenerative Diseases (DZNE), Berlin
Since 2014	Professor, Neuronal Toxicity/Synaptopathy, Charité, Berlin
2003 – 2014	Director, Stanford Down Syndrome Center, US
2002 – 2014	Professor, Department of Psychiatry and Behavioral Science, Stanford University, US
2002 – 2014	Professor, Department of Neurology, Stanford University (by courtesy), US
2000 – 2002	Professor, Department of Neurobiology, University of Alabama, Birmingham, US
1996 – 2000	Associate professor, Department Neurobiology, University of Alabama, Birmingham, US
1993 – 1996	Scientist, Neurobiology Research Center, University of Alabama, Birmingham, US
1988 – 1993	Research group leader, Center for Molecular Neurobiology (ZMNH), Hamburg
1985 – 1988	Postdoctoral fellow, Friedrich Miescher Institute, Basel, CH
1984	Biochemistry (PhD), Purdue University, West Lafayette, US
1979	Biochemistry (BA), Rutgers University, New Brunswick, US

Research fields

Our group is active in the field of cellular and molecular neuroscience with the following major areas:

- Cellular and molecular mechanisms of synaptic assembly and function
- Cellular mechanism regulating synapse integrity
- Mechanisms triggering synaptic dysfunction due to autoimmune-encephalitis
- ‘Synaptopathy’ in neurological-psychiatric disorders, such as Parkinson’s, Alzheimer’s disease, Down syndrome, and autism

Activities in the scientific community, honors, awards

Since 2017	Co-founder and advisor, Navan Technologies, Inc.
2012 – 2016	Co-founder and advisor, Stealth Bioscience, Inc., US
2012	NeuroVentures/BioX Innovations Award, US
2011	Fulbright Specialist Program Awardee, US
Since 2009	Co-founder and advisor, Balance Therapeutics, Inc., US
2009	Fidelity Foundation Award for Neurodegenerative Research, US
2009	Stanford Neuro-Innovation Award for Translational Research, US
2009	Distinguished Russ Record Lecture, Baylor College of Medicine, US
2007 – 2014	Editorial advisor, Trends in Neuroscience
2007 – 2009	Chair, Stanford Neuroscience Graduate Admission Committee, US
2004	Beach Distinguished Research Award, Purdue University, US
2002 – 2009	Stanford Graduate Admission Committee, US
1993 – 2001	Long-Term Fellowship, Human Frontier Science Program (HFSP)
1989	Gian Tondury Prize for Distinguished Research, CH
1984	A.K. Balls Award for Distinguished Research, Purdue University, US

Selected publications

- Ackermann F, Schink KO, Bruns C, Izsvak Z, Hamra FK, Rosenmund C, Garner CC. Critical role for Piccolo in synaptic vesicle retrieval. *Elife* 2019; 8: e46629
- Hoffmann S, Orlando M, Andrzejak E, Bruns C, Trimbuch T, Rosenmund C, Garner CC, Ackermann F. Light-Activated ROS Production Induces Synaptic Autophagy. *J Neurosci* 2019; 39:2163-2183
- Schob C, Morelini F, Ohana O, Bakoto L, Brandt R, Brockmann M, Cichon N, Hartung H, Opatz IH, Kraus V, Scharf S, Berrmans-Borgmeyer I, Schweizer M, Kuhl D, Voehr M, Voerckel K, Calzada-Wack J, Fuchs H, Gailus-Burner V, Hrabe de Angelis M, Garner CC, Kreinekamp HJ, Kindler S. Cognitive impairment and autistic-like behavior in SAPAP4-deficient mice. *Transl Psychiatry* 2019; 9: 7
- Okerlund ND, Schneider K, Leal-Ortiz S, Montenegro-Venegas C, Kim SA, Garner LC, Gundelfinger ED, Reimer RJ, Garner CC. Bassoon Controls Presynaptic Autophagy through Atg5. *Neuron* 2017; 93:897-913 e897
- Arons MH, Lee K, Thynne CJ, Kim SA, Schob C, Kindler S, Montgomery JM, Garner CC. Shank3 Is Part of a Zinc-Sensitive Signaling System That Regulates Excitatory Synaptic Strength. *J Neurosci* 2016; 36:9124-9134
- Gehr S, Garner CC. Rescuing the Lost in Translation. *Cell* 2016; 165:765-770
- Waites CL, Leal-Ortiz SA, Okerlund N, Dalke H, Fejtova A, Altroock WD, Gundelfinger ED, Garner CC. Bassoon and Piccolo maintain synapse integrity by regulating protein ubiquitination and degradation. *Embo J* 2013; 32:954-969
- Arons MH, Thynne CJ, Grabrucker AM, Li D, Schoen M, Cheyne JE, Boeckers TM, Montgomery JM, Garner CC. Autism-associated mutations in ProSAP2/Shank3 impair synaptic transmission and neurexin-neuroligin-mediated transsynaptic signaling. *J Neurosci* 2012; 32:14966-14978
- Fernandez F, Morishita W, Zuniga E, Nguyen J, Blank M, Malenka RC, Garner CC. Pharmacotherapy for cognitive impairment in a mouse model of Down syndrome. *Nat Neurosci* 2007; 10:411-413
- Zhai RG, Vardinon-Friedman H, Cases-Langhoff C, Becker B, Gundelfinger ED, Ziv NE, Garner CC. Assembling the presynaptic active zone: a characterization of an active one precursor vesicle. *Neuron* 2001; 29:131-143