

## Craig Garner

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Synaptopathy  
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## Curriculum vitae

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	Nancy Pritzker 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
- Mechanism triggering synaptic dysfunction due to autoimmune-encephalitis
- ‘Synaptopathy’ in neurological-psychiatric disorders such as ALS, Parkinson’s, Alzheimer’s disease, Down syndrome, and autism

## Activities in the scientific community, honors, awards

Since 2012	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
Since 2007	Editorial Advisor, Trends in Neuroscience
2007 – 2009	Chair, Stanford Neuroscience 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**

- 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
- Ackermann F, Waites CL, Garner CC. Presynaptic active zones in invertebrates and vertebrates. *EMBO Rep* 2015; 16:923-938
- Waites CL, Leal-Ortiz SA, Okerlund N, Dalke H, Fejtova A, Altmann WD, Gundelfinger ED, Garner CC. Bassoon and Piccolo maintain synapse integrity by regulating protein ubiquitination and degradation. *Embo J* 2013; 32:954-969
- Maas C, Torres VI, Altmann WD, Leal-Ortiz S, Wagh D, Terry-Lorenzo RT, Fejtova A, Gundelfinger ED, Ziv NE, Garner CC. Formation of Golgi-derived active zone precursor vesicles. *J Neurosci* 2012; 32:11095-11108
- 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
- Shapira M, Zhai RG, Dresbach T, Bresler T, Torres VI, Gundelfinger ED, Ziv NE, Garner CC. Unitary assembly of presynaptic active zones from Piccolo-Bassoon transport vesicles. *Neuron* 2003; 38:237-252
- 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