Stanford

Thomas Sudhof

Avram Goldstein Professor in the School of Medicine, Professor of Neurosurgery and, by courtesy, of Neurology and Neurological Sciences and of Psychiatry and Behavioral Sciences

Molecular and Cellular Physiology

Curriculum Vitae available Online

CONTACT INFORMATION

- **Alternate Contact**

  Hyung-in (Karis) Kim - Research Administrative Associate

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Bio

BIO

Thomas Christian Südhof was born in Göttingen, Germany, on Dec. 22 in 1955, obtained his M.D. and doctoral degrees from the University of Göttingen in 1982. He performed his doctoral thesis work at the Max-Planck-Institut für biophysikalische Chemie in Göttingen with Prof. Victor P. Whittaker on the biophysical structure of secretory granules. From 1983-1986, Südhof trained as a postdoctoral fellow with Drs. Mike Brown and Joe Goldstein at UT Southwestern in Dallas, TX, and elucidated the structure, expression and cholesterol-dependent regulation of the LDL receptor gene. Südhof began his independent career as an assistant professor at UT Southwestern in 1986. When Südhof started his laboratory, he decided to switch from cholesterol metabolism to neuroscience, and to pursue a molecular characterization of synaptic transmission. His work initially focused on the mechanism of neurotransmitter release which is the first step in synaptic transmission, and whose molecular basis was completely unknown in 1986. Later on, Südhof's work increasingly turned to the analysis of synapse formation and specification, processes that mediate the initial assembly of synapses, regulate their maintenance and elimination, and determine their properties. Südhof served on the faculty of UT Southwestern in Dallas until 2008, and among others was the founding chair of the Department of Neuroscience at that institution. In 2008, Südhof moved to Stanford, and became the Avram Goldstein Professor in the School of Medicine at Stanford University. In addition, Südhof has been an Investigator of the Howard Hughes Medical Institute since 1986.

ACADEMIC APPOINTMENTS

- Professor, Molecular and Cellular Physiology
- Professor, Neurosurgery
- Professor (By courtesy), Neurology and Neurological Sciences
- Professor (By courtesy), Psychiatry and Behavioral Sciences
- Member, Bio-X
- Member, Institute for Stem Cell Biology and Regenerative Medicine
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- 2020 Sherrington Lecture Award, University of Oxford, UK (2020)
- Doppler Lecture Award and Honorary Doctorate of Philosophy, University of Miskolc (2020)
- Pericles Prize, Pericles International Academy, Italy (2018)
- Elected foreign member, Royal Society of the UK (2017)
- Lasker~DeBakey Basic Medical Research Award, Albert and Mary Lasker Foundation (2013)
- Nobel Prize in Physiology or Medicine, Nobel Foundation (2013)
- Elected member, American Academy of Arts and Sciences (2010)
- Kavli Prize in Neuroscience, Kavli Foundation (2010)
- Elected member, Institute of Medicine (2008)
- Elected member, National Academy of Sciences (2002)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Board Member, The United Nations Secretary-General's Scientific Advisory Board (2023 - present)

LINKS

- Center for Molecular Neuroscience in Health and Disease: https://med.stanford.edu/cmnhd.html
- Sudhof Lab: https://med.stanford.edu/sudhoflab.html

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Human thought and perception, emotions and actions universally depend on signaling between neurons in the brain. This signalling largely happens at synapses, specialized intercellular junctions formed by pre- and postsynaptic neurons. When stimulated, a presynaptic neuron releases chemical messagescalled neurotransmitters that is recognized by a postsynaptic neuron.

For decades, the majority of neuroscientists focused their research on the postsynaptic neuron and its role in learning and memory. But throughout his career, Thomas Südhof has studied the presynaptic neuron. His collective findings have provided much of our current scientific understanding of presynaptic neuron behavior in neurotransmission and synapse formation. His work also has revealed the role of presynaptic neurons in neuropsychiatric illnesses, such as autism or neurodegenerative disorders.

Born in Germany, Südhof obtained a medical degree from the University of Gottingen in 1982. He became familiar with neuroscience when he performed research for his doctoral degree at the Max Planck Institute for Biophysical Chemistry. His thesis dealt with the release of hormones from adrenal cells, a model of neurotransmitter release.

To expand his knowledge of biochemistry and molecular biology, Südhof started to work in 1983 as a postdoctoral fellow at the laboratories of Michael Brown and Joseph Goldstein at the University of Texas Southwestern Medical Center at Dallas. He cloned the gene for the receptor of LDL (the low-density lipoprotein), a particle in the blood that transports cholesterol. Moreover, his work identified the sequences that mediate the regulation of the LDL receptor gene expression by cholesterol.

In 1986, Südhof started his own laboratory at UT Southwestern. He began his inquiry into the presynaptic neuron. At the time, what scientists mainly knew about the presynaptic neuron was that calcium ions stimulate the release of neurotransmitters from membrane-bound sacs called vesicles into the synapse, in a process that takes less than a millisecond.

But much was unknown: What allowed rapid neurotransmitter release? How did release occur at the specific region of the neuronthe synapse? How did repeated activity change the presynaptic neuron? How did the pre- and postsynaptic neurons come together at the synapse?

Südhof decided to try to answer these questions. Among the discoveries in his 20 years of research, Südhof revealed how synaptotagmin proteins sense calcium and mediate neurotransmitter release from presynaptic neurons. He also defined the molecules that organize release in space and time at a synapse, such as RIMs and Munc13's, and identified central components of the presynaptic machinery that mediate the fusion of synaptic vesicles containing neurotransmitters with the presynaptic plasma membrane, the process that ultimately causes neurotransmitter release, and that is controlled by synaptotagmins.

Südhof's work also revealed how pre- and postsynaptic proteins form physical connections, permitting neurotransmission. Specifically, he identified proteins on presynaptic neurons, called neurexins, and proteins on the postsynaptic neuron, called neuroligins, that bind to each other at the synapse. There are many types of neurexins and neuroligins. Their variable pairing shapes the wide variability in the types of synapses in the brain. Mutations in these proteins severely impair synapse function in mice, and contribute to the pathogenesis of disease such as autism and schizophrenia in humans.

At present, Südhof's lab attempts to build on these findings in defining the relationship between specific synaptic proteins and information processing in the brain, with its concordant manifestations in behavior. This large-scale project attempts to provide insight both into the mechanisms undelying synaptic communication, and the processes causing human disease.

Teaching

COURSES

2023-24

- Neuroscience Molecular Core: NEPR 204 (Win)

2022-23

- Neuroscience Molecular Core: NEPR 204 (Aut)
- Science Ethics: More Than Just Experiments: BIOS 239 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Theo Ruffins

Postdoctoral Faculty Sponsor

Xudong Chen, Min Huang, Junzhao Li, Daniel Matus, Hamidreza Shaye, Alberto Siddu, Senmiao Sun, Carmela Vitale, Connie Wong, Xuzhong Yang, Mengyang Zhang, Shaoyuan Zhu

Doctoral Dissertation Advisor (AC)

Margarita Artiukhova, Leyi Huang

Doctoral Dissertation Co-Advisor (AC)

Joey Huang

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Molecular and Cellular Physiology (Phd Program)
- Neurosciences (Phd Program)

Publications

PUBLICATIONS

- **Hippocampal place code plasticity in CA1 requires postsynaptic membrane fusion.** *Neuron*
  Plitt, M. H., Kaganovsky, K., Say, E., Sosa, M., Südhof, T. C., Giocomo, L. M.
  2026
- **Scientific publishing, science integrity, and PubPeer.** *Neuroscience*
  Südhof, T. C.
  2026
- **BAI adhesion-GPCRs perform distinct functions in neural development differentially controlled by RTN4R and C1ql ligands.** *Nature communications*
  Wang, J., Wang, J., Miao, Y., Li, Y., Zhu, S., Zhang, Y., Yousif, A., Huang, M., Wernig, M., Südhof, T. C.
  2025
- **Aggregation shifts amyloid-β peptides from synaptogenic to synaptotoxic.** *The Journal of clinical investigation*
  Siddu, A., Natale, S., Wong, C. H., Shaye, H., Südhof, T. C.
  2025
- **Defined human tri-lineage brain microtissues.** *bioRxiv : the preprint server for biology*
  Uenaka, T., Jung, S., Kumar, I., Vodehnal, K., Rastogi, M., Yoo, Y., Koontz, M., Thome, C., Li, W., Chan, T., Green, E. M., Chesnov, K., Sun, et al
  2025
- **Reply to: False positives in study of memory-related gene expression.** *Nature*
  Sun, W., Liu, Z., Jiang, X., Chen, M. B., Dong, H., Liu, J., Südhof, T. C., Quake, S. R.
  2025; 642 (8066): E4-E6
- **Structure of the complex of C1q-like 3 protein with adhesion-GPCR BAI3.** *Communications biology*
  Miao, Y., Wang, H., Jude, K. M., Wang, J., Wang, J., Wernig, M., Südhof, T. C.
  2025; 8 (1): 693
- **Signaling by latrophilin adhesion-GPCRs in synapse assembly.** *Neuroscience*
  Südhof, T. C.
  2025
- **Reconstitution of synaptic junctions orchestrated by teneurin-latrophilin complexes.** *Science (New York, N.Y.)*
  Zhang, X., Chen, X., Matúš, D., Südhof, T. C.
  2025; 387 (6731): 322-329
- **Distinct mechanisms control the specific synaptic functions of Neuroligin 1 and Neuroligin 2.** *EMBO reports*
  Wang, J., Sudhof, T., Wernig, M.
  2025
- **A brain circuit that cements the memory of socially learnt food preferences** *NATURE*
  Liu, Z., Sudhof, T. C.
  2024
- **A fast and responsive voltage indicator with enhanced sensitivity for unitary synaptic events.** *Neuron*
  Hao, Y. A., Lee, S., Roth, R. H., Natale, S., Gomez, L., Taxidis, J., O'Neill, P. S., Villette, V., Bradley, J., Wang, Z., Jiang, D., Zhang, G., Sheng, et al
  2024

- **Nanometer-resolution tracking of single cargo reveals dynein motor mechanisms.** *Nature chemical biology*
  Peng, C. S., Zhang, Y., Liu, Q., Marti, G. E., Huang, Y. A., Sudhof, T. C., Cui, B., Chu, S.
  2024
- **Astrocytic Neuroligin-3 influences gene expression and social behavior, but is dispensable for synapse number.** *Molecular psychiatry*
  Qin, L., Liu, Z., Guo, S., Han, Y., Wang, X., Ren, W., Chen, J., Zhen, H., Nie, C., Xing, K. K., Chen, T., Südhof, T. C., Sun, et al
  2024
- **The cortical amygdala consolidates a socially transmitted long-term memory.** *Nature*
  Liu, Z., Sun, W., Ng, Y. H., Dong, H., Quake, S. R., Südhof, T. C.
  2024
- **Cartography of teneurin and latrophilin expression reveals spatiotemporal axis heterogeneity in the mouse hippocampus during development.** *PLoS biology*
  Liakath-Ali, K., Refaee, R., Südhof, T. C.
  2024; 22 (5): e3002599
- **Essential Role of Latrophilin-1 Adhesion GPCR Nanoclusters in Inhibitory Synapses.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
  Matúš, D., Lopez, J. M., Sando, R. C., Südhof, T. C.
  2024
- **Neurexin-2 restricts synapse numbers and restrains the presynaptic release probability by an alternative splicing-dependent mechanism (Retraction of Vol 120, art no E2300363120, 2023)** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Lin, P., Chen, L. Y., Zhou, P., Lee, S., Trotter, J. H., Sudhof, T. C.
  2024; 121 (11)
- **Generation of human excitatory forebrain neurons by cooperative binding of proneural NGN2 and homeobox factor EMX1.** *Proceedings of the National Academy of Sciences of the United States of America*
  Ang, C. E., Olmos, V. H., Vodehnal, K., Zhou, B., Lee, Q. Y., Sinha, R., Narayanaswamy, A., Mall, M., Chesnov, K., Dominicus, C. S., Sudhof, T., Wernig, M.
  2024; 121 (11): e2308401121
- **Spatial transcriptomics reveal neuron-astrocyte synergy in long-term memory.** *Nature*
  Sun, W., Liu, Z., Jiang, X., Chen, M. B., Dong, H., Liu, J., Südhof, T. C., Quake, S. R.
  2024
- **Alternative splicing of latrophilin-3 controls synapse formation.** *Nature*
  Wang, S., DeLeon, C., Sun, W., Quake, S. R., Roth, B. L., Südhof, T. C.
  2024
- **The Swiss Brain Health Plan 2023-2033** *CLINICAL AND TRANSLATIONAL NEUROSCIENCE*
  Bassetti, C. L. A., Heldner, M. R., Adorjan, K., Albanese, E., Allali, G., Arnold, M., Begue, I., Bochud, M., Chan, A., do Cuenod, K. Q., Du Pasquier, R., Draganski, B., Eshmawey, et al
  2023; 7 (4)
- **Hippocampal place code plasticity in CA1 requires postsynaptic membrane fusion.** *bioRxiv : the preprint server for biology*
  Plitt, M. H., Kaganovsky, K., Südhof, T. C., Giocomo, L. M.
  2023
- **Neutral lysophosphatidylcholine mediates alpha-synuclein-induced synaptic vesicle clustering.** *Proceedings of the National Academy of Sciences of the United States of America*
  Lai, Y., Zhao, C., Tian, Z., Wang, C., Fan, J., Hu, X., Tu, J., Li, T., Leitz, J., Pfuetzner, R. A., Liu, Z., Zhang, S., Su, et al
  2023; 120 (44): e2310174120
- **Piconewton Forces Mediate GAIN Domain Dissociation of the Latrophilin-3 Adhesion GPCR.** *Nano letters*
  Zhong, B. L., Lee, C. E., Vachharajani, V. T., Bauer, M. S., Südhof, T. C., Dunn, A. R.
  2023
- **Efficient generation of functional neurons from mouse embryonic stem cells via neurogenin-2 expression.** *Nature protocols*

Liu, Y., Wang, J., Südhof, T. C., Wernig, M.
2023

- **Combinatorial expression of neurexins and LAR-type phosphotyrosine phosphatase receptors instructs assembly of a cerebellar circuit.** *Nature communications*
  Sclip, A., Südhof, T. C.
  2023; 14 (1): 4976

- **Neuronal gamma-secretase regulates lipid metabolism, linking cholesterol to synaptic dysfunction in Alzheimer's disease.** *Neuron*
  Essayan-Perez, S., Sudhof, T. C.
  2023

- **Postsynaptic synucleins mediate endocannabinoid signaling.** *Nature neuroscience*
  Albarran, E., Sun, Y., Liu, Y., Raju, K., Dong, A., Li, Y., Wang, S., Sudhof, T. C., Ding, J. B.
  2023

- **Cerebellin-neurexin complexes instructing synapse properties.** *Current opinion in neurobiology*
  Südhof, T. C.
  2023; 81: 102727

- **Astrocytic Neuroligins Are Not Required for Synapse Formation or a Normal Astrocyte Cytoarchitecture.** *bioRxiv : the preprint server for biology*
  Golf, S. R., Trotter, J. H., Nakahara, G., Südhof, T. C.
  2023

- **A combinatorial code of neurexin-3 alternative splicing controls inhibitory synapses via a trans-synaptic dystroglycan signaling loop.** *Nature communications*
  Trotter, J. H., Wang, C. Y., Zhou, P., Nakahara, G., Südhof, T. C.
  2023; 14 (1): 1771

- **Neurexin-2 restricts synapse numbers and restrains the presynaptic release probability by an alternative splicing-dependent mechanism.** *Proceedings of the National Academy of Sciences of the United States of America*
  Lin, P. Y., Chen, L. Y., Zhou, P., Lee, S. J., Trotter, J. H., Südhof, T. C.
  2023; 120 (13): e2300363120

- **Single piconewton forces regulate dissociation of the Latrophilin-3 gain domain**
  Zhong, B. L., Lee, C. E., Vachharajani, V. T., Sudhof, T. C., Dunn, A. R.
  CELL PRESS.2023: 92A

- **Single piconewton forces regulate dissociation of the Latrophilin-3 gain domain.** *Biophysical journal*
  Zhong, B. L., Lee, C. E., Vachharajani, V. T., Sudhof, T. C., Dunn, A. R.
  2023; 122 (3S1): 92a

- **Engineered adhesion molecules drive synapse organization.** *Proceedings of the National Academy of Sciences of the United States of America*
  Hale, W. D., Südhof, T. C., Huganir, R. L.
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- **Neurexin-2: An inhibitory neurexin that restricts excitatory synapse formation in the hippocampus.** *Science advances*
  Lin, P., Chen, L. Y., Jiang, M., Trotter, J. H., Seigneur, E., Sudhof, T. C.
  2023; 9 (1): eadd8856

- **The autism risk factor CHD8 is a chromatin activator in human neurons and functionally dependent on the ERK-MAPK pathway effector ELK1.** *Scientific reports*
  Haddad Derafshi, B., Danko, T., Chanda, S., Batista, P. J., Litzenburger, U., Lee, Q. Y., Ng, Y. H., Sebin, A., Chang, H. Y., Sudhof, T. C., Wernig, M.
  2022; 12 (1): 22425

- **Analyses of the autism-associated neuroligin-3 R451C mutation in human neurons reveal a gain-of-function synaptic mechanism.** *Molecular psychiatry*
  Wang, L., Mirabella, V. R., Dai, R., Su, X., Xu, R., Jadali, A., Bernabucci, M., Singh, I., Chen, Y., Tian, J., Jiang, P., Kwan, K. Y., Pak, et al
  2022

- **Synaptogenic effect of APP-Swedish mutation in familial Alzheimer's disease.** *Science translational medicine*
  Zhou, B., Lu, J. G., Siddu, A., Wernig, M., Sudhof, T. C.
  2022; 14 (667): eabn9380
- **Distinct neurexin-cerebellin complexes control AMPA- and NMDA-receptor responses in a circuit-dependent manner.** *eLife*
  Dai, J., Liakath-Ali, K., Golf, S. R., Sudhof, T. C.
  2022; 11
- **Endocytosis in the axon initial segment maintains neuronal polarity.** *Nature*
  Eichel, K., Uenaka, T., Belapurkar, V., Lu, R., Cheng, S., Pak, J. S., Taylor, C. A., Sudhof, T. C., Malenka, R., Wernig, M., Ozkan, E., Perrais, D., Shen, et al
  2022
- **Neuroligin-3 confines AMPA receptors into nanoclusters, thereby controlling synaptic strength at the calyx of Held synapses.** *Science advances*
  Han, Y., Cao, R., Qin, L., Chen, L. Y., Tang, A. H., Südhof, T. C., Zhang, B.
  2022; 8 (24): eabo4173
- **Induction of synapse formation by de novo neurotransmitter synthesis.** *Nature communications*
  Burlingham, S. R., Wong, N. F., Peterkin, L., Lubow, L., Dos Santos Passos, C., Benner, O., Ghebrial, M., Cast, T. P., Xu-Friedman, M. A., Südhof, T. C., Chanda, S.
  2022; 13 (1): 3060
- **Transsynaptic cerebellin 4-neogenin 1 signaling mediates LTP in the mouse dentate gyrus.** *Proceedings of the National Academy of Sciences of the United States of America*
  Liakath-Ali, K., Polepalli, J. S., Lee, S. J., Cloutier, J. F., Südhof, T. C.
  2022; 119 (20): e2123421119
- **Myt1l haploinsufficiency leads to obesity and multifaceted behavioral alterations in mice.** *Molecular autism*
  Wohr, M., Fong, W. M., Janas, J. A., Mall, M., Thome, C., Vangipuram, M., Meng, L., Sudhof, T. C., Wernig, M.
  2022; 13 (1): 19
- **Teneurins assemble into presynaptic nanoclusters that promote synapse formation via postsynaptic non-teneurin ligands.** *Nature communications*
  Zhang, X., Lin, P., Liakath-Ali, K., Sudhof, T. C.
  2022; 13 (1): 2297
- **Calsyntenin-3, an atypical cadherin, suppresses inhibitory synapses but increases excitatory parallel-fiber synapses in cerebellum.** *eLife*
  Liu, Z., Jiang, M., Liakath-Ali, K., Sclip, A., Ko, J., Zhang, R. S., Sudhof, T. C.
  2022; 11
- **Mapping genomic loci implicates genes and synaptic biology in schizophrenia.** *Nature*
  Trubetskoy, V., Pardinas, A. F., Qi, T., Panagiotaropoulou, G., Awasthi, S., Bigdeli, T. B., Bryois, J., Chen, C., Dennison, C. A., Hall, L. S., Lam, M., Watanabe, K., Frei, et al
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- **Engineered synaptic tools reveal localized cAMP signaling in synapse assembly.** *The Journal of cell biology*
  Sando, R., Ho, M. L., Liu, X., Sudhof, T. C.
  1800; 221 (2)
- **Proteolytic regulation of calcium channels - avoiding controversy.** *Faculty reviews*
  Alberts, B., Colbran, R. J., Dolphin, A. C., Pitt, G. S., Sudhof, T. C.
  2022; 11: 5
- **Treatment of a genetic brain disease by CNS-wide microglia replacement.** *Science translational medicine*
  Shibuya, Y., Kumar, K. K., Mader, M. M., Yoo, Y., Ayala, L. A., Zhou, M., Mohr, M. A., Neumayer, G., Kumar, I., Yamamoto, R., Marcoux, P., Liou, B., Bennett, et al
  2022; 14 (636): eabl9945
- **RIBEYE B-Domain Is Essential for RIBEYE A-Domain Stability and Assembly of Synaptic Ribbons.** *Frontiers in molecular neuroscience*
  Shankhwar, S., Schwarz, K., Katiyar, R., Jung, M., Maxeiner, S., Sudhof, T. C., Schmitz, F.

2022; 15: 838311

- **Molecular self-avoidance in synaptic neurexin complexes.** *Science advances*
  Wang, C. Y., Trotter, J. H., Liakath-Ali, K., Lee, S., Liu, X., Sudhof, T. C.
  1800; 7 (51): eabk1924

- **RTN4/NoGo-receptor binding to BAI adhesion-GPCRs regulates neuronal development.** *Cell*
  Wang, J., Miao, Y., Wicklein, R., Sun, Z., Wang, J., Jude, K. M., Fernandes, R. A., Merrill, S. A., Wernig, M., Garcia, K. C., Sudhof, T. C.
  2021

- **CB1 receptor activation rapidly alters synaptic vesicle numbers in mouse hippocampal synapses.** *Molecular psychiatry*
  Patzke, C., Dai, J., Brockmann, M. M., Sun, Z., Fenske, P., Rosenmund, C., Sudhof, T. C.
  1800; 26 (11): 6103

- **The cell biology of synapse formation** *JOURNAL OF CELL BIOLOGY*
  Sudhof, T. C.
  2021; 220 (7)

- **The molecular logic of synapse formation: From structure to function**
  Sudhof, T. C.
  SPRINGER.2021: 39

- **Cerebellin-2 regulates a serotonergic dorsal raphe circuit that controls compulsive behaviors.** *Molecular psychiatry*
  Seigneur, E., Wang, J., Dai, J., Polepalli, J., Sudhof, T. C.
  2021

- **GluD1 is a signal transduction device disguised as an ionotropic receptor** *NATURE*
  Dai, J., Patzke, C., Liakath-Ali, K., Seigneur, E., Sudhof, T. C.
  2021

- **Efficient generation of dopaminergic induced neuronal cells with midbrain characteristics.** *Stem cell reports*
  Ng, Y. H., Chanda, S., Janas, J. A., Yang, N., Kokubu, Y., Sudhof, T. C., Wernig, M.
  2021

- **Cross-platform validation of neurotransmitter release impairments in schizophrenia patient-derived NRXN1-mutant neurons.** *Proceedings of the National Academy of Sciences of the United States of America*
  Pak, C., Danko, T., Mirabella, V. R., Wang, J., Liu, Y., Vangipuram, M., Grieder, S., Zhang, X., Ward, T., Huang, Y. A., Jin, K., Dexheimer, P., Bardes, et al
  2021; 118 (22)

- **Cannabinoid receptor activation acutely increases synaptic vesicle numbers by activating synapsins in human synapses.** *Molecular psychiatry*
  Patzke, C., Dai, J., Brockmann, M. M., Sun, Z., Fenske, P., Rosenmund, C., Sudhof, T. C.
  2021

- **Neurexins regulate presynaptic GABAB-receptors at central synapses.** *Nature communications*
  Luo, F., Sclip, A., Merrill, S., Sudhof, T. C.
  2021; 12 (1): 2380

- **The Perils of Navigating Activity-Dependent Alternative Splicing of Neurexins** *FRONTIERS IN MOLECULAR NEUROSCIENCE*
  Liakath-Ali, K., Sudhof, T. C.
  2021; 14: 659681

- **Multiple signaling pathways are essential for synapse formation induced by synaptic adhesion molecules.** *Proceedings of the National Academy of Sciences of the United States of America*
  Jiang, X., Sando, R., Sudhof, T. C.
  2021; 118 (3)

- **Latrophilin GPCR signaling mediates synapse formation.** *eLife*
  Sando, R. n., Südhof, T. C.
  2021; 10

- **Bi-allelic variants in TSPOAP1, encoding the active zone protein RIMBP1, cause autosomal recessive dystonia.** *The Journal of clinical investigation*
  Mencacci, N. E., Brockmann, M. M., Dai, J. n., Pajusalu, S. n., Atasu, B. n., Campos, J. n., Pino, G. n., Gonzalez-Latapi, P. n., Patzke, C. n., Schwake, M. n., Tucci, A. n., Pittman, A. n., Simon-Sanchez, et al
  2021
- **Persistent transcriptional programmes are associated with remote memory.** *Nature*
  Chen, M. B., Jiang, X., Quake, S. R., Sudhof, T. C.
  2020
- **SPARCL1 promotes excitatory but not inhibitory synapse formation and function independent of neurexins and neuroligins.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
  Gan, K. J., Sudhof, T. C.
  2020
- **Deorphanizing FAM19A proteins as pan-neurexin ligands with an unusual biosynthetic binding mechanism.** *The Journal of cell biology*
  Khalaj, A. J., Sterky, F. H., Sclip, A., Schwenk, J., Brunger, A. T., Fakler, B., Sudhof, T. C.
  2020; 219 (9)
- **A Trio of Active Zone Proteins Comprised of RIM-BPs, RIMs, and Munc13s Governs Neurotransmitter Release.** *Cell reports*
  Brockmann, M. M., Zarebidaki, F., Camacho, M., Grauel, M. K., Trimbuch, T., Sudhof, T. C., Rosenmund, C.
  2020; 32 (5): 107960
- **Alternative splicing controls teneurin-latrophilin interaction and synapse specificity by a shape-shifting mechanism.** *Nature communications*
  Li, J., Xie, Y., Cornelius, S., Jiang, X., Sando, R., Kordon, S. P., Pan, M., Leon, K., Sudhof, T. C., Zhao, M., Arac, D.
  2020; 11 (1): 2140
- **Homozygous BZRAP1 Mutations Cause Autosomal Recessive Dystonia**
  Mencacci, N., Brockmann, M., Pajusalu, S., Atasu, B., Latapi, P., Schwake, M., Balint, B., Papandreou, A., Pittman, A., Simon-Sanchez, J., Wiethoff, S., Warner, T., Kurian, et al
  LIPPINCOTT WILLIAMS & WILKINS.2020
- **Neurexins cluster Ca2+ channels within the presynaptic active zone** *EMBO JOURNAL*
  Luo, F., Sclip, A., Jiang, M., Sudhof, T. C.
  2020; 39 (7)
- **Pro-neuronal activity of Myod1 due to promiscuous binding to neuronal genes.** *Nature cell biology*
  Lee, Q. Y., Mall, M., Chanda, S., Zhou, B., Sharma, K. S., Schaukowitch, K., Adrian-Segarra, J. M., Grieder, S. D., Kareta, M. S., Wapinski, O. L., Ang, C. E., Li, R., Sudhof, et al
  2020
- **Latrophilin-2 and latrophilin-3 are redundantly essential for parallel-fiber synapse function in cerebellum.** *eLife*
  Zhang, R. S., Liakath-Ali, K., Sudhof, T. C.
  2020; 9
- **Neurexins cluster Ca2+ channels within the presynaptic active zone.** *The EMBO journal*
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