Curriculum Vitae Professor Dr Thomas C. Südhof

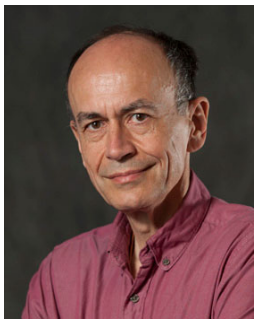

Image: Stanford University

Name: **Thomas C. Südhof**
Date of birth: **22 December 1955**

Research Priorities: Nerve cells, synapses, transmitter release, transport processes in cells, neural and synaptic plasticity.

Thomas C. Südhof is a neuroscientist. He investigates how nerve cells communicate with each other via synapses, specifically those in the brain. Südhof was able to identify and clone proteins involved in the process. In 2013, he was awarded the Nobel Prize in Physiology or Medicine together with the two US-American biochemists James Rothman and Randy Schekman for the discovery of vesicle trafficking.

Academic and Professional Career

since 2021	Member, Institute for Stem Cell Biology and Regenerative Medicine, Stanford University School of Medicine (SUSM), Stanford, USA
since 2015	Director, Center for Molecular Neuroscience in Health and Disease, SUSM, Stanford, USA
2014 - 2019	Guest Researcher, Berlin Institute of Health at Charité (BIH), Berlin, Germany
since 2008	Professor of Molecular and Cellular Physiology, Psychiatry and Neurology, SUSM, Stanford, USA
2008 - 2018	Adjunct Professor of Neuroscience, University of Texas Southwestern (UT Southwestern), Dallas, USA
1997 - 2006	Director, Center for Basic Neuroscience, UT Southwestern, Dallas, USA
1995 - 1998	Director, Max Planck Institute of Experimental Medicine (MPI EM), Göttingen, Germany
1991 - 2007	Professor of Molecular Genetics, Medical Center, UT Southwestern, Dallas, USA

1989 - 1991	Associate Professor, Department of Molecular Genetics, UT Southwestern, Dallas, USA
1987 - 1989	Assistant Professor, Department of Molecular Genetics, UT Southwestern, Dallas, USA
since 1986	Investigator, Howard Hughes Medical Institute, Chevy Chase, USA
1983 - 1985	Postdoctoral Fellow, Department of Molecular Genetics, UT Southwestern, Dallas, USA
1982 - 1983	Postdoctoral Fellow, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany
1982	Doctorate, University of Göttingen, Göttingen, Germany
1981 - 1982	Intern, University Medical Center Göttingen (UMG), Göttingen, Germany
1979	Visiting Student of Medicine, Harvard University, Cambridge, USA
1978 - 1981	Research Associate, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany
1977 - 1982	Degree in Medicine, University of Göttingen, Göttingen, Germany
1975 - 1977	Degree in Medicine, Rhine-Westphalia Technical University of Aachen (RWTH) Aachen, Germany

Functions in Scientific Societies and Committees (selection)

since 2021	Scientific Advisory Board, BridgeBio Inc., Palo Alto, USA
since 2021	Scientific Advisory Board, International Neuroscience Centre “Cajal” (CINC), Madrid, Spain
2020	Chairperson, Muscle and Axon Health Workshop, Spinal Muscular Atrophy (SMA) Foundation, Jackson, USA
since 2019	Scientific Advisory Board, Department of Neuroscience, Institut Pasteur, Paris, France
since 2018	Scientific Advisory Board, Portfolio Advice and Review Committee and Co-Chairperson (together with Richard Scheller), Alector LLC, San Francisco, USA
since 2018	Scientific Advisory Board, Capital Medical University, Beijing, China
since 2018	Scientific Advisory Board, Chinese Academy of Sciences (CAS), China
since 2018	Scientific Advisory Board, Chinese Brain Initiative (North), China
since 2017	Editorial Board, PLOS Biology
since 2017	Scientific Advisory Board, Jupiter Therapeutics, San Francisco, USA

2017 - 2020	Scientific Advisory Board, CytoDel Inc., New York City, USA
2017 - 2019	Scientific Advisory Board, Beihang University, Beijing, China
2017 - 2018	Scientific Advisory Board, Abide Therapeutics, Princeton, USA
since 2016	Chairperson, Scientific Advisory Board, Matters
since 2016	Scientific Advisory Board, Simcere Pharmaceutical, Nanjing, China
since 2016	Non-executive Member and Chairperson, Scientific Committee, Sanofi, Paris, France
since 2014	Scientific Advisory Board, Elysium Inc., Southfield, USA
2014 - 2020	Chairperson, Scientific Advisory Board, Science Matters
2014 - 2018	Scientific Advisory Board, Institute of Molecular and Cell Biology (IMCB), A*Star, Singapore, Singapore
2014 - 2017	Scientific Advisory Board, Singapore National Research Foundation, Singapore, Singapore
2013 - 2017	Stanford Neuroscience Graduate Program Committee, Stanford University, Stanford, USA
2008 - 2010	Review Committee, Neuroscience, Pfizer, New York City, USA
2008	Chairperson, Neurobiology of Disease Gordon Conference, Oxford, UK
2007 - 2008	Chairperson, Department of Neuroscience, UT Southwestern, Dallas, USA
2006 - 2016	Editorial Board, Proceedings of the National Academy of Sciences of the United States of America
2004 - 2009	Editorial Board, Journal of Neuroscience
since 2001	Editorial Board, European Journal of Neuroscience
since 2000	Editorial Board, Neuroscience
2000 - 2001	Co-Editor, European Journal of Cell Biology
since 2000	Editorial Board, Journal of Molecular Neuroscience
1999 - 2001	Chairperson, Graduate Program in Neuroscience, UT Southwestern, Dallas, USA
1997 - 2008	Lloyd B. Sands Distinguished Chair in Neuroscience, UT Southwestern, Dallas, USA
1996	Co-Chairperson (together with Richard Scheller), Gordon Conference on the Cell Biology of the Neuron, Plymouth, USA
since 1995	Editorial Board, Neuron
1995 - 2006	Editorial Board, Journal of Biological Chemistry

1995 - 2008 Distinguished Chair, Neuroscience Research, UT Southwestern, Dallas, USA

Project Coordination, Membership in Collaborative Research Projects

1997 - 1998 Head, Subproject “Function of Neurexins in the Morphogenesis of the Nervous System”, Collaborative Research Centre (SFB) 271, German Research Foundation (DFG)

1996 - 1998 Head, Subproject “Mechanisms of Synaptic Targeting”, SFB 523, DFG

Honours and Awarded Memberships (selection)

2020 Doppler Lecture Award and Honorary Doctorate of Philosophy, University of Miskolc, Miskolc, Hungary

2020 Sherrington Lecture Award, University of Oxford, Oxford, UK

2018 Member, European Academy of Sciences

2018 Pericles Prize, Pericles International Academy

since 2017 Foreign Member, Royal Society, UK

since 2015 Member, German National Academy of Sciences Leopoldina, Germany

2015 Honorary Doctorate, Philosophy, Kaohsiung Medical University, Kaohsiung City, Taiwan

2014 Pioneer Award (together with Solomon Snyder and Julien Mendlewicz), International College of Neuropsychopharmacology (CINP)

2014 La Grande Médaille de la Ville de Paris, Level Vermeil (together with James Rothman and Randy Schekman), Paris, France

2014 Member, Norwegian Academy of Science and Letters (DNVA), Norway

2014 Great Cross of Merit with the Star of the Order of Merit, Federal Republic of Germany

2013 Nobel Prize in Physiology or Medicine (together with James Rothman and Randy Schekman), The Nobel Assembly at Karolinska Institute, Solna, Sweden

2013 Albert Lasker Award for Basic Medical Research, Lasker Foundation, New York City, USA

since 2010 Member, American Academy of Arts and Sciences, USA

2010 - 2020 MERIT Award, National Institute of Mental Health, USA

2010 Kavli Prize in Neuroscience, Kavli Foundation, Los Angeles, USA and Norwegian Academy of Science and Letters (DKNVS), Norway

2010	Albert Einstein Honorary Professorship, CAS, China
2008	Passano Award, Passano Foundation, Baltimore, USA
2008	Sir Bernard Katz Award (together with Reinhard Jahn), Biophysical Society, Rockville, USA
2008	Member, Institute of Medicine, Washington D.C., USA
2004	Bristol-Myers Squibb Award for Distinguished Achievement in Neuroscience Research, Bristol Myers Squibb, New York City, USA
2004	Ulf von Euler Award Lecture, Karolinska Institute, Solna, Sweden
2004	Metlife Foundation Award for Medical Research in Alzheimer's Disease (together with Roberto Malinow), MetLife Foundation, New York City, USA
since 2002	Member, National Academy of Sciences, USA
2000 - 2010	MERIT Award, National Institute of Mental Health, USA
1997	National Academy of Sciences Award in Molecular Biology (together with Richard Scheller), National Academy of Sciences, USA
1997	Roger Eckert Lecture, German Neuroscience Society, Göttingen, Germany
1994	Feldberg Prize, Feldberg Foundation, London, UK
1993	W. Alden Spencer Award (together with Richard Scheller), Columbia University, New York City, USA

Research Priorities

Thomas C. Südhof is a neuroscientist. He investigates how nerve cells communicate with each other via synapses, specifically those in the brain. Südhof was able to identify and clone proteins involved in the process. In 2013, he was awarded the Nobel Prize in Physiology or Medicine together with the two US-American biochemists James Rothman and Randy Schekman for the discovery of vesicle trafficking.

Thomas C. Südhof developed methodological approaches for understanding the connections between nerve cells (synapses). He aims to find out how synapses form in the brain of embryos, how they are specified, and how they change. Synapses and complete neural networks can adapt to processes and optimise themselves by rearranging their structure. This feature, known as neural and synaptic plasticity, is a foundational mechanism for learning processes and memory. Thomas Südhof aims to discover the underlying molecular mechanisms of these processes and to understand how nerve cells form networks in the brain.

In 2013, he was awarded the Nobel Prize in Physiology or Medicine together with the American biochemists James Rothman and Randy Schekman. They were awarded the prize for their

“discoveries of machinery regulating vesicle traffic, a major transport system in our cells”. Thomas Südhof was able to discover fundamental information about vesicle traffic in the cells of the body. Vesicles are little bubbles that store, for example, neurotransmitters such as serotonin or dopamine. They attach to the cell membrane and release their messengers there. The transmitters then trigger a signal in the neighbouring cell. This is how impulses are transported from cell to cell. Thomas Südhof identified multiple proteins involved in this process. He was able to show that, on the molecular level, transmitter release is regulated by calcium ions.

In the last ten years, the Thomas Südhof’s research has become more focused: He is particularly interested in how synapses are established between pre- and postsynaptic nerve cells and how they are given their characteristics from neurons. These fundamental processes form the basis for an improved understanding of how nerve cells are wired to one another and how a neural circuit is set in motion. Neurexins, a group of presynaptic adhesion proteins, play a substantial role here. Mutations in the genes coding for the neurexins are associated with illnesses such as Tourette’s Syndrome and schizophrenia.