

CURRICULUM VITÆ

Name: Lucien T. "Tres" Thompson, Ph.D.

Academic address:

Neuroscience Program Head, Program Founder
Associate Professor: Neuroscience; Cognition & Neuroscience
Principle Investigator, Aging & Memory Research Laboratory
School of Behavioral & Brain Sciences, BSB 14.102
University of Texas at Dallas, 800 W. Campbell Rd.
Richardson, TX 75080-0688

Educational History:

1988-1989	Postdoctoral training	Neurobiology & Cell Biology, Northwestern University Medical School, Chicago, Illinois. Advisor: John F. Disterhoft, Ph.D.
1988	Ph.D. (Jefferson fellow)	Neuroscience, University of Virginia, Charlottesville, Virginia. Dissertation title: " <i>Hippocampal place cells: Silent, stable, and hungry.</i> " Advisor: Phillip J. Best, Ph.D.
1983	M.A. (with honors)	Experimental Psychology, California State University, San Bernardino, California. Thesis title: " <i>Alpha enhancement: The Effect of feedback modality in an EEG biofeedback paradigm.</i> " Advisor: Fred J. Newton, Ph.D.
1981	B.A. (with honors)	Psychology (Biology minor), California State College, San Bernardino, California.

Internet: tres@utdallas.edu; <http://www.utdallas.edu/bbs/agingmemorylab/>

Research interests: As a cellular- and systems-level neuroscientist I aim to understand the neural mechanisms of learning and memory. I joined UTD's faculty in Fall 1997 as an associate professor in Neuroscience, tenured in Spring 1999. I have produced 13 new Ph.D.s while here at UTD, all well placed scientifically (5 are now tenured faculty), and founded our NSC program, grown from its original two faculty to its present well-regarded international stature; I served the Dept. of Neuroscience in its first year as co-chair. My Ph.D. is from one of the first accredited American graduate programs in Neuroscience, at the University of Virginia. My research focuses on regulation of Ca²⁺-dependent K⁺ channels in long-term memory acquisition and consolidation. These K⁺ channels play a necessary role in neural plasticity across the lifespan. They interact with excitatory glutamate receptors to shape Hebbian plasticity, and bridge temporal gaps in key forms of metaplasticity critical for memory consolidation. My work shows that regulated plasticity of these K⁺ channels is highly conserved: across different species, different tasks, across brain regions, and in multiple disease states, i.e. they are a final common pathway in acquisition and consolidation of memory. My research incorporates chronic *in vivo* and acute *in vitro* neurophysiological recordings, coupled with molecular and neurochemical assays, and is applied across a wide range of behavioral assays. My current work focuses on hippocampal dysfunction in humans, which begins in non-clinical populations shortly after age 30, much earlier in the lifespan than ever previously suspected. We are developing a trace eyeblink conditioning model as a biomarker of this dysfunction for potential clinical use. My published peer-reviewed papers in high-impact journals have been cited over 4300 times, with steadily rising metrics: my H-index is 27, i-10 index 39, and RG score 31.8.

PROFESSIONAL APPOINTMENTS:

1997-2014; 2019-date	Undergraduate Neuroscience Program Head, BBS, UT Dallas.
2020-2021	Co-chair (80% responsibility) w. Dr. Ted Price of new Dept. of Neuroscience.
2016-date	Affiliated faculty, Department of Biological Sciences, UT Dallas.
2000-date	Honors Program Head, Neuroscience, School of Behavioral & Brain Sciences, University of Texas at Dallas, Richardson, Texas.
2000-2014	Program Head/Founder, Neuroscience, School of Behavioral & Brain Sciences, University of Texas at Dallas, Richardson, Texas.
1997-date	Associate Professor, Cognition & Neuroscience, School of Human Development, then School of Behavioral & Brain Sciences, University of Texas at Dallas, Richardson, Texas.
1992-1997	Research Assistant Professor, Department of Cell & Molecular Biology, Northwestern University Medical School, Chicago, Illinois.
1989-1991	Research Associate, Department of Cell, Molecular & Structural Biology, Northwestern University Medical School, Chicago, Illinois.
1988-1989	Postdoctoral Fellow, Department of Cell Biology & Anatomy, Northwestern University Medical School, Chicago, Illinois.
1986-1988	Teaching Fellow, Department of Neuroscience, University of Virginia, Charlottesville, Virginia.
1983-1986	Presidential Fellow, Neuroscience Program, University of Virginia, Charlottesville, Virginia.
1983-1985	Teaching Fellow, Department of Psychology, University of Virginia, Charlottesville, Virginia.
1981-1983	Statistical Fellow, Office of Institutional Research, California State University, San Bernardino, California.

PROFESSIONAL RECOGNITIONS AND HONORS:

2020	Outstanding Advisor, Neuroscience Students Association, UT Dallas.
2016	Joseph R. Wood Health Professions Advisory Council Award, UT Dallas.
2014	Aage R. Møller Outstanding Teaching Award, School of Behavioral & Brain Sciences.
2013- date	Faculty Advisor, National Society of Collegiate Scholars, UT Dallas.
2012	Nominee, Regent's Outstanding Teaching Award, UT Dallas and UT System.
2010	Senior's Choice, Teaching Excellence Award, School of Behavioral & Brain Sciences.
2010	Nominee, Chancellor's Teaching Excellence Award, UT System.
2000-date	Faculty Advisor, Neuroscience Student Association, UT Dallas.
1992	National Science Foundation and European Science Foundation joint travel award.
1984-1986	President, Neuroscience Journal Club, University of Virginia.
1983-1988	Jefferson Presidential Fellow, University of Virginia. Academic Excellence scholarship.
1983	Student Research Fellowship, Biofeedback Society of America.
1981	Presidential Fellow, California State College. Academic Excellence award.
1980	Elected member of <i>Psi Chi</i> , Honor Society for Psychology.

PROFESSIONAL MEMBERSHIPS:

2013-date	National Society of Collegiate Scholars.
1998-date	Alzheimer's Association Medical & Scientific Advisory Council.
1984-date	Society for Neuroscience.
1992-1999	American Psychological Society.
1981-1986	American Psychological Association.
1981-1984	Biofeedback Society of America.
1980-1984	<i>Psi Chi</i> .

EDITORIAL BOARD MEMBER:

2014-date	<i>Frontiers in Systems Neuroscience</i> .
2013-2021	<i>AIMS Neuroscience</i> , Associate Editor: Cellular & Behavioral Neuroscience.
2001-2013	<i>Behavioral Neuroscience</i> .

ACHIEVEMENTS IN ORIGINAL INVESTIGATION

BOOKS EDITED:

1. Greer, T.L. & **Thompson, L.T.**, co-editors. (2017). Eyeblink classical conditioning in psychiatric conditions: State of the field and future directions. *Frontiers in Psychiatry: Systems Biology*, eBook.

PEER REVIEWED JOURNAL PUBLICATIONS (reverse chronological listing):

1. dos Santos, N.L., Lennert, M.E., Castillo, Z.W., Mody, P.H., **Thompson, L.T.** & Burton, M.L. (2022). Age and sex drive differential behavioral and neuroimmune phenotypes during postoperative pain. *Neurobiology of Aging*, **7**, 9-18.
2. Tandon, N.R. & **Thompson, L.T.** (2022). Intranasal insulin reverses spatial memory deficits in aging rats and dose-dependently alters hippocampal regulation of intrinsic excitability. *Neurobiology of Aging*, revisions re-submitted.
3. Kapolowicz, M.R. & **Thompson, L.T.** (2021). Plasticity in limbic regions at early time points in experimental models of tinnitus. *Frontiers in Systems Neuroscience e-Book, #4 of Editor's Top 10 Picks for 2021*. URL: <https://www.frontiersin.org/research-topics/22542/frontiers-in-systems-neuroscience---editors-pick-2021#articles>
4. Kapolowicz, M.R. & **Thompson, L.T.** (2020). Plasticity in limbic regions at early time points in experimental models of tinnitus. *Frontiers in Systems Neuroscience*. doi: 10.3389/fnsys.2019.00088.
5. Greer, T.L. & **Thompson, L.T.** (2017). Preface: Eyeblink classical conditioning in psychiatric conditions: State of the field and future directions. *Frontiers in Psychiatry: Systems Biology*, 2-3.
6. Greer, T.L. & **Thompson, L.T.** (2017). Editorial: Eyeblink classical conditioning in psychiatric and neurological disorders: Novel uses for a classical paradigm. *Frontiers in Psychiatry*: <https://doi.org/10.3389/fpsy.2017.00048>.
7. Kapolowicz, M.R. & **Thompson, L.T.** (2016). Acute high-intensity noise induces rapid Arc protein expression but fails to rapidly change GAD expression in amygdala and hippocampus of rats: Effects of treatment with D-cycloserine. *Hearing Research*, **342**, 69-79.
8. Underwood, E.L. & **Thompson, L.T.** (2016). High-fat diet impairs spatial memory and hippocampal intrinsic excitability, and sex-dependently alters circulating insulin and hippocampal insulin-sensitivity. *Biology of Sex Differences*, **7**, 9-21.
9. Underwood, E.L. & **Thompson, L.T.** (2015). A high-fat diet causes impairment in hippocampal memory and sex-dependent alterations in peripheral metabolism. *Neural Plasticity*, **501**, 161985.
10. Lovitz, E.S. & **Thompson, L.T.** (2015). Memory-enhancing intra-basolateral amygdala clenbuterol infusion reduces post-burst afterhyperpolarizations in hippocampal CA1 pyramidal neurons following inhibitory avoidance learning. *Neurobiology of Learning & Memory*, **119**, 34-41.

11. Greer, T.L. & **Thompson, L.T.** (2015). Research Topic: Eyeblink classical conditioning in psychiatric disorders: Novel uses for a classical paradigm. *Frontiers in Psychiatry*, <http://journal.frontiersin.org/researchtopic/3420/eyeblink-classical-conditioning-in-psychiatric-conditions-novel-uses-for-a-classic-paradigm#overview>.
12. Donzis, E.J. & **Thompson, L.T.** (2014). D-cycloserine enhances both intrinsic excitability of CA1 hippocampal neurons and expression of activity-regulated cytoskeletal (Arc) protein. *Neuroscience Letters*, **571**, 50-54.
13. Donzis, E.J., Rennaker, R.L. & **Thompson, L.T.** (2013). Fear conditioning alters neuron-specific hippocampal place field stability via the basolateral amygdala. *Brain Research*, **1525**, 16-25.
14. Willmott, L.A. & **Thompson, L.T.** (2013). Sex- and dose-dependent effects of post-trial calcium channel blockade by magnesium chloride on memory for inhibitory avoidance conditioning. *Behavioural Brain Research*, **257**, 49-53.
15. Farmer, G.E. & **Thompson, L.T.** (2012). Learning-dependent plasticity of hippocampal CA1 pyramidal neuron postburst afterhyperpolarizations and increased excitability after inhibitory avoidance learning depend upon basolateral amygdala inputs. *Hippocampus*, **22**, 1703-1719.
16. Goble, T.J., Møller, A.R. & **Thompson, L.T.** (2009). Acute high-intensity sound exposure alters responses of place cells in hippocampus. *Hearing Research*, **253**, 52-59.
17. Greer, T.L., Trivedi, M.H. & **Thompson, L.T.** (2005) Impaired delay and trace eyeblink conditioning performance in major depressive disorder. *Journal of Affective Disorders*, **86**, 235-245.
18. Møller, A.R. & **Thompson, L.T.** (2003). Central neuronal plasticity in tinnitus: Functional assessments in the inferior colliculus and the hippocampus. *Tinnitus Today*, **28**, 20-21.
19. Moyer, J.R., **Thompson, L.T.**, Power, J.M., & Disterhoft, J.F. (2000). Increased excitability of aged rabbit CA1 neurons after trace eyeblink conditioning. *Journal of Neuroscience*, **20**, 5476-5482.
20. Oh, M.M., Power, J.M., **Thompson, L.T.**, & Disterhoft, J.F. (2000). Apamin increases the excitability of rabbit CA1 hippocampal pyramidal neurons. *Neuroscience Research Communications*, **27**, 135-142.
21. Oh, M.M., Power, J.M., **Thompson, L.T.**, Moriearty, P.L., & Disterhoft, J.F. (1999). Metrifonate increases neuronal excitability in CA1 pyramidal neurons from both young and aging rabbit hippocampus. *Journal of Neuroscience*, **19**, 1814-1823.
22. **Thompson, L.T.** & Disterhoft, J.F. (1997). Age- and dose-dependent facilitation of associative eyeblink conditioning by D-cycloserine. *Behavioral Neuroscience*, **111**, 1303-1312.
23. **Thompson, L.T.** & Disterhoft, J.F. (1997). The NMDA receptor in associative eyeblink conditioning: Both MK-801 and phencyclidine (PCP) produce task- and dose-dependent impairments. *Journal of Pharmacology and Experimental Therapeutics*, **281**, 928-940.
24. Carrillo, M.C., **Thompson, L.T.**, Gabrieli, J.D.E., & Disterhoft, J.F. (1997). Variation of the intertrial interval in human classical conditioning. *Psychobiology*, **25**, 152-157.

25. Disterhoft, J.F., Kronforst-Collins, M.A., McEchron, M.D., Moyer, J.R., Power, J.M. & **Thompson, L.T.** (1997). Mechanisms of associative learning in young and ageing hippocampus. *Journal of Physiology* (London), 501, S6-S7.
26. Power, J.M., **Thompson, L.T.**, Moyer, J.R., Jr., & Disterhoft, J.F. (1997). Enhanced synaptic transmission in CA1 hippocampus after eyeblink conditioning. *Journal of Neurophysiology*, **78**, 1184-1187.
27. Kronforst-Collins, M.A., Moriearty, P.L., Ralph, M., Becker, R.E., Schmidt, B., **Thompson, L.T.**, & Disterhoft, J.F. (1997). Chronic metrifonate treatment enhances acquisition of eyeblink conditioning in aging rabbits. *Pharmacology, Biochemistry, and Behavior*, **55**, 445-451.
28. **Thompson, L.T.**, Moyer, J.R., Jr., & Disterhoft, J.F. (1996). Trace eyeblink conditioning demonstrates heterogeneity of learning ability both between and within age groups. *Neurobiology of Aging*, **17**, 619-629.
29. **Thompson, L.T.**, Moyer, J.R., Jr., & Disterhoft, J.F. (1996). Transient changes in excitability of rabbit CA3 neurons with a time-course appropriate to support memory consolidation. *Journal of Neurophysiology*, **76**, 1836-1849.
30. Moyer, J.R., Jr., **Thompson, L.T.**, & Disterhoft, J.F. (1996). Trace eyeblink conditioning increases CA1 excitability in a transient and learning-specific manner. *Journal of Neuroscience*, **16**, 5536-5546.
31. deJong, G.I., Naber, P.A., van der Zee, E.A., **Thompson, L.T.**, Disterhoft, J.F., & Luiten, P.G.M. (1996). Age-related loss of calcium binding proteins in the rabbit hippocampus. *Neurobiology of Aging*, **17**, 459-465.
32. Disterhoft, J.F., **Thompson, L.T.**, Moyer, J.R., Jr., & Mogul, D. (1996). Calcium-dependent afterhyperpolarization and learning in young and aging hippocampus. *Life Sciences*, **59**, 413-420.
33. Disterhoft, J.F., **Thompson, L.T.**, Weiss, C., Moyer, J.R., Jr., van der Zee, E., Carrillo, M.C., Kronforst-Collins, M., & Power, J. (1995). The calcium hypothesis for Alzheimer's disease: Insights from animal and human studies. *Neuroscience Research Communications*, **17**, 121-131.
34. Disterhoft, J.F., Moyer, J.R., **Thompson, L.T.** & Carillo, M.C. (1995). Calcium hypothesis of neuronal protection by calcium antagonists. *Journal of Cerebral Blood Flow & Metabolism*, **15**, S55.
35. Disterhoft, J.F., Moyer, J.R., Jr., & **Thompson, L.T.** (1994). The calcium rationale in aging and Alzheimer's disease: Evidence from an animal model of normal aging. *Annals of the New York Academy of Sciences*, **747**, 382-406.
36. Akase, E., **Thompson, L.T.**, & Disterhoft, J.F. (1994). A system for quantitative analysis of associative learning: 2. Real-time software for MS-DOS microcomputers. *Journal of Neuroscience Methods*, **54**, 119-130.
37. **Thompson, L.T.**, Akase, E., Moyer, J.R., & Disterhoft, J.F. (1994). A system for quantitative analysis of associative learning: 1. Hardware interfaces with cross-species applications. *Journal of Neuroscience Methods*, **54**, 109-117.

38. Disterhoft, J.F., **Thompson, L.T.**, Moyer, J.R., & Kowalska, M. (1993). Nimodipine facilitates learning and increases excitability of hippocampal neurons in aging rabbits. *Drugs in Development*, *2*, 395-405.
39. Disterhoft, J.F., Moyer, J.R., **Thompson, L.T.**, & Kowalska, M. (1993). Functional aspects of calcium-channel modulation. *Clinical Neuropharmacology*, *16*, S12-S24.
40. **Thompson, L.T.**, Moskal, J.R., & Disterhoft, J.F. (1992). Hippocampus-dependent learning facilitated by a monoclonal antibody or D-cycloserine. *Nature*, *359*, 638-641.
41. Moyer, J.R., Jr., **Thompson, L.T.**, Black, J.P., & Disterhoft, J.F. (1992). Nimodipine increases excitability of rabbit CA1 pyramidal neurons in an age- and concentration-dependent manner. *Journal of Neurophysiology*, *68*, 2100-2109.
42. **Thompson, L.T.**, Moyer, J.R., Jr., & Disterhoft, J.F. (1992). Cellular mechanisms for nimodipine's reduction of aging-related learning deficits. *Advances in Behavioral Biology*, *40*, 241-256.
43. Disterhoft, J.F., Deyo, R.A. & **Thompson, L.T.** (1992). Nimodipine improves learning and sensorimotor behaviors in aging mammals. *Advances in Behavioral Biology*, *40*, 227-240.
44. Disterhoft, J.F., Black, J., Moyer, J.R., Jr. & **Thompson, L.T.** (1991). Calcium-mediated changes in hippocampal neurons and learning. *Brain Research Reviews*, *16*, 193-220.
45. **Thompson, L.T.**, Deyo, R.A., & Disterhoft, J.F. (1990). Nimodipine enhances spontaneous firing of hippocampal pyramidal cells in aging rabbits at a dose that facilitates associative learning. *Brain Research*, *535*, 119-130.
46. **Thompson, L.T.** & Best, P.J. (1990). Long-term stability of the place field activity of single-units recorded from the dorsal hippocampus of freely-behaving rats. *Brain Research*, *509*, 299-308.
47. Best, P.J. & **Thompson, L.T.** (1989). Persistence, reticence, and opportunism of place field activity in hippocampal neurons. *Psychobiology*, *17*, 230-235.
48. Disterhoft, J.F., Deyo, R.A., Moyer, J.R., Jr., Straube, K.T. & **Thompson, L.T.** (1989). Calcium blockers and memory in the aging brain. *Cardiovascular Reviews & Reports*, *10*, 22-29.
49. **Thompson, L.T.** & Best, P.J. (1989). Place cells and silent cells in the hippocampus of freely-behaving rats. *Journal of Neuroscience*, *9*, 2382-2390.
50. **Thompson, L.T.** & Best, P.J. (1985). The significance of place cues in taste conditioning. *Appetite*, *6*, 301.
51. Ellins, S.R., **Thompson, L.T.**, & Swanson, W. (1983). Effects of novelty and familiarity on illness-induced aversions to food and place cues in coyotes (*Canis latrans*). *Journal of Comparative Psychology*, *97*, 302-309.

CHAPTERS PUBLISHED IN EDITED BOOKS (reverse chronological order):

1. Disterhoft, J.F., Kronforst, M.A., Moyer, J.R., Jr., **Thompson, L.T.**, van der Zee, E., & Weiss, C. (1996). Hippocampal neuron changes during trace eyeblink conditioning in the rabbit. In J.R. Bloedel, T.J. Ebner, & S.P. Wide (Eds.), *The acquisition of motor behavior in vertebrates*. Cambridge, MA: MIT Press, pp. 143-174.
2. Disterhoft, J.F., **Thompson, L.T.**, & Moyer, J.R., Jr. (1994). Cellular mechanisms of associative learning in the hippocampus. In J. Delacour (Ed.), *The memory systems in the brain*. London: World Scientific Publishing, pp. 431-492.
3. Disterhoft, J.F., Moyer, J.R., Jr., **Thompson, L.T.**, & Kowalska, M. (1993). Nimodipine and learning in aging rabbits. In J. Traber (Ed.), *Dihydropyridines: Progress in pharmacology and therapy*. Berlin: Springer-Verlag, pp. 81-97.
4. Disterhoft, J.F., Black, J., Deyo, R.A., Straube, K., & **Thompson, L.T.** (1989). Associative learning in aging rabbits is facilitated by nimodipine. In W.H. Gispen & J. Traber (Eds.), *Nimodipine and central nervous function*. Stuttgart: Schattauer, pp. 209-225.

UNPUBLISHED THESES:

1. **Thompson, L.T.** (1983). *Alpha enhancement: The effect of feedback modality in an EEG biofeedback paradigm*. Presented as part of the requirements for an M.A. in Experimental Psychology, California State University, San Bernardino, California, under the guidance of Fred G. Newton, Ph.D.
2. **Thompson, L.T.** (1988). *Hippocampal place cells: Silent, stable, and hungry*. Presented as part of the requirements for a Ph.D. in Neuroscience, University of Virginia, Charlottesville, Virginia, under the guidance of Phillip J. Best, Ph.D., Neuroscience Program Head.

NUMBER OF DOCTORAL STUDENTS who have completed their PhDs in Cognition & Neuroscience at UT Dallas in my laboratory: 13

CURRENT DOCTORAL STUDENTS in my lab: 2

NUMBER OF MASTERS (ACN, BIO) STUDENTS supervised at UT Dallas: 93

CURRENT MASTERS STUDENTS in my lab: 0

CURRENT UNDERGRADUATE RESEARCH ASSISTANTS in my lab: 2

REFEREED CONFERENCE ABSTRACTS:

1. **Thompson, L.T.** (2022). Trace eyeblink conditioning shows early signs of hippocampal dysfunction decades earlier than other signs of memory loss. *Internat. Behav. Neurosci. Soc.*, Glasgow, Scotland (virtual).
2. **Thompson, L.T.** (2021). Trace eyeblink conditioning in animal models and in humans: A sensitive early-biomarker of hippocampal dysfunction and failing memory with implications for dementia. *Internat. Behav. Neurosci. Soc.*, Puerto Vallarta, Mexico (virtual).
3. **Thompson, L.T.,** West, R.M. & Lea, P. (2020). Impairments in trace eyeblink conditioning occur early in the lifespan: A behavioral biomarker for hippocampal dysfunction with implications for dementias. *Internat. Behav. Neurosci. Soc.*, Glasgow, Scotland (virtual).
4. West, R.M., Lea, P. & **Thompson, L.T.** (2019). Age-associated impairments in trace eyeblink conditioning occur earlier in the lifespan than previously suspected. *Soc. Neurosci. Abstr.*, **49**, Chicago, IL.
5. Tandon, N.R. & **Thompson, L.T.** (2019). Intranasal insulin enhances spatial memory and intrinsic excitability of aging hippocampal neurons by altering expression of Ca²⁺-dependent K⁺ channels and of calcium-sensors for calcium-dependent K⁺ channels. *Soc. Neurosci. Abstr.*, **49**, Chicago, IL.
6. Ahmed, N., Siraj, S., dos Santos, N.L. & **Thompson, L.T.** (2019). Analyzing the sex-dependent effects of intranasal insulin on memory impairment secondary to high-fat diet. *2019 Research Appreciation Conference*, Univ. of North Texas Medical Center, Ft. Worth, TX.
7. **Thompson, L.T.** (2018). Aging, drugs, diet, sex, fear, space and memory: Convergence on post-burst AHPs in CA1. UC Irvine International Conference on Learning & Memory, Huntington Beach, CA.
8. Dos Santos, N.L., **Thompson, L.T.**, & Burton, M.D. (2018). Sex-dependent age-differences in response to an acute model of pain. *Soc. Neurosci. Abstr.*, **48**, San Diego, CA.
9. Nguyen-Lee, P.J., Hacker, C. & **Thompson, L.T.** (2018). D-cycloserine enhances location specificity of CA1 place cells by enhancing signal-to-noise ratios and transiently increasing theta cell activity. *Soc. Neurosci. Abstr.*, **48**, San Diego, CA.
10. Tandon, N.R. & **Thompson, L.T.** (2017). High-fat diet impairs hippocampal intrinsic excitability and memory and sex-dependently alters insulin signaling in hippocampus. *Soc. Neurosci. Abstr.*, **47**, Washington, DC.
11. dos Santos, N.L. & **Thompson, L.T.** (2017). Assessing sex-differences in the effects of intranasal insulin on spatial memory impairments of young LE rats on a chronic high-fat diet. *Soc. Neurosci. Abstr.*, **47**, Washington, DC.
12. Wilhelm, R.M. & **Thompson, L.T.** (2017). Altered Arc and hippocalcin expression reflect activity-dependent and intrinsic excitability mechanisms in hippocampal-dependent spatial memory in an aging model. *Soc. Neurosci. Abstr.*, **47**, Washington, DC.
13. dos Santos, N.L., Tandon, N.R. & **Thompson, L.T.** (2017). High fat diet impairs memory and sex-

dependently alters hippocampal intrinsic excitability and insulin signaling in hippocampus. Annual Meeting of Indian Academy of Neurosciences, 35, Ravenshaw University, Cuttack, India.

14. **Thompson, L.T.**, Tandon, N.R. & Underwood, E.L. (2017). Impaired memory and hippocampal function on a high-fat diet: Sex-differences in hormonal regulation, metabolism, neuronal excitability, and insulin-sensitivity. *International Behavioral Neuroscience Society*, Hiroshima, Japan.
15. Tandon, N.R. & **Thompson, L.T.** (2017). High fat diet impairs hippocampal function and memory: Sex differences in energy metabolism and insulin signaling. *Sex Differences Across the Lifespan: Organization for the Study of Sex Differences*, Montreal, Quebec, Canada.
16. Burton, M.D., Asiedu, M.N., Underwood, E.L., Szabo-Pardi, T., Astarbadi, M., Syed, U., Mejia, G.L., Barragan-Iglesias, P., Jacobs, B.A., Burgos-Vega, C., Megat, S., Moy, J.K., Dussor, G.O., **Thompson, L.T.** & Price, T.J. (2017). Delayed onset of neuropathic pain in the aged after peripheral nerve injury. *6th International Conference on Neuropathic Pain*, Gothenburg, Sweden.
17. Wilhelm, R.M., Tandon, N.R. & **Thompson, L.T.** (2017). Hippocampal substrates of age-dependent impairment in spontaneous alternation behavior. *Dallas Aging & Cognition Conference*, Dallas, TX.
18. **Thompson, L.T.** & Underwood, E.L. (2016). Sex differences in impaired hippocampal function and memory on a high-fat diet: Peripheral metabolism, neuronal intrinsic excitability, and insulin-sensitivity. *Joint Meeting of American Physiological Soc. & The Physiological Soc.*, Dublin, Ireland.
19. Wilhelm, R.M., Tandon, N.R. & **Thompson, L.T.** (2016). Age-dependent decrease in spontaneous alternation behaviors: Potential hippocampal substrates. *Soc. Neurosci. Abstr.*, **46**, San Diego, CA.
20. Underwood, E.L. & **Thompson, L.T.** (2015). High-fat diet impairs spatial memory after short-term but not long-term exposure: Sex-differences, receptor expression, hippocampal plasticity, and peripheral metabolism. *Soc. Neurosci. Abstr.*, **45**, Chicago, IL.
21. Underwood, E.L. & **Thompson, L.T.** (2015). High-fat diet causes impairment in spatial memory and sex-dependent alterations in peripheral metabolism. *JAMA*, Chicago, IL.
22. Underwood, E.L. & **Thompson, L.T.** (2015). High-fat diet induces sex-dependent alterations in spatial memory, hippocampal CA1 excitability and metabolic signaling in the Long-Evans rat. *UT Austin Conference on Learning & Memory*, Austin, TX.
23. Kapolowicz, M.R., Assmann, P. & **Thompson, L.T.** (2015). Tinnitus-inducing noise trauma and D-cycloserine alter Arc protein expression in amygdalo-hippocampal circuitry. *Assoc. Res. Otolaryngology (ARO) Mid-Winter Meeting*, Baltimore, MD.
24. Underwood, E.L. & **Thompson, L.T.** (2014). High energy diet alters intrinsic excitability of hippocampal CA1 neurons in a pre-diabetic model: Sex-differences. *Soc. Neurosci. Abstr.*, **44**, Washington, D.C.
25. **Thompson, L.T.** & Lovitz, E.S. (2014). Intra-amygdalar adrenergic signalling modulates emotional learning and plasticity of hippocampal intrinsic excitability. *Soc. Neurosci. Abstr.*, **44**, Washington, D.C.
26. Kapolowicz, M.R., Sedillo, J.I., Makkieh, M. & **Thompson, L.T.** (2014). Tinnitus-inducing noise trauma and

- D-cycloserine alter amygdalo-hippocampal excitatory biomarkers. *Soc. Neurosci. Abstr.*, **44**, Washington, D.C.
27. Sedillo, J.I., Kapolowicz, M.R., Makkieh, M. & **Thompson, L.T.** (2014). Evidence for multisystem plasticity in early stages of tinnitus. *Soc. Neurosci. Abstr.*, **44**, Washington, D.C.
 28. Underwood, E.L. & **Thompson, L.T.** (2014). Sex-dependent intrinsic excitability: High-energy diet & insulin differentially regulate hippocampal neurons. *Dallas Cog. NSC Research Conference*, Dallas, TX.
 29. Kapolowicz, M.R. & **Thompson, L.T.** (2014). Rapid changes in amygdalo-hippocampal protein expression early in induction of tinnitus by severe noise exposure. *Dallas Cognition & Neuroscience Research Conference*, Richardson, TX.
 30. Underwood, E.L., Atkins, A. & **Thompson, L.T.** (2013). High energy diet alters intrinsic excitability of young hippocampal CA1 neurons: Sex-dependent responses to insulin. *Soc. Neurosci. Abstr.*, **43**, San Diego, CA.
 31. Kapolowicz, M.R., Kardosi, E.H., Alahamady, F.K., Sedillo, J.I. & **Thompson, L.T.** (2013). The effect of noise trauma on Arc and GAD expression in a rat model of tinnitus. *Soc. Neurosci. Abstr.*, **43**, San Diego, CA.
 32. Kapolowicz, M.R. & **Thompson, L.T.** (2013). Amygdalo-hippocampal plasticity in a rat model of tinnitus: Implications for aging and Alzheimer's disease. *Dallas Aging & Cognition Conference*, Jan. 27, Dallas TX.
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INVITED TALKS, LECTURES and SEMINARS (reverse chronological order):

- 2017 "How to become a neuroscience researcher". *Neuroscience Student Association, UT Dallas, Oct. 25.*
- 2017 "Impaired memory and hippocampal function on a high-fat diet: Sex-differences in hormonal regulation, metabolism, neuronal excitability, and insulin-sensitivity". Symposium on Insulin and glucose: New findings in metabolic regulation of memory. *International Behavioral Neuroscience Society, Hiroshima, Japan, Jun 30.*
- 2016 "High-fat diet impairs spatial memory & hippocampal excitability: Role of glucose, hormones and insulin". *Center for Vital Longevity Science Lecture Series, Dallas, TX, Apr 11.*
- 2105 "Neuroplasticity in the hippocampus, amygdala, & limbic system in learning & memory, aging, & disease". *Living & Learning Center Research Colloquium, University of Texas at Dallas, Sep 2.*
- 2013 "Neuroplasticity in hippocampus and amygdala in learning and memory, aging, and stress." *Center for Vital Longevity Science Lecture Series, Dallas, TX, Oct. 7.*
- 2012 "Planning for post-graduate success – Guideposts for freshmen." *Behavioral & Brain Sciences First Year Seminar, UT Dallas, Sept. 18.*
- 2012 "Planning for graduate school success – Guideposts for seniors." *Behavioral & Brain Sciences Graduate School Panel, UT Dallas, Nov. 9.*
- 2012 "Hippocampal-amygdalar interactions in memory consolidation across tasks: Regulation of excitability by Ca²⁺-dependent K⁺ channels." *Dept. of Physiology seminar, University of Texas Southwestern Medical Center, Dallas, TX, July 9.*
- 2011 "Neuroplasticity in hippocampus and amygdala in emotionally arousing and stressful tasks." *The Neuroscience of Stress and Memory, Center for Systems Neuroscience 1st Annual Conference, University of Texas at Dallas, Richardson, TX, May 20.*
- 2010 "Getting into and succeeding in graduate school: A guide for neuroscience students." *Neuroscience Student Association, UT Dallas, Richardson, TX, Apr. 14.*
- 2009 "Hippocampal place cells in Cdk5 knockout mice." *Center for Basic Neuroscience, University of Texas Southwestern Medical Center, Dallas, TX, Aug. 10.*
- 2009 "Antioxidant reversal of age-dependent memory and psychomotor performance deficits: The effects of nutritional supplements on young and aging rats." *RBC Life Sciences Conference, Irving, TX, Jul. 10.*
- 2008 "Single-unit recording from the limbic system of freely-behaving rats, rabbits and mice." *Neurology Fellows seminar, Dept. of Neurology, Univ. of Virginia, Charlottesville, VA, Oct. 16.*
- 2008 "Hippocampal place cells in knockout mice." *Seminar, Center for Network Neuroscience, Univ. of North Texas, Denton, Texas, July 17.*

INVITED TALKS, LECTURES and SEMINARS (continued):

- 2007 "Approaching a conserved cellular mechanism in the hippocampus necessary for learning and memory consolidation." Keynote address, *Neuroscience and Neural Plasticity colloquia*, Dept. of Neuroscience, University of Virginia, Charlottesville, VA, Mar. 13.
- 2006 *National Institute of Neurological Disorders and Stroke Workshop on Models of Geriatric Epilepsy*, NIH, Bethesda MD, 11/2-11/3/2006.
- 2006 *National Institute of Neurological Disorders and Stroke Workshop on Models of Epileptogenesis and Therapy-Resistant Epilepsy*, NIH, Bethesda MD, 10/31-11/1/2006.
- 2006 "Common conserved mechanisms in neuronal plasticity: Dogma vs. reality." Nanotechnology course workshop, *Dept. of Molecular Biology*, UT Dallas, Oct. 27.
- 2005 "Hippocampal post-synaptic plasticity mechanisms." Colloquium speaker, *Center for Network Neuroscience*, Univ. of North Texas, Denton, Texas, Jan. 7.
- 2005 "Common conserved mechanisms in neuronal plasticity: Dogma vs. reality." Colloquium speaker, *Nanotechnology Studies Group*, Dept. of Molecular Biology, UT Dallas, Nov. 18.
- 2005 "Nanoelectrode research progress report", *DARPA Review Panel*, Washington, D.C., Sept. 23.
- 2005 "Progress in nanoelectrode use for *in vitro* recording". *DARPA Review Panel*, Washington, D.C., Mar. 11.
- 2004 "Recording studies with nanoelectrode arrays." *DARPA Review Panel*, Arlington, VA, Aug. 12.
- 2004 "Hippocampal place-field recording from freely-behaving rats: Old-school vs. new-school." *Plexon Instruments Symposium on Instrumentation*, Dallas, Texas, Jan. 14.
- 2003 "Non-synaptic hippocampal plasticity, learning and memory." *Psychology & Neuroscience seminar*, Univ. of South Florida, Tampa, Aug. 1.
- 2003 "Hippocampal cellular correlates of learning". Neuroscience lecture, *Dept. of Psychiatry*, VA Medical Center, Dallas, TX, Feb. 7.
- 2002 "Hippocampal neurons act as place cells." *Neuroscience brownbag talk*, Oct. 4.
- 2002 "Hippocampal cellular correlates of learning." *Neuroscience brownbag talk*, Mar. 29.
- 2001 "Anticholinesterase treatment in aging: Behavioral and neurophysiological effects." *Neuroscience brownbag talk*, Nov. 30.
- 2001 "Non-synaptic neural plasticity in learning and aging." *Neurobiology seminar*, School of Life Sciences, UT San Antonio, June 29.

INVITED TALKS, LECTURES and SEMINARS (continued):

- 2001 "Manipulating neural plasticity in learning and aging: A post-genomic story." *Workshop on Post Genomic Research*, UT Dallas Callier Center, Dallas, May 3.
- 2001 "The brain, memory, and...what was I doing?" *McDermott Lecture Series*, Univ. of Texas at Dallas, Jan. 24.
- 2000 "Age-associated alterations in hippocampal neurons and learning: Roles for calmodulin?" *7th Spring Hippocampal Research Conference*, Grand Cayman, British West Indies, April 24-30.
- 1998 "Spatial learning transiently modulates post-synaptic intrinsic excitability." *Winter Conference on the Neurobiology of Learning and Memory*, Park City, UT.
- 1997 "A hippocampal model for studying aging's impact on learning and memory." *Department of Neurobiology and Anatomy*, University of Texas Medical Center, Houston, Texas.
- 1997 "The hippocampus is modulated by aging: Impact on learning and memory." *Department of Neuroscience*, University of Florida Aging Center, Gainesville, Florida.
- 1997 "Novel nootropic mechanisms for enhancement of learning and memory consolidation." *Department of Pharmacology, University of Kentucky Aging Center*, Lexington, Kentucky.
- 1997 "The hippocampus: Where memories are made, and fade." *Department of Psychology and Neuroscience*, Baylor University, Waco, Texas, Mar. 21.
- 1997 "The hippocampus: A model system for strategies to reverse age-dependent deficits in learning and memory." *School of Human Development*, University of Texas at Dallas, Richardson, Texas.
- 1996 "Cellular and behavioral studies of aging-related learning deficits." *Physician's Research Conference*, Ross University Medical School, Commonwealth of Dominica, West Indies.
- 1994 "Partial agonists of the glycine site on the NMDA receptor facilitate eyeblink conditioning in aging rabbits." *Winter Conference on the Neurobiology of Learning and Memory*, Park City, UT.
- 1993 "Modulating learning by modulating the NMDA receptor." *Fourth Midwestern Hippocampal Meeting*, Department of Psychology and the Beckman Institute, Univ. of Illinois, Springfield, IL.
- 1992 "Hippocampal NMDA receptors and associative eyeblink conditioning." *Third Midwestern Hippocampal Meeting*, Department of Psychology and the Neuroscience Institute, Northwestern University, Evanston, IL.
- 1991 "*Efectos de la nimodipina en el proceso de aprendizaje y actividad neuronal en el envejecimiento.*" [Effects of nimodipine on information processing and hippocampal neuronal activity.] Bayer Symposium, "*Hemorragias subaracnoideas y demencia actualizacion y tratamiento.*" [Differentiating and treating subarachnoid hemorrhages and nonvascular dementia.] VIIIth Pan American Congress of Neurology, Montevideo, Uruguay.

INVITED TALKS, LECTURES and SEMINARS (continued):

- 1990 "Calcium antagonists that cross the blood-brain barrier alter hippocampal excitability *in vivo*." *First Midwestern Hippocampal Meeting*, Department of Psychology and the Neuroscience Institute, Northwestern University, Evanston, IL.
- 1988 "Hippocampal function in the processing of spatial information." *Postdoctoral interview series*, Department of Cell Biology & Anatomy, Northwestern University Medical School, Chicago, IL.
- 1985 "Interactions between single-trial taste aversion and spatial learning in freely-behaving rats." *Department of Physiology*, SUNY Downstate Medical Center, Brooklyn, NY.

INTERVIEWS/FEATURES PUBLISHED IN THE POPULAR MEDIA:

- 2016 NBC-5 (picked up by NBC affiliates nationwide, including NYC, San Francisco, L.A., Chicago, Atlanta, Houston, Miami, etc.): "High fat foods affect brain health: UTD researchers." <http://www.nbcdfw.com/news/health/High-Fat-Foods-Affect-Brain-Health-UTD-Researchers-368890431.html>
- 2015 *Science News* (**Cover story** about the Society for Neuroscience meeting in Chicago): "High-fat diet's negative effects on memory may fade." <https://www.sciencenews.org/article/high-fat-diets-negative-effect-memory-may-fade>
- 2014 *The UTD Mercury*: "Sleepless and slow." http://www.utdmercury.com/news/article_ea0b2718-9f3c-11e3-9d68-001a4bcf6878.html
- 2013 *The New Scientist*. "Are Alzheimer's and diabetes the same disease?" <http://www.newscientist.com/article/mg22029453.400-are-alzheimers-and-diabetes-the-same-disease.html?page=2#.UxpFXY58dkl>

AD HOC REVIEWER FOR:

Grant Applications:

- Alzheimer's Association (1998 -)
- Cognitive Functional Neuroscience Review Committee, Special Emphasis Study Section, NIMH, (1998 -)
- Developmental Neuroscience Study Section, NIH (1995 — 2000)
- Loan Repayment Program, NIH (2006 -)

Journals:

I peer-review 1 to 3 manuscripts per month for the following:

- Nature (1992-)
- Brain Research (1992 -)
- Journal of Neuroscience (1994 -)
- Neurobiology of Aging (1995 -)
- Journal of Neurophysiology (1996 -)
- Hippocampus (1997 -)
- Behavioral Neuroscience (1997 -)
- Journal of Pharmacology & Experimental Therapeutics (1997 -)
- Trends in Neuroscience (1998 -)
- Trends in Pharmacological Sciences (1998 -)
- Physiology & Behavior (1998 -)
- Neuron (2001 -)
- Behavioural Pharmacology (2005 -)
- Neuroscience Letters (2006 -)
- European Journal of Neuroscience (2006 -)
- Nature Neuroscience (2009-)
- Neuroscience (2011 -)
- Experimental Neurology (2012 -)
- BMC Biology (2012 -)
- Behavioural Brain Research (2012 -)
- Neurobiology of Learning & Memory (2013 -)
- Aging Cell (2013 -)
- AIMS Neuroscience (2013 -)
- Neural Plasticity (2014 -)
- Frontiers in Neuroscience (2015 -)
- Frontiers in Aging Neuroscience (2015 -)
- Frontiers in Psychiatry (Guest Editor, 2015 -)
- Neural Regeneration Research (2017 -)
- Anxiety and Depression (2017 -)
- Synapse (2018 -)
- Toxicology & Applied Pharmacology (2018 -)
- Journal of Chemical Neuroanatomy (2018 -)
- Frontiers in Systems Neuroscience (2018 -)
- Current Aging Science (2018 -)
- Nature Microbiology (2019 -)
- PLoS 1 (2019 -)