CURRICULUM VITAE **September 2025**

GARY W. ARENDASH

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Education

Institution	Field of Study	Degree	Date
San Diego State University	Biology	B.S.	1971
Univ. of Calif., San Francisco	Physiology/Neuroscience	Ph.D.	1978
UCLA Brain Research Institute	Neuroscience	Postdoctoral	1978-81

Employment/Affiliations [Blue font text are post-USF years 2012-present]

Founder, RF Longevity SE, Phoenix, AZ, 2024-present (RFlongevity.com)
Founder and CEO, NeuroEM Therapeutics, Inc. Phoenix, AZ, 2013-2023 (neuroem.com)
Research Professor, 2006-2012, Dept. of Cell Biology, Microbiology, and Molecular Biology, University of South Florida
Director of Mouse Core & Research Professor of The Florida Alzheimer's Disease Research Center, Tampa, 2005-2010
Professor, 1996-2006, Department of Biology, University of South Florida
Associate Professor, 1987-1996, Department of Biology University of South Florida
Assistant Professor, 1981-1987, Department of Biology, University of South Florida
Research Anatomist, 1980-81, Department of Anatomy & Brain Research Institute, University of California, Los Angeles
Research Assistant, 1977-78, Dept. of Physiology, Univ. of California, San Francisco
Teaching Assistant, 1976-77, Dept. of Physiology, Univ. of California, San Francisco

Areas of Specialization

Neuroscience, Neurobiology of Aging, Therapeutics against Alzheimer's Disease, Transcranial Radiofrequency Wave Treatment (TRFT; a.k.a. TEMT), Human Life Extension, Brain Cancers

Fellowships and Traineeships

NIH Predoctoral Traineeship 1972-1976
University of California, San Francisco
NIH Postdoctoral Fellowship 1978-1980
Brain Research Institute and Department of Anatomy
University of California, Los Angeles

RESEARCH ACTIVITIES

Summary:

- Attained a total of $5,487,000 in funding while at USF, including multiple NIH grants
- Attained two NIH grants and a Foundation grant post-USF (at NeuroEM) totaling $2,970,000 ($8,457,000 in total funding at USF/post-USF).
- Published a total of 136 papers, with 115 reporting on research I did while at USF
- All 136 publications are full length (no letters or meeting abstracts)
- Publication in top-tier journals (e.g., Nature, Science, J. Alzheimer's Disease)
- Pre-clinical research at USF translated to human clinical trials thereafter at NeuroEM
- Nine issued patents, with all but one of them protecting EM technology for USF and NeuroEM in the U.S.
- The EM technology I developed while at USF formed the two USF flagship patents for clinical use of this technology against Alzheimer's Disease), for increasing brain toxin cleansing, and with multiple mechanisms to possibly increase human longevity.

Professional Organizations

Professional Societies:
International Brain Research Organization
Society of the Sigma Xi
Society for Neuroscience
New York Academy of Sciences
International Behavioral Neuroscience Society

USF Institutes/Programs:
USF Institute on Aging
USF Neuroscience Program Faculty

Journal Editorial Board Member:

Journal of Alzheimer's Disease, former Senior Editor; current Associate Editor
Journal of Alzheimer's Disease and Parkinsonism, Editorial Board

Research Awards and Grants

Total of $5,487,000 while at USF
Total of $2,970,000 post-USF (while at NeuroEM Therapeutics)

Orange font text are pre-doctoral and post-doctoral awards (2)
Black font text are USF years 1981-2012 (24)
Blue font text are post-USF years 2013 through 2025 (3)

Recipient of NIH Predoctoral Traineeship - 1972
Recipient of NIH Postdoctoral Fellowship - 1978
Faculty Research and Creative Scholarship Award, University of South Florida "Intracerebral Transplantation of Brain Tissue: Effects of Testosterone and Feasibility of Adult Recipients" $4,000.
Biomedical Research Support Grant, University of South Florida "The Possible Use of Brain Tissue Transplantation to Alter Hormonal Cyclicity, Enhance Memory, and reverse CNS-Induced Paralysis", $4,999.
Transplantation of Cholinergic Neurons to Eliminate Possible Memory Deficits In A New Animal Model for Alzheimer's Disease" 6/1/83 - 5/31/84, $12,000.
President's Council Research Grant, University of South Florida. "The Use of Brain Tissue Transplants to Eliminate Memory Deficits in a New Animal Model for Alzheimer's Disease" 6/1/83 - 5/31/84, $4,500.
New Investigator Research Grant, National Institutes of Health. "Brain Tissue Transplants and Reproductive Processes" 7/1/83 - 6/30/86, $106,104.
Alzheimer's Disease Research Grant, ADRD Association. "Nucleus Basalis-Induced Cell Loss in the Rat Cerebral Cortex and Its Possible Prevention by Cholinergic Transplants" 10/1/86-9/30/87, $20,000.
Biomedical Research Support Grant, University of South Florida, "Effects of Deep Brain Tissue Transplants in an Animal Model for Alzheimer's Disease," 12/1/87-11/30/88, $4,250.
Department of Surgery Research Grant, University of South Florida. "MRI Visualization of Neural Transplants," 7/1/88-6/30/89, $2,500.
United Parkinson's Disease Assoc. "Magnetic Resonance Imaging and Behavioral Correlates Following Transplant of Ferrite-Labelled Adrenal Medullary Grafts in Striatum," 1/1/90-12/31/90, $20,000.
Taiho Pharmaceuticals, Inc. "Novel Treatments in a Model for Alzheimer's Disease,"1/1/90-3/31/92, $27,500.
United Parkinson's Disease Assoc. "Iron-Induced Degeneration of Substantia Nigra Neurons," 1/1/91-12/31/91, $25,249.
Southern Medical Association. "The effects of a novel antioxidant on iron-induced degeneration within the substantia nigra", (with G. Sengstock), 7/1/91-6/30/92, $2,500.
The Upjohn Company. "Effects of an orally administered lazaroid compound in rats infused intra-nigrally with iron", 4/1/92 - 3/31/93, $20,000.
Southern Medical Association. "Parkinson's Disease: Is lipid peroxidation involved in nigrostriatal degeneration", (with G. Sengstock), 7/1/92 - 6/30/93, $2,500.

Theracell, Inc., Transplantation of a cell support matrix in an animal model of Parkinson's Disease, 3/16/94-3/15/95, $3,000

Centaur Pharmaceuticals, Inc., "Development of an animal model for AIDS dementia for evaluation of potential therapies", 7/17/96-12/31/98, $56,000

Institute on Aging, USF, "Behavioral and pathologic correlates in a doubly transgenic Mouse model of Alzheimer's Disease", 7/1/99-6/30/00, $6959

National Institutes of Health, "Functional consequences of vaccination in AD transgenic Mice, 9/1/00-6/30/05, Co-PI with D. Morgan, direct costs $1,250,000

Alzheimer's Disease & Related Diseases Association, "Protective and therapeutic effects of environmental enrichment in transgenic mouse models of Alzheimer's Disease", 7/1/02-6/30/05, $239,699.

National Institutes of Health, "Promoters and Inhibitors of Alzheimer Amyloid Formation", 7/1/03-3/31/05, Co-PI with H. Potter, direct costs $200,000

National Institutes of Health, "Environmental Enrichment Effects in AD Transgenic Mice", 5/1/05 – 3/31/10, direct costs $698,000; additional $323,000 in matching funds from the Byrd Alzheimer's Center and Research Institute. Total directs: $1,021,200

Veteran's Administration (VA) Merit Award, "Potential roles of GRK5 deficiency in early Alzheimer's Disease pathogenesis", 2006-2010, Co-PI with Z. Su (Univ. of Kansas), direct costs $980,000

National Institutes of Health, "Florida Alzheimer's Disease Research Center Mouse Core", 5/1/05 – 3/31/10, direct costs $550,000; additional $254,000 in matching funds from the Byrd Alzheimer's Center and Research Institute. Total directs: $804,000.

Interdisciplinary Research Development Grant, USF, "Does Traumatic Brain Injury Precipitate Alzheimer's", 2009-2011, Co-PI with T. Shimizu (USF), direct costs $50,000.

National Institutes of Health, Grant 1R43NS090653-01A1, "Disaggregation of Toxic Protein Oligomers in Brain with Electromagnetic Treatment", 11/30/16 – 11/29/18. G. Arendash (PI), Total costs: $255,000.

Glass Foundation (Boston, MA) Research Grant, "A Phase I Study to Evaluate the Safety and Efficacy of Transcranial Electromagnetic Treatment (TEMT) Against Alzheimer's Disease", 4/1/16 – 12/31/20, Total costs: $515,000.

National Institutes of Health, Grant 9R44AG073096-02A1, "Disaggregation of Toxic Protein Oligomers in Brain with Electromagnetic Treatment", 1/1/22 – 12/31/23, G. Arendash (PI), Total costs: $2,200,000.

Description of Post-USF Research Support

NIH SBIR Phase II Research Grant (R44AG073096) G. Arendash (PI) $2,200,000
Title: *"Disaggregation of Toxic Protein Oligomers in Brain with Electromagnetic Treatment"*, 1/1/22-12/31/23

Overall Goals: This NIH grant's goal was to extend our completed NIH SBIR Phase I research involving AD brain homogenates to "in vitro" studies utilizing various cell cultures (i.e., N2a, primary neuron, glial, lymphocyte) in order to comprehensively evaluate the safety and mechanisms of TEMT action. By the end of this grant, we identified a best set of TEMT

parameters for clinical use in our MemorEM devices and to have confidence that this set of parameters is safe, based on many endpoints of mitochondrial function and immune function.

Glass Foundation Research Grant G. Arendash (PI) $515,000
Title: *"A Phase I Study to Evaluate the Safety and Efficacy of Transcranial Electromagnetic Treatment (TEMT) Against Alzheimer's Disease",* 4/1/16 – 12/31/20

Overall Goals: This Glass Foundation grant provided most of the funding for NeuroEM's Pilot clinical trial, whose major goals were to determine the safety and initial efficacy of Transcranial Electromagnetic Treatment (TEMT) in mild/moderate Alzheimer's patients. Over a 2-month period, TEMT was administered twice daily (one hour sessions) in the AD patient's home by their caregiver; this, utilizing NeuroEM's first-of-its-kind MemorEM device. The clinical trial was performed by the USF/Byrd Alzheimer's Institute in Tampa and evaluated a wide range of AD-related measures. This was the first clinical trial in the U.S. involving full brain electromagnetic treatment to humans, specifically in AD subjects.

NIH SBIR Phase I Research Grant (1R43NS090653-01A1) G. Arendash (PI) $255,000
Title: "Disaggregation of Toxic Protein Oligomers in Brain with Electromagnetic Treatment", 11/30/16 – 11/29/18

Overall Goals: This grant to NeuroEM Therapeutics demonstrated the ability of Transcranial Electromagnetic Treatment (TEMT) to disaggregate a variety of toxic "oligomeric" proteins (Aβ, tau, α-synuclein) in human AD brain tissues. As well, the grant evaluated TEMT at various frequencies and electromagnetic power levels to help identify a best set of parameters.

Peer-Reviewed Publications (136)

[See https://www.researchgate.net/scientific-contributions/Gary-W-Arendash-39189626 to download any of the below 136 full-length publications]
Citations: 13,397 (Publications by others that reference Dr. Arendash's publications)

Green Font: Research done as a Ph.D. graduate student at UCSF (5)
Orange Font: Research done as a Post-Doctoral fellow at UCLA (7)
Black Font: Research done at USF (115)
Blue Font: Research done after USF at NeuroEM Therapeutics/RF Longevity (9)

1) Arendash, G.W. and R.V. Gallo. Serotonin involvement in the inhibition of episodic luteinizing hormone release during electrical stimulation of the midbrain dorsal raphe nucleus in ovariectomized rats. Endocrinology 102: 1199-1206, 1978.

2) Arendash, G.W. and R.V. Gallo. A characterization of the effects of pentobarbital on episodic LH release in ovariectomized rats. Neuro endocrinology 27: 204-215, 1978.

3) Arendash, G.W. and R.V. Gallo. Apomorphine-induced inhibition of episodic LH release in ovariectomized rats with complete hypothalamic differentiation. Proc. Soc. Exp.Biol.Med. 159: 121-125, 1978.

4) Arendash, G.W. and R.V. Gallo. Regional differences in response to electrical stimulation within the medial preoptic-suprachiasmatic region on blood luteinizing hormone levels in ovariectomized and ovariectomized, estrogen-primed rats. Endocrinology 104: 333-343, 1979.

5) Arendash, G.W. and R.V. Gallo. Effects of lesions in the suprachiasmatic-retrochiasmatic area on the inhibition of episodic LH release induced by electrical stimulation of the midbrain dorsal raphe nucleus. Neuroendocrino. 28: 349-357, 1979.

6) Leung, P.C.K., G.W. Arendash, R.A. Gorski, and C.H. Sawyer. Effects of intraventricular norepinephrine on preoptic-anterior hypothalamic electrical activity in the freely-moving rat: Modulation by ovarian steroid hormones. Brain Research 226: 143-154, 1981.

7) Leung, P.C.K., G.W. Arendash, R.A. Gorski and C.H. Sawyer. Electrical stimulation of mesencephalic noradrenergic pathway: Effects on luteinizing hormone levels in blood of ovariectomized and ovariectomized, steroid-primed rats. Endocrinology 109: 720-728, 1981.

8) Leung, P.C.K., G.W. Arendash, D.J. Whitmoyer, R.A. Gorski and C.H. Sawyer. Effects of intraventricular infusion of alpha and beta adrenoreceptor agonists on blood levels of luteinizing hormone (LH) in ovariectomized (OVX) and OVX, steroid-primed rats. Anat. Rec. 199: 153A, 1981.

9) Arendash, G.W. and R.A. Gorski. Enhancement of sexual behavior in female rats by neonatal transplantation of brain tissue from males. Science 217: 1276-1278, 1982.

10) Leung, P.C.K., G.W. Arendash, R.A. Gorski, and C.H. Sawyer. Differential Effects of Central Adrenoceptor Agonists on Luteinizing Hormone Release. Neuroendocrinology 34: 207-214, 1982.

11) Arendash, G.W. and R.A. Gorski. Effects of discrete lesions of the sexually dimorphic nucleus of the preoptic area or other medical preoptic regions on the sexual behavior of male rats. Brain Research Bull. 10: 147-154, 1983.

12) Arendash, G.W. and R.A. Gorski. Suppression of lordosis responsiveness in the female rat during mesencephalic electrical stimulation. Pharmacology, Biochemistry, and Behavior, 19: 351-357, 1983.

13) Arendash, G.W. Brain tissue transplantation: A new tool for exploring the sexual differentiation of the brain. International Brain Research Organization News (Suppl. to Neuroscience) 11: 7-12, 1983.

14) Arendash, G.W. and R.A. Gorski. Brain tissue transplants and reproductive function: Implications for the sexual differentiation of the brain. In: Neural Transplants:

Development and Function (J. Sladek and D. Gash, eds.) Plenum Press, New York, 223-241, 1984.

15) Arendash, G.W. Alleviation of estrogen-induced hyperprolactinemia by hypothalamic tissue transplants containing tuberoinfundibular dopaminergic neurons. In: Neural Grafting In The Mammalian CNS (A. Bjorklund and U. Stenevi, eds.) Elsevier Pub., Amsterdam, 663-670, 1985.

16) Arendash, G.W., P.N. Strong, and P.R. Mouton. Intracerebral transplantation of cholinergic neurons in a new animal model for Alzheimer's Disease. In: Senile Dementia of the Alzheimer Type (J. Hutton and A. Kenny, eds.) Alan R. Liss, Inc., New York, 351-376, 1985.

17) Arendash, G.W. and P.C.K. Leung. Alleviation of estrogen-induced hyperprolactinemia through intracerebral transplantation of hypothalamic tissue containing dopaminergic neurons. Neuroendocrinology 43: 359-367, 1986.

18) Arendash, G.W. Cholinergic transplants in an animal model for Alzheimer's Disease. In: Biological Psychiatry (C. Shagrass, R.C. Josiassem, W.H. Bridger, K.J. Weiss, D. Stoff, and G.W. Simpson, eds.) Elsevier Pub., New York, 1391-1396, 1986.

19) Arendash, G.W. and P.R. Mouton. Transplantation of nucleus basalis magnocellularis cholinergic neurons into the cholinergic-depleted cerebral cortex: Morphological and behavioral effects. Annals of New York Academy of Sciences, 495: 431-443, 1987.

20) Arendash, G.W. and R.A. Gorski. Testosterone-induced enhancement of male medial preoptic tissue transplant volumes in female recipients: A "neuronotrophic" action of testosterone. Developmental Brain Research, 34: 69-77, 1987.

21) Arendash, G.W., Millard, W.J., Dunn, A.J. and E.M. Meyer. Long-term neuropathological and neurochemical effects of nucleus basalis lesions in the rat. Science 238: 952-956, 1987.

22) Meyer, E.M., Arendash, G.W., Judkins, J., Ying, L. and W.R. Kem. Effects of nucleus basalis lesions on the muscarinic and nicotinic modulation of [^{3}H]-ACh release in the rat cerebral cortex. Journal of Neurochemistry, 49: 1758-1762, 1987.

23) Mouton, P.R., Meyer, E.M. and G.W. Arendash. Induction of cortical cholinergic hypofunction and memory retention deficits through intracortical AF64A infusions. Brain Research, 444: 104-118, 1988.

24) Ardizzoni, S.C., Michaels, A. and G.W. Arendash. Labeling of neural cells by gold-filled sendai virus envelopes before intracerebral transplantation. Science 239: 635-637, 1988.

25) Raulli, R., Arendash, G. and F.T. Crews. Effects of nucleus basalis magnocellularis (nBM) lesions on muscarinic stimulation of phosphoinositide hydrolysis. Neurobiology of Aging. 10:191-197, 1989.

26) Arendash, G.W., Millard, W.J., Dawson, R., Dunn, A.J. and E.M. Meyer. Different long-term effects of bilateral and unilateral nucleus basalis lesions on rat cerebral cortical neurotransmitter content. Neurochemical Research 14:1113-1118, 1989.

27) Poulakos, J.J., Arendash, G.W., Millard, W.J., Sjak-Shie, N. and E.M. Meyer. Cholinergic-Neuropeptide Y interactions in the rat cerebral cortex. Towards a model for the trans-synaptic effects of cholinergic transmissions. In: Novel Approaches to the Treatment of Alzheimer's Disease. (E. Meyer, J. Simpkins, J. Yamamoto, eds.) Plenum Press, New York, 269-277, 1989.

28) Mouton, P.R., Meyer, E.M. and G.W. Arendash. Intracortical AF64A: Memory impairments and recovery from cholinergic hypofunction. Pharmacol. Biochem. Behav. 32:841-848, 1989.

29) Arendash, G.W., Meyer, E.M., Shaw, J. and W.J. Millard. Transneuronal neurochemical and neuropathological changes induced by nucleus basalis lesions: A possible degenerative mechanism in Alzheimer's Disease. In: Novel Approaches to the Treatment of Alzheimer's Disease. (E. Meyer, J. Simpkins, J. Yamamoto, eds.) Plenum Press, New York, 235-254, 1989.

30) Strong, P.N. and G.W. Arendash. The effects of nucleus basalis lesions in the rat on one-way passive and active avoidance, 2-way avoidance, and Lashley III maze learning: An animal model for Senile Dementia of the Alzheimer's Type. In: Novel Approaches to the Treatment of Alzheimer's Disease. (E. Meyer, J. Simpkins, J. Yamamoto, eds.) Plenum Press, New York, 279-292, 1989.

31) Mouton, P.R. and G.W. Arendash. Atrophy of cholinergic neurons within the rat nucleus basalis magnocellularis following intracortical AF64A infusion. Neuroscience Letters. 111: 52-57, 1990.

32) Meyer, E.M., Millard, W.J., Poulakos, J.J., and G.W. Arendash. Neurochemical and behavioral effects of bilateral nucleus basalis lesions in the aged rat. In: Medical Advances in Aging. (A.L. Goldstein, ed.) Plenum Press, New York, 491-496, 1990.

33) Millard, W.J., Arendash, G.W., Dunn, A.J. and E.M. Meyer. Effects of aging and nucleus basalis lesions on cerebral cortical levels of corticotropin-releasing hormone (CRH)-like immunoreactivity in the rat. Neuroscience Letters, 113:233-239, 1990.

34) Kott, J.N., Westrum, L.E., Ardizzoni, S.C. and G.W. Arendash. Ultrastructural localization of gold particles within neural grafts labeled with gold-filled Sendai virus envelopes. Journal of Electron Microscopic Techniques, 18:197-202, 1991.

35) Sengstock, G.J., Johnson, K., Jantzen, P.T., Meyer, E.M., Dunn, A.J. and G.W. Arendash. Nucleus basalis lesioning in neonate rats: A selective cortical cholinergic hypofunction and cognitive deficits during adulthood. Exp. Brain Research, 90:163-174, 1992.

36) Sengstock, G.J., Olanow, C.W., Dunn, A.J., and G.W. Arendash. Iron induces degeneration of nigrostriatal neurons. Brain Research Bulletin, 28:645-649, 1992.

37) Zawia, N., Arendash, G.W., and L. Wecker. Basal forebrain cholinergic neurons in aged rat brain are more susceptible to ibotenate-induced degeneration than neurons in young adult brain. Brain Research, 589:333-337, 1992.

38) Smith, D.A., Clarke, L.P., Fiedler, J.A., Murtagh, F.R., Bonaroti, E.A., Cahill, D.W. and G.W. Arendash. MRI atlas of the rat brain: Use of a clinical MR scanner for small animal brain imaging. Brain Research Bulletin, 31:115-120, 1993.

39) Sengstock, G.J., Olanow, C.W., Menzies, R.A., Dunn, A.J. and G.W. Arendash. Infusion of iron into the rat substantia nigra: Nigral pathology and dose-dependent loss of striatal dopaminergic markers. J. Neurosci. Research, 35:67-82,1993.

40) Arendash, G.W., Olanow, C.W., and G.J. Sengstock. Intranigral iron infusion in rats: A progressive model for excess nigral iron levels in Parkinson's Disease? In: Key Topics in Brain Research (P. Riederer and M.B.H. Youdim, eds.) Springer, Vienna/New York, 87-101, 1993.

41) Arendash, G.W., Sengstock, G.J., Olanow, C.W., Barone, S. and A.J. Dunn. Intranigral iron infusion as a model for Parkinson's Disease. In: Animal Models of Toxin-Induced Neurological Disorders (M.L. Woodruff and A.J. Nonneman, eds.) Plenum Pub. Corp., New York, 175-212, 1994.

42) Olanow, C.W. and G.W. Arendash. Metals and free radicals in neurodegeneration. Current Opinion in Neurology 7: (548-558), 1994.

43) Sengstock, G.J., Olanow, C.W., Dunn, A.J., Barone, S. and G.W. Arendash. Progressive changes in striatal dopaminergic markers, nigral volume, and rotational behavior following iron infusion into the rat substantia nigra. Experimental Neurology 130: 82-94, 1994.

44) Oestreicher, E., Sengstock, G.J., Riederer, P., Olanow, C.W., Dunn, A.J. and G.W. Arendash. Degeneration of nigrostriatal dopaminergic neurons increases iron within the substantia nigra: A histochemical and neurochemical study. Brain Research 660, 8-18, 1994.

45) Arendash, G. W., Sengstock, G.J., Sanberg, P.R., and W.R. Kem. Improved learning and

memory in aged rats with chronic administration of the nicotinic receptor agonist GTS-21. Brain Research 674, 252-259, 1995.

46) Sastry, S. and G.W. Arendash. Time-dependent changes in iron levels within the substantia nigra following lesions within the neostriatum/globus pallidus complex. Neuroscience 67 (3), 649-666, 1995.

47) Arendash, G.W., Sanberg, P.R., and G.J. Sengstock. Nicotine enhances the learning and memory of old rats. Pharmacol. Biochem. Behav., 52 (3), 517-523,1995.

48) Socci, D. J., Sanberg, P.R., and G.W. Arendash. Nicotine enhances Morris water maze performance of young and aged rats. Neurobiology of Aging 16 (5) 857-860, 1995.

49) Socci, D.J., Crandall, B.M., and G.W. Arendash. Chronic antioxidant treatment improves the cognitive performance of aged rats. Brain Research 693; 88-94, 1995.

50) Sack, C.A., Socci, D.J., Crandall, B.M., and G.W. Arendash. Antioxidant treatment with PBN improves the cognitive performance and survival of aging rats. Neuroscience Letters 205: 181-185, 1996.

51) Socci, D.J. and G.W. Arendash. Chronic nicotine treatment prevents neuronal loss in neocortex resulting from nucleus basalis lesions. Molecular and Chemical Neuropathology 27 (3), 285-305, 1996.

52) Arendash, G.W., Crandall, B.M., Kienzl, E., and K.A. Jellinger. Neocortical iron levels in Alzheimer's Disease correlate with neocortical lipid peroxidation and amyloid angiopathy. Metal Ions in Biology and Medicine 4, 614-616, 1996.

53) Socci, D.J., Pert, C.B., Ruff, M.R. and G.W. Arendash. The VIP analogue Peptide T prevents NBM lesion-induced cortical atrophy in aged rats, Peptides 17, 831-837, 1996.

54) Crandall, B.M., Sengstock, G.J., and G.W. Arendash. Effects of Lazaroids U74389F and U89843D on iron-induced degeneration of nigrostriatal dopaminergic neurons. Metal Ions in Biology and Medicine 4. 317-319, 1996.

55) Borlongan, C.V., Bjugstad, K.B., Ross, S.D., Stahl, C.E., Arendash, G.W., and P.R. Sanberg. Age-dependent neurobehavioral responses by young and mature adult rats to systemic kainic acid. Restorative Neurology and Neuroscience, 10:103-108, 1996.

56) Bjugstad, K., Kem, W.R., Mahnir, V.M., and G.W. Arendash.GTS-21 improves learning in aged rats without affecting nicotine receptor densities in neocortex and hippocampus, Drug. Development Research. 39: 19-28, 1996.

57) Su, G.C., Arendash, G.W., Kalaria, R.N., and Michael J. Mullan. Long term venous

$A\beta_{1-40}$ infusion in rats causes lung hemorrhage and brain perivascular gliosis. Annals N.Y. Acad. Sci. 826: 440-446, 1997.

58) Crawford, F., Suo, Z., Fang, C., Sawar, A., Su, G., Arendash, G., and M. Mullan. The vasoactivity of Aβ peptides. Annals N.Y. Acad. Sci. 826: 35-46, 1997.

59) Sengstock, G.J., Zawia, N., Olanow, C.W., Dunn, A.J. and G.W. Arendash. Intranigral iron infusion in the rat: Acute elevations in nigral lipid peroxidation and striatal dopaminergic markers with ensuing nigral degeneration. Biological Tract Element Research 58: 177-195, 1997

60) Kienzl, E., Jellinger, K., Puchinger, L., Crandall, B., and G.W. Arendash. Profiles of brain phospholipids and fatty acids in Alzheimer's disease brains. In: Neurochemistry: Cellular, Molecular, and Clinical Aspects (A. Teelken and J. Korf, eds.) Plenum Press, New York, 33-38, 1997.

61) Bjustad, K.B., Flitter, W.D., Garland, W.A., Su, G.C., and G.W. Arendash. Preventative actions of a synthetic antioxidant in a novel animal model of AIDS dementia. Brain Research 795: 349-357, 1998.

62) Socci, D.J., Bjugstad, K.B., Jones, H.C., Pattisapu, J.V., and G.W. Arendash. Evidence that the pathophysiology of inherited hydrocephalus is associated with oxidative stress in the H-Tx rat model. Experimental Neurology 155: 109-117, 1999.

63) Pompl, P.N., Mullan, M.J., Bjugstad, K.B., and G.W. Arendash. Adaptation of the circular platform spatial memory task for mice: Use in detecting cognitive impairment in the APP_{sw} transgenic mouse model for Alzheimer's Disease. J. Neuroscience Methods 87: 87-95, 1999.

64) Su, G.C., Arendash, G.W., Kalaria, R.N., Bjugstad, K.B., and M.J. Mullan. Intravascular Infusions of soluble β-amyloid compromise the blood-brain barrier, activate CNS glial cells, and induce peripheral hemorrhage. Brain Research 818: 105-117, 1999.

65) Linert, W., Huber, M., Bjugstad, K.B., Grossman, S., and G.W. Arendash. In vitro and in vivo studies investigating possible antioxidant actions of nicotine: Relevance to Parkinson's and Alzheimer's Diseases. Biochemical Biophysica ACTA 1454: 143-152, 1999.

66) Arendash, G.W., Su, G.C., Crawford, F.C., Bjugstad, K.B., and M.J. Mullan. Intravascular β-amyloid infusion increases blood pressure: Implications for a vasoactive role of β-amyloid in the pathogenesis of Alzheimer's disease. Neuroscience Letters 268: 17-20, 1999.

67) King, D.K., Arendash, G.W., Crawford, F., Sterk, T., Menedez, J., and M.J. Mullan. Progressive and gender-dependent cognitive impairment occurs in the APP_{sw} transgenic

mouse model for Alzheimer's Disease. Behavioral Brain Research 103: 145-162, 1999.

68) Bjugstad, K.B. and G.W. Arendash. An intracerebral TNF-α infusion model for inflammation in Alzheimer's disease. In: Innovative Animal Models of CNS Disease: From Molecule to Therapy (D.F. Emerich and R. Dean, eds.) Humana Press Inc. Totowa, N.J., pp. 93-112, 2000.

69) Morgan, D., Diamond, D.M., Gottschall, P.E., Ugen, K.E., Dickey, C., Hardy, J., Duff, K., Jantzen, P., DiCarlo, G., Wilcock, D., Connor, K., Hatcher, J., Hope, C., Gordon, M. and G.W. Arendash. Aβ peptide vaccination prevents memory loss in an animal model of Alzheimer's disease. Nature 408: 982-985, 2000.

70) Arendash, G.W., King, D.L., Gordon, M.N., Morgan, D., Hatcher, J.M., Hope, C.E. and D.M. Diamond. Progressive, age-related behavioral impairments in transgenic mice carrying both mutant amyloid precursor protein and presenilin-1 transgenes. Brain Research 891: 42-53, 2001.

71) Gordon, M.N., King, D.L., Diamond, D.M., Jantzen, P.T., Boyett, K.L., Hope, C.E., Hatcher, J.M., DiCarlo, G., Gottschall, P.E., Morgan, D. and G.W. Arendash. Correlation between cognitive deficits and Aβ deposits in transgenic APP+PS1 mice. Neurobiology of Aging 22: 377-386, 2001.

72) Bjugstad, K.B., Flitter, W.D., Garland, W.A., Philpot, R.M., Kirstein C.L., and G.W. Arendash. CPI-1189 prevents apoptosis and reduces GFAP immunostaining in a TNF-α infusion model for AIDS Dementia Complex. J. NeuroVirology 6: 478-491, 2001.

73) Arendash, G.W., Gordon, M.N., Diamond, D.M., Hatcher, J.M., Austin, L.A., Jantzen, P., DiCarlo, G., Wilcock, D., and D. Morgan. Behavioral assessment of Alzheimer's transgenic mice following long-term Aβ vaccination: Task specificity and correlations between Aβ deposition and spatial memory. DNA and Cell Biology 11: 737-744, 2001.

74) King, D.L. and G.W. Arendash. Maintained synaptophysin immunoreactivity in Tg2576 Transgenic mice during aging: Correlations with cognitive impairment. Brain Research 926: 58-68, 2002.

75) King, D.L. and G.W. Arendash. Behavioral characterization of the Tg2576 transgenic model of Alzheimer's disease through 19 months. Physiology and Behavior 75: 627-642, 2002.

76) Arendash, G.W. and D.L. King. Intra- and inter-task relationships in a behavioral test battery given to Tg2576 transgenic mice and controls. Physiology and Behavior 75: 643-652, 2002.

77) Newman, M.B., Arendash, G.W., Shytle, R.D. and P.R. Sanberg. Nicotine's oxidative and antioxidant properties in CNS, Life Sciences 71: 2807-2820, 2002.

78) Austin, L.A., Arendash, G.W., Gordon, M.N., Diamond, D.M., DiCarlo, G., Dickey, C., Ugen, K., and D. Morgan. Short-term Aβ vaccinations do not improve cognitive performance in cognitively-impaired APP+PS1 mice. Behavioral Neuroscience 117: 478-484, 2003.

79) Joseph J.A., Denisova, N.A., Arendash, G., Gordon, M., Diamond, D., Shukitt-Hale, B., and D. Morgan. Blueberry supplementation enhances signaling and prevents behavioral deficits in Alzheimer' disease model. Nutritional Neuroscience 6: 153-162, 2003

80) Garcia, M.F., Gordon, M.N., Hutton, M., Lewis, J., McGowan, E., Dickson, D., Morgan, D., and G.W. Arendash. The retinal degeneration (rd) gene seriously impairs spatial cognitive performance in normal and Alzheimer's transgenic mice. NeuroReport 15: 73-77, 2004.

81) Nilsson, L., Arendash, G.W., Low, M.A., Costa, D., Roijani, A., Bales, K.R., Paul, S.M. and H. Potter. Cognitive impairment in PDAPP mice depends on ApoE and ACT-catalyzed amyloid formation. Neurobiology of Aging 25: 1153-1167, 2004.

82) Leighty, R.E., Nilsson, L.N.G., Potter, H., Costa, D.A., Low, M.A., Bales, K.R., Paul, S.M., and G.W. Arendash. Use of multimetric statistical analysis to characterize and discriminate between the performance of four Alzheimer's transgenic mouse lines differing in Aβ deposition. Behavioral Brain Research 153: 107-121, 2004.

83) Arendash, G.W., J. Lewis, R. Leighty, E. McGowan, J. Cracchiolo, M. Hutton, and M.F. Garcia. Multi-metric behavioral comparison of APPsw and P301L models for Alzheimer's Disease: Linkage of poorer cognitive performance to tau pathology in Forebrain. Brain Research 1012: 29-41, 2004

84) Arendash, G.W., Garcia, M.F., Costa, D.A., Cracchiolo, J.R., Wefes, I.M., and H. Potter. Environmental enrichment improves cognition in Alzheimer's transgenic mice despite stable β-amyloid deposition, Neuroreport 15: 1751-1754, 2004.

85) Jensen, M., Mottin, M.D., Cracchiolo, J.R., Leighty, R.E., and G.W. Arendash. Life-long immunization with human β-amyloid (1-42) protects AD transgenic mice against cognitive impairment throughout aging. Neuroscience 130: 667-684, 2005.

86) Bjugstad K.B. and G.W. Arendash. Intracerebroventricular infusions of Gp120 inhibit weight gain and induce atrophy in the hippocampus and neostriatum without affecting cognition. J. NeuroAIDS 2: 15-32, 2005.

87) Obregon, D.F., Rezai-Zadeh, K., Bai, Y., Sun, N., Hou, H., Zeng, J., Mori, T., Arendash, G.W., Shytle, D., Town, T., and J. Tan. ADAM10 activation is required for green tea-EGCG-induced α-secretase cleavage of amyloid precursor protein. J. Biol. Chem. 281: 16419-16427, 2006.

88) Ethell, D.W., Shippy, D., Cao, C., Cracchiolo, J.R., and G.W. Arendash. Adoptive transfer of Aβ-specific T-cells reverses cognitive decline and synaptic loss in Alzheimer's transgenic mice. Neurobiology of Disease 23:351-361, 2006.

89) Arendash, G.W., Schleif, W., Rezai-Zadeh, K., Jackson, E., Zacharia, L.C., Cracchiolo, J.R., Shippy, D., and J. Tan. Caffeine protects Alzheimer's mice against cognitive impairment and reduces brain Aβ production. Neuroscience 142: 941-952, 2006.

90) Suo, Z., Cox, A.P., Bartelli, N., Rasul, I, Festoff, B.W., Lefkowitz, R.J., and G.W. Arendash. A novel model specific for early Alzheimer's Disease: The G-protein coupled Receptor Kinase-5 deficient mouse. Neurobiology of Aging 28: 1873-1888, 2007.

91) Costa, D.A., Cracchiolo, J.R., Bachstetter, A.D., Hughes, T.F., Bales, K.R., Paul, S.M. Mervis, R.F., Arendash, G.W., and H. Potter. Enriched housing improves cognition in AD mice by amyloid-related and unrelated mechanisms. Neurobiology of Aging. 28: 831-844, 2007.

92) Cracchiolo, J.R., Mori, T., Bachstetter, A., Mervis, R., Nazian, S.J., Tan, J., Potter, H., and G.W. Arendash. Enhanced cognitive activity – over and above social or physical activity – is required to protect Alzheimer's mice against cognitive impairment, reduce Aβ deposition, and increase synaptic area. Neurobiology of Learning and Memory, 88: 277-294, 2007.

93) Arendash, G.W., Jensen, M.T., Salem, N., Hussein, N., Cracchiolo, J., Dickson, A., Leighty, R., and H. Potter. A diet high in omega-3 fatty acids does not improve or protect cognitive performance in Alzheimer's transgenic mice. Neuroscience 149: 286-302, 2007.

94) Leighty, R.E., Runfeldt, M.J., Berndt, D.J., Schleif, W.S., Cracchiolo J.R., Potter, H., and G.W. Arendash. Use of artificial neural networks to determine cognitive impairment and therapeutic effectiveness in Alzheimer's transgenic mice. J. Neurosci. Methods 167: 358-366, 2008.

95) Sanchez-Ramos, J., Song, S., Cao, C, and G.W. Arendash. The potential of hematopoietic growth factors for treatment of Alzheimer's disease: A mini-review. BMC Neuroscience 9 (Suppl 2);S3, 2008.

96) Mori, T., Tan, J., Arendash, G.W., Koyama, N., Nojima, Y., and T. Town. Human S100B transgenic mice have enhanced infarct expansion and greater per-infarct reactive astrocytosis after permanent focal ischemia. Stroke 39: 2114-2121, 2008.

97) Rezai-Zadeh, K., Arendash, G.W., Hou, H., Fernandez, F., Jensen, M., Runfeldt, M., Shytle, D., and J. Tan. Green tea epigallacatechin-3-gallate (EGCG) reduces β-amyloid mediated cognitive impairment and modulates tau pathology in Alzheimer transgenic mice. Brain Research 1214:177-187, 2008.

98) Cao, C., Lin, X., Zhang, C., Wahi M., Wefes, I., Arendash, G.W., and H. Potter. Mutant Aβ-sensitized dendritic cells as Alzheimer's disease vaccine. J. Neuroimmunology 200:1-10, 2008.

99) Echeverria, V., Burgess, S., Dickson, A., Arendash, G.W., and B. Citron. Raf inhibition protects cortical cells against β-amyloid toxicity. Neuroscience Letters 444:92-96, 2008.

100) Cao, C., Arendash, G.W., Dickson, A., Mamcarz, M., Lin, X., and D. W. Ethell. Aβ-specific Th2 cells are sufficient to reverse cognitive impairment, cerebral angiopathy, and pro-inflammatory profiles in Alzheimer's transgenic mice. Neurobiology of Disease 34: 63-70, 2009.

101) Sanchez-Ramos, J., Catlow, B., Rowe, A., Clearwater, C., Mamcarz, M., and G. Arendash. Effects of Environmental Enrichment and Physical Activity on Neurogenesis in Transgenic PS1/APP Mice. Brain Research 1256: 173-179, 2009.

102) Arendash, G.W., Mori, T., Mamcarz, M., Runfeldt, M., Dickson, A., Rezai-Zadeh, K., Tan, J., Citron, B., Lin, X., Cao, C., Echeverria-Moran, V., and H. Potter. Caffeine reverses cognitive impairment and decreases brain Aβ levels in aged Alzheimer's mice. Journal of Alzheimer's Disease 17: 661-680, 2009.

103) Cao, C., Cirrito, J., Lin, X., Wang, L., Verges, D., Dickson, A., Mamcarz, M., Zhang, C., Mori, T., Arendash, G., Holtzman, D., and H. Potter. Caffeine suppresses β-amyloid levels in plasma and brain of Alzheimer's transgenic mice. Journal of Alzheimer's Disease 17: 681-697, 2009.

104) Arendash, G.W., Cox, A., Mori, T., Cracchiolo, M.S., A., Hensley, K., and L. J. Roberts. Oxygen treatment triggers cognitive impairment in Alzheimer's transgenic mice. NeuroReport 20: 1087-1092, 2009.

105) Olcese, J., Mori, T., Cao, C., Mamcarz, M., Runsfeldt, M., Wang, L., and G.W. Arendash. Protection against cognitive deficits and markers of neurodegeneration by long-term self administration of melatonin in a transgenic model of Alzheimer disease. Journal of Pineal Research 47: 82-96, 2009.

106) Echeverria, V., Burgess, S., Gamble-George, J., Zeitlin, R., Lin, X., Cao, C., and G.W. Arendash. Sorafenib inhibits NF-kB, decreases iNOS and Cox-2 expression, and restores working memory in APPswe mice. Neuroscience 162: 1220-1231, 2009.

107) Sanchez-Ramos, J., Song, S., Sava, V., Catlow, B., Mori, T., Dickson, A., Lin, X., Cao, C. and G.W. Arendash. G-CSF reverses cognitive impairment in Alzheimer's mice and decreases Aβ levels in both brain and blood. Neuroscience 163: 55-72, 2009.

108) Mori, T., Nojima Y., Koyama, N., Arendash, G.W., Horikoshi-Sakuraba, Y., Tan, J., and T. Town. Increased brain inflammation precedes exacerbated cerebral amyloidosis in Tg2576 mice expressing human S100B, Glia 58: 300-314, 2010.

109) Arendash, G.W., Sanchez-Ramos. J., Mori, T., Mamcarz, M., Lin, X., Runfeldt, M., Wang, L., Zhang, G., Sava, V., Jun Tan, J., and C. Cao Electromagnetic Field Treatment Protects Against and Reverses Cognitive Impairment in Alzheimer's Mice. Journal of Alzheimer's Disease 19: 191-210, 2010.

110) Roberts L.J., Fessel J., and G. Arendash. Oxygen Therapy – Use and Abuse. Clinical Cardiology 33: 52, 2010.

111) Arendash, G.W. and C. Cao. Caffeine and coffee as therapeutics against Alzheimer's Disease. Journal of Alzheimer's Disease 20: Suppl 1:S117-126, 2010.

112) Dragicevic, N., Mamcarz, M., Zhu, Y., Buzzeo, R., Tan, J., Arendash, G.W., and Bradshaw, P.C. Mitochondrial amyloid-beta levels are associated with the extent of mitochondrial dysfunction in different brain regions and the degree of cognitive impairment in Alzheimer's transgenic mice. Journal of Alzheimer's Disease 20 Suppl 2: S535-50, 2010.

113) Casadesus, G., Arendash, G., Laferla, F., and M. McDonald. Animal models of Alzheimer's disease. International J. Alzheimer's Disease PMID: 21804934 (Epub), 2010.

114) Boyd, T., Bennett, S., Governatori, N., Runfeldt, M., Padmanabhan, J., Neame, P., Wefes, I., Sanchez-Ramos, J., Arendash G.W., and H. Potter. GM-CSF Upregulated in Rheumatoid Arthritis Reverses Cognitive Impairment and Amyloidosis in Alzheimer Mice**.** Journal of Alzheimer's Disease 21: 507-518, 2010.

115) Echeverria, V., Zeitlin R., Burgess, S., Barman, A., Thakur, G., Mamcarz, M., Wang, L., Sattelle D.B., Kirschner, D.A., Mori, T., Leblanc, R.M., Prabhakar, R., and G.W. Arendash. Cotinine reduces amyloid-β aggregation and improves memory in Alzheimer's disease mice. Journal of Alzheimer's Disease 24: 817-835, 2011.

116) Dragicevic, N., Mamcarz, M., Lin, X., Cao, C., Arendash, G.W., and P.C. Bradshaw. Melatonin treatment restores mitochondria function in Alzheimer's mice: A mitochondrial protective role of melatonin membrane receptor signaling. J. Pineal Research 51: 75-86, 2011.

117) Cao, C., Wang, L., Lin, X., Mamcarz, M., Zhang, C., Bai, G., Nong, J., Sussman, S., and G.W. Arendash. Caffeine synergizes with another coffee component to increase plasma G-CSF: Linkage to cognitive benefits in Alzheimer's Mice. Journal of Alzheimer's Disease 25: 323-335, 2011.

118) Dragicevic, N., Bradshaw, P.C., Mamcarz, M., Lin, X., Wang, L., Cao, C., and G.W. Arendash. . Long-term electromagnetic field treatment enhances brain mitochondrial function of both Alzheimer's transgenic mice and normal mice: A mechanism for electromagnetic field-induced cognitive benefit? Neuroscience 185: 135-149, 2011.

119) Zeitlin, R., Patel, S., Burgess, S., Arendash, G.W., and V. Echeverria. Caffeine induces beneficial changes in PKA signaling and JNK and ERK activities in the striatum and cortex of Alzheimer's transgenic mice. Brain Research 1417: 127-36, 2011.

120) Mori, T. and G.W. Arendash. Electromagnetic field treatment enhances neuronal activity: Linkage to cognitive benefit and therapeutic implications for Alzheimer's Disease. Journal of Alzheimer's Disease and Parkinsonism Vol. 1:2 http://dx.doi.org/10.4172/2161-0460.1000102, 2011.

121) Cao, C., Loewenstein, D., Lin, X., Zhang, C., Duara, R., Wu, Y., Bai, G., Grieg, M., Schofield, E., Ashok, R., Janini, A., Small, B., Leighty, R., Potter, H., and G.W. Arendash. High blood caffeine levels in MCI linked to lack of progression to dementia, Journal of Alzheimer's Disease 30(3): 559-572, 2012.

122) Town, T., Mori, T., Rezai-Zadeh, K., Koyama, N., Arendash, G., Haruyasu, Y., Kakudo, N., Horikoshi-Sakuraba, Y., and J. Tan. Tannic acid is a natural β-secretase inhibitor that prevents cognitive impairment and mitigates Alzheimer Disease-like pathology in transgenic mice. Journal of Biological Chemistry 287:6912-6927, 2012.

123) Arendash G.W., Mori, T., Dorsey, M., Rich Gonzalez, Naoki Tajiri, and C. Borlongan. Long-Term 918 MHz Electromagnetic Field Treatment to Very Old Alzheimer's Mice Reverses β-Amyloid Deposition, Modifies Regional Cerebral Blood Flow, & Provides Selected Cognitive Enhancement without Brain Hyperthermia. PLoS ONE http://dx.plos.org/10.1371/journal.pone.0035751, 2012.

124) Arendash, G.W. Transcranial Electromagnetic treatment (TEMT) for Alzheimer's Disease: Why it has the potential to trump Alzheimer's drug development. Journal of Alzheimer's Disease 32:243-266, 2012.

125) Dragicevic, N., Delic, V., Cao, C., Copes, N., Lin, X., Mamcarz, M., Wang, L., Arendash, G.W., and P.C. Bradshaw. Caffeine increases mitochondrial function and blocks melatonin signaling to mitochondria in Alzheimer's mice and cells. Journal of Neuropharmacology 63: 1368-1370, 2012.

126) Tajiri, N., Kellogg, S.X., Shimizu, T., Arendash, G.W., and C.V. Borlongan. Traumatic brain injury precipitates cognitive impairment and extracellular Aβ aggregation in Alzheimer's disease transgenic mice. PLoS One 8(11):378851, 2013.

127) Citro, B.A., Saykally, J.N., Cao, C., Dennis, J.S. Runfeldt, M., Arendash, G.W. Transcription factor Sp1 inhibition, memory, and cytokines in a mouse model of Alzheimer's disease. Am. J. Neurodegener Dis. 28:40-48, 2015.

128) Arendash, G.W. Review of the evidence that Transcranial Electromagnetic Treatment will be a safe and effective therapeutics against Alzheimer's Disease. Journal of Alzheimer's Disease 53:753-771, 2016.

129) Arendash, G., Cao, C., Abulaban, H., Baranowski, R., Wisniewski, G., Becerra, L., Andel, R., Lin, X, Zhang, X, Wittwer, D., Moulton, J., Arrington, J., and A. Smith. A clinical trial of transgenic electromagnetic treatment of Alzheimer's Disease: Cognitive Enhancement and Associated Changes in Cerebrospinal Fluid, Blood, and Brain Imaging. Journal of Alzheimer's Disease 71:57-82, 2019.

130) Cao, C., Abulaban, H., Baranowski, R., Wang, Y., Bai, I., Lin, X., Shen N., Zhang, X., and G. Arendash. Transcranial Electromagnetic Treatment "rebalances" blood and brain cytokine levels in Alzheimer's patients: A new mechanism for reversal of their cognitive impairment. Frontiers in Aging Neurosci. 14:829049. doi: 10.3389/fnagi.2022.829049, 2022

131) Arendash, G., Abulaban, H., Steen, S., Anel, R., Wang, Y., Bai, Y., Baranowski, R., McGarity, J., Scritsmier, L., Lin, X., Shen, N., Aljassabi, A., Li, Y., and C. Cao. Transcranial Electromagnetic Treatment stops Alzheimer's Disease cognitive decline over a 2½ year period: A Pilot Study. Medicines 9(8):42, 2022.

(132) Arendash, G., and C. Cao, Transcranial Electromagnetic Wave Treatment: A Fountain of Healthy Longevity? International J. of Molecular Sciences 24:9652, 2023.

(133) Arendash, G., Lin, X., and Cao, C. Enhanced Brain Clearance of Tau and A-beta by Transcranial Radiofrequency Wave Treatment: A Central Role of VEGF. Journal of Alzheimer's Disease 100:S223-S241, 2024.

(134) Baranowski, R., Amschler, J., Wittwer, D., and G. Arendash. Human Memory Enhancement by Transcranial Radiofrequency Wave Treatment Occurs Without Appreciably Increasing Brain Temperature. Physics and Engineering Science in Medicine. doi:10.1007/s13246-024-01508, 2025.

(135) Arendash, G. The Brain Toxin Cleansing of Sleep Achieved During Wakefulness. Journal of Clinical Medicine 14:926, 2025.

(136) Arendash, G. The Evidence That Brain Cancers Could Be Effectively Treated with In-Home Radiofrequency Waves. Cancers 17:2665, 2025.

Patents/Patent Applications (21 total):

(Click on underlined number to pull up complete patent/patent application)

U.S. Patents Granted (9):

Black Font: Filed while at USF (3) – Flagship USF patents for EM technology in "italics"
Blue Font: Filed after USF, while at NeuroEM Therapeutics (6)

Prevention and treatment of Alzheimer's disease through electromagnetic field exposure
WO US US20120065456A1 G.Arendash, C. Cao, J. Tan. University Of South Florida
Priority 2009-03-11 • Filed 2011-09-12 • Granted 2016-01-19 • Published 2012-03-15

Prevention and treatment of brain diseases and disorders related to abnormal protein aggregation through electromagnetic treatment
US US10149982B2 G. Arendash, C. Cao, J. Tan, U.S. Department of Veterans Affairs and University of South Florida. Priority 2009-03-11 • Filed 2015-12-21 • Granted 2018-12-11 • Published 2018-12-11

Electromagnetic treatment of brain and body disorders
WO US US10765879B2 **G.Arendash,** NeuroEM Therapeutics, Inc.
Priority 2013-03-11 • Filed 2014-03-11 • Granted 2020-09-08 • Published 2020-09-08

Systems for controlling power to differently loaded antenna arrays

US US11752356B2 **G. Arendash** and R. Baranowski, NeuroEM Therapeutics, Inc.
Priority 2013-03-11 • Filed 2019-02-12 • Granted 2023-09-12 • Published 2023-09-12

Immunoregulation, brain detoxification, and cognitive protection by electromagnetic treatment
US US11759650B2 **G. Arendash** and R. Baranowski. NeuroEM Therapeutics, Inc.
Priority 2013-03-11 • Filed 2020-05-01 • Granted 2023-09-19 • Published 2023-09-19

Transcranial electromagnetic treatment
US US11794028B2 **G. Arendash** and R. Baranowski. NeuroEM Therapeutics, Inc.
Priority 2014-03-11 • Filed 2020-07-22 • Granted 2023-10-24 • Published 2023-10-24

Systems for sensing proper emitter array placement
US US11813472B2 **G. Arendash** and R. Baranowski, NeuroEM Therapeutics, Inc.
Priority 2013-03-11 • Filed 2019-03-20 • Granted 2023-11-14 • Published 2023-11-14
Methods of treating cognitive impairment
WO EP US CN *RU* US11896647B2 H. Potter, **G. Arendash**, S. Bennett, T. Boyd, University of South Florida. Priority 2008-08-05 • Filed 2020-07-24 • Granted 2024-02-13 • Published 2024-02-13

Treatment of primary and metastatic brain cancers by transcranial …
US US20220111224A1 **G. Arendash**. NeuroEM Therapeutics, Inc.

Priority 2013-03-11 • Filed 2021-11-30 • Published 2022-04-14 Granted 2024-2-27

Submitted U.S. Patent Applications not yet granted (3):

Black Font: Filed while at USF (1)
Blue Font: Filed after USF, while at NeuroEM Therapeutics (2)

Transgenic animal and methods
WO US AU US20020066117A1 L. Nilsson, H. Potter, and **G. Arendash**. Univ. of South Florida. Priority 2000-07-13 • Filed 2001-07-13 • Published 2002-05-30

Brain immunoregulation and increased human life span through transcranial electromagnetic treatment. US US20220040492A1 **G. Arendash,** NeuroEM Therapeutics, Inc.
Priority 2013-03-11 • Filed 2021-10-22 • Published 2022-02-10

Increased human life span and health span through transcranial electromagnetic …
US US20230050752A1 **G.Arendash**. NeuroEM Therapeutics, Inc. Priority 2013-03-11 • Filed 2022-10-28 • Published 2023-02-16

Submitted PCT (International Patent) Applications (9):

Black Font: Filed while at USF (3)
Blue Font: Filed after USF, while at NeuroEM Therapeutics (6)

Method of treating cognitive decline and synaptic loss related to Alzheimer's Disease
WO US WO2006119352A3 D. Ethell and **G. Arendash.** Univ South Florida
Priority 2005-05-03 • Filed 2006-05-03 • Published 2007-01-11

Materials and methods for preventing or treating neurodegenerative conditions associated with A-beta peptide accumulation
WO US WO2010036813A1 V. Echeverria Moran and **G. Arendash**. Department of Veterans Affairs and University of South Florida. Priority 2008-09-24 • Filed 2009-09-24 • Published 2010-04-01

System for detecting the correct placement of an emitter arrangement
WO EP EP3962595A4 **G. Arendash** and R. Baranowski. NeuroEM Therapeutics, Inc.
Priority 2019-03-20 • Filed 2019-03-20 • Published 2023-05-10

Systems for controlling the power fed to differently loaded antenna arrays
WO EP JP DE ES ES2896648T1 **G. Arendash** and R. Baranowski. NeuroEM Therapeutics Inc
Priority 2019-02-12 • Filed 2019-02-12 • Published 2022-02-25

Immunoregulation, brain detoxification, and cognitive protection by electromagnetic treatment

WO EP JP WO2021221688A1 **G. Arendash** and R. Baranowski. NeuroEM Therapeutics, Inc. Priority 2020-05-01 • Filed 2020-05-01 • Published 2021-11-04

Brain immunoregulation through transcranial electromagnetic treatment
WO EP CN JP EP4419195A4 **G. Arendash.** NeuroEM Therapeutics, Inc.
Priority 2021-10-22 • Filed 2021-10-22 • Published 2025-06-18

Transcranial electromagnetic treatment
WO EP WO2021025735A1 **G. Arendash** and R. Baranowski. NeuroEM Therapeutics, Inc.
Priority 2019-08-08 • Filed 2020-04-23 • Published 2021-02-11

Vasoactive effects and free radical generation by beta-amyloid peptides
WO US AU WO1998020736A1 M. Mullan, F. Crawford, **G. Arendash**, H. Potter, and Z. Suo. University Of South Florida. Priority 1996-11-12 • Filed 1997-11-03 • Published 1998-05-22

Treatment of brain cancers by transcranial electromagnetic treatment
WO WO2023101661A1 **G.Arendash.** NeuroEM Therapeutics, Inc. Priority 2021-11-30 • Filed 2021-11-30 • Published 2023-06-08

Teaching at USF

Summary:

- Taught a rich array of courses in Physiology and Neuroscience from 1981 through 2005 in the then "Dept. of Biology/Dept. of Cell Biology, Microbiology, and Molecular Biology" (I became a research professor in 2005 with no formal teaching commitment)

- Primary undergraduate course taught was General/Animal Physiology, with my combination undergraduate/graduate course Principles of Neuroscience being extraordinarily popular with pre-professional students – students who made up a large percentage of the department's undergraduates students.

- Graduated 13 M.S. students and 6 Ph.D. students, including USF's first MD/Ph.D graduate

- Consistently achieved high evaluations for my teaching from students, the Faculty Advisory Committee, and Departmental chairperson

- Attained multiple awards for my teaching abilities, including two USF Teaching Incentive Program (TIP) awards

Courses Taught at USF:

APB 3190: Human Anatomy and Physiology
BSC 4933: General Physiology
PCB 4723: Animal Physiology
BSC 5845: Principles of Neuroscience
BSC 5931: Endocrinology
BSC 5931: Seminars in Neuroscience
BSC 6932: Neurobiology of Aging
BSC 6932: Seminar in Physiology and Development
BSC 6932: Free Radicals in Biology and Medicine
BSC 6932: Animal Models for Neurodegenerative Diseases
BSC 6932: Advanced Neuroscience

Teaching Awards:

USF Excellence in Undergraduate Teaching Award, 1988
USF Teaching Incentive Program (TIP) Award, 1994
USF Teaching Incentive Program (TIP) Award, 1997
USF President's Award for Faculty Excellence, 2003

Graduate Students Directed at USF

Savitha Sastry	M.S. degree in Biology, 1993
Kellye K. Daniels	M.S. degree in Biology, 1994
Gregory J. Sengstock	Ph.D. in Biology, M.D. degree USF Col. Of Med., 1994
Kimberly J. Bjustad	M.A. degree in Psychology, 1994
Debra J. Socci	Ph.D. degree in Biology, 1995
Candice A. Sack	M.S. degree in Biology, 1996
Kimberly J. Bjugstad	Ph.D. degree in Psychology, 1998
George Su	M.S. degree in Biology, 1998
Patrick Pompl	M.S. degree in Biology, 1998
David King	Ph.D. degree in Biology, 2000
Leigh Ann Austin	M.S. degree in Biology, 2002
Ralph Leighty	M.S. degree in Biology, 2003
Marcos Garcia	M.S. degree in Biology, 2003
April Cox	M.S. degree in Biology, 2005
Daniel Shippy	M.S. degree in Biology, 2005
Jennifer Cracchiolo	M.S. degree in Biology, 2005
William Schleif	M.S. degree in Biology, 2005
Maren Jensen	Ph.D. degree in Biology, 2006
Ralph Leighty	Ph.D. degree in Biology, 2009