

Thomas D. Parsons, V.M.D., Ph.D.

University of Pennsylvania

Assistant Professor - Clinical Studies - New Bolton Center
School of Veterinary Medicine, University of Pennsylvania

Assistant Professor
Secondary Appointment
Department of Otorhinolaryngology: Head and Neck Surgery
School of Medicine, University of Pennsylvania

Hometown

Hadley , Massachusetts

College

Amherst College, Amherst, MA, B.A. Biology & Neuroscience, Magna Cum Laude, 1982

Medical School

University of Pennsylvania, Philadelphia, PA, V.M.D., 1986

Graduate Studies

University of Pennsylvania, Ph.D., Neuroscience, 1989

Training and Fellowship Appointments

1982-1988 Pre-Doctoral Fellow, Veterinary Medical Scientist Training Program,
University of Pennsylvania

1988-1989 Post-Doctoral Fellow, Pennsylvania Muscle Institute
School of Medicine , University of Pennsylvania, Supervisor: Brian M. Salzberg
1988-1989 Resident Visitor, Solid State and Quantum Physics Research Dept.,
AT&T Bell Labs

1989-1992 Research Associate, Anatomy and Cell Biology,
School of Medicine, Emory University, Supervisor: H. Criss Hartzell

1993-1995 Research Associate, Abteilung Molekulare Zellforschung
Max-Planck-Institut f. Medizinische Forschung, Heidelberg , Germany
Supervisors: Wolfhard Almers & Bert Sakmann

Year Appointed to Penn Faculty

CS-NBC - 1996 / ORL-HN - 2000

Areas of Special Interest

Neuroscience with a special emphasis on synaptic mechanisms in the auditory system

Swine health and well-being

Memberships in Professional and Scientific Societies:

American Association for Advancement of Science

American Association of Swine Veterinarians

Association for Research Otolaryngology

Biophysical Society

Society of General Physiologists

Society for Neuroscience

Centers, Institutes, and Graduate Group Membership:

1996 to date Center for Animal Health and Productivity - School of Veterinary Medicine

1997 to date Institute for Neurological Studies - University of Pennsylvania

1998 to date Graduate Group in the Neurosciences - Biomedical Studies
1999 to date Center for Animal Transgenesis and Germ Cell Research - School of Veterinary Medicine
2000 to date Marie Lowe Cancer Center - School of Veterinary Medicine

Editorial/Advisory Positions

1999-2002 Editorial Board - Swine Health and Productivity
Ad Hoc Reviewer for:
Journal of Physiology
EMBO Journal
Cell Calcium
Swine Health and Productivity
Clinical Diagnostics and Laboratory Investigations
European Journal of Neuroscience
Nature Cell Biology
Biophysical Journal
Journal of the American Veterinary Medical Association
Journal of Neurophysiology
Journal of the Association of Research Otolaryngology
Journal of Neuroscience
Journal of Environmental Quality
NIH Study Section: Integrative Function and Cognitive Neuroscience #6

Bibliography :

Master and Doctoral Thesis Title :

Parsons, T.D. The role of extracellular cations in the modulation of nerve conduction velocity. Amherst College Thesis (1982).

Parsons, T.D. Optical monitoring of the electrical activity of neuronal ensembles constructed from identified invertebrate cells. University of Pennsylvania Thesis (1989).

Publications: Refereed Journals :

Basic Science

Parsons, T.D. and R.H. Chow. Neuritic outgrowth in primary cell culture of neurons from the squid, *Loligo pealei*. *Neurosci. Lett.* 97:23-28 (1989).

Parsons, T.D., D. Kleinfeld, G.F. Raccaia, and B.M. Salzberg. Optical recording of the electrical activity of synaptically interacting *Aplysia* neurons in culture using potentiometric probes. *Biophys. J.* 56:213-221 (1989).

Kleinfeld, D., **T.D. Parsons**, F. Raccaia-Behling, B.M. Salzberg, and A.L. Obaid. Foreign connections are formed in vitro between *Aplysia* intercuron L10 and its in vivo followers and non-followers. *J. Exp. Biol.* 154:237-255 (1990).

Parsons, T.D., R.E. White, A. Lagrutta, and H.C. Hartzell. Regulation of Ca²⁺ current in frog cardiomyocytes by 5'-guanylylimidodiphosphate and acetylcholine. *J. Physiol.* 432:593-620 (1991).

Parsons, T.D., B.M. Salzberg, F. Raccaia-Behling, A.L. Obaid, and D. Kleinfeld. Long-term optical recording of patterns of electrical activity in ensembles of cultured *Aplysia* neurons. *J. Neurophysiol* 66:316-33 (1991).

Parsons, T.D., A.L. Obaid, and B.M. Salzberg. Aminoglycoside antibiotics inhibit Ca²⁺ entry into the nerve terminals of the neurohypophysis. *J. Gen. Physiol.* 99:1-13 (1992).

Parsons, T.D. and H.C. Hartzell. Regulation of Ca²⁺ current in frog cardiomyocytes by guanosine 5'-triphosphate analogs and isoproterenol. 102:525-549. *J. Gen. Physiol.* (1993).

Parsons, T.D., D. Lenzi, W. Almers, and W.M. Roberts. Calcium-triggered exocytosis and endocytosis in an isolated presynaptic cell: Capacitance measurements in saccular hair cells. 13:875-883. *Neuron.* (1994).

Parsons, T.D., J.C. Coorsen, H. Horstmann, and W. Almers. Docked granules, the exocytic burst and the need for ATP hydrolysis in endocrine cells. *Neuron.* 15:1085-1096 (1995).

Parsons, T.D., G.C.R. Ellis-Davies, J.H. Kaplan and W. Almers. Millisecond studies of calcium-

dependent exocytosis in pituitary melanotrophs: Comparison of the photolabile calcium chelators nitrophenyl-EGTA and DM-nitrophen. *Cell Calcium* 19:185-192. (1996). Spassova, M.A., M.D. Eisen, J.C. Saunders, and **T.D. Parsons**. Cochlear hair cell exocytosis is mediated by DHP-sensitive calcium channel. *J. Physiol* 353:35-44 (2001).

Parsons, T.D. and P. Sterling. Synaptic ribbon: a conveyor belt or safety belt? *Neuron* 37:379-382 (2003).

Elmariah, S.B., M.A. Crumling, **T.D. Parsons**, R. Balice-Gordon. Postsynaptic TrkB-mediated signaling modulates excitatory and inhibitory neurotransmitter receptor clustering at hippocampal synapses. *J. Neurosci.* 10:2380-93 (2004).

Eisen, M.D, M.A. Spassova, and **T.D. Parsons**. Large releasable pool of synaptic vesicles in chick cochlear hair. *J. Neurophysiol.* 91:2422-8 (2004).

Spassova, M., M. Avissar, A.C. Furman, M.A. Crumling, J.C. Saunders & **T.D. Parsons**.

Evidence that rapid replenishment of the synaptic ribbon with vesicles mediates recovery from short-term adaptation at the hair cell afferent synapse. *J.Assc.Res.Otolaryn.* 5:376-390 (2004).

Clinical Science

Parsons, T.D., G. Smith, and D.T. Galligan. Economics of porcine parvovirus vaccination assessed by decision analysis. *J. Prev. Vet. Med.* 4:199 (1986).

Parsons, T.D., P.M. Pitcher, and C. Johnstone. Economic analysis of an epizootic outbreak of pseudorabies and subsequent production following the institution of a vaccination program in a Pennsylvania swine herd. *J. Am. Vet. Med.* 197:188-191 (1990).

Gardner, I.A., T.E. Carpenter, L. Leontidis, and **T.D. Parsons**. Financial evaluation of vaccination and testing alternatives for control of parvovirus-induced reproductive failure in swine. *J. Am. Vet. Med.* 208:863-869 (1996).

Hassinger, W.J., K.A. Monahan, K.A. T.L. Scanlon, and **T.D. Parsons**. Nutrient management practices among swine operations of various sizes. *J. Am.Vet. Med. Assc.* 217:1526-1535 (2000).

Zayas-Cruz, E. P.M. Pitcher and **T.D. Parsons**. Motivating and monitoring minimal crossfostering management in the farrowing house. *J. Swine Health and Production* 8:269-272 (2000).

Publications: Book Chapters and Reviews :

Parsons, T.D., J.C. Coorsen, H. Horstmann, F.W. Tse, A.K. Lee and W. Almers. The last seconds in the life of a secretory granule. *Cold Spring Harbor Quantitative Biology Symposia* . 64:74-85 (1996).

Serpell, J.A. and **T.D. Parsons**. Food Animal Husbandry and the New Millennium. *J. Appl. Anim. Wel. Sci.* 4:1-6 (2001)

Fuchs, P.A. and **T.D. Parsons**. Synaptic physiology of the hair cell. In *Springer Handbook of Auditory Research Series: The Hair Cell*. Edited by R.A. Eatock, R.R. Fay and A.N. Popper. (*in press*)