

## Andrew S. French - Publications

### *Refereed papers published or in press:*

179. Fabian-Fine R., Anderson C., Roush M., Johnson, J.A.G. Liu H., French A.S. and Torkkeli P.H. (2017) The distribution of cholinergic neurons, and their co-localization with FMRFamide in central and peripheral neurons of the spider *Cupiennius salei*. *Cell and Tissue Research* **370**: 71-88. doi: 10.1007/s00441-017-2652-6.
178. Saari, P., French, A.S., Torkkeli, P.H., Liu, H., Immonen, E.V. and Frolov, R. (2017) Distinct roles of light-activated channels TRP and TRPL in photoreceptors of *Periplaneta americana*. *Journal of General Physiology* **149**: 455-464. doi: 10.1085/jgp.201611737.
177. Immonen, E.V., French, A.S., Torkkeli, P.H. Liu, H., Vähäsöyrinki, M. and Frolov, R.V. (2017) EAG channels expressed in microvillar photoreceptors are unsuited to diurnal vision. *Journal of Physiology* **595**: 5465-5479. doi: 10.1113/JP273612.
176. Liu, H., French, A.S. and Torkkeli, P.H. (2017) Expression of Cys-loop receptor subunits and acetylcholine binding protein in the mechanosensory neurons, glial cells and muscle of the spider *Cupiennius salei*. *Journal of Comparative Neurology* **525**: 1139-1154. doi: 10.1002/cne.24122.
175. French, A.S., Immonen, E.V. and Frolov, R.V. (2016) Static and dynamic adaptation of insect photoreceptor responses to naturalistic stimuli. *Frontiers in Physiology* **7**: 477. doi: 10.3389/fphys.2016.00477.
174. Pfeiffer, K. and French, A.S. (2015) Naturalistic stimulation changes the dynamic response of action potential encoding in a mechanoreceptor. *Frontiers in Physiology* **6**: 303. doi: 10.3389/fphys.2015.00303.
173. Torkkeli, P.H., Liu, H. and French, A.S. (2015) Transcriptome analysis of the central and peripheral nervous systems of the spider *Cupiennius salei* reveals multiple putative Cys-loop ligand gated ion channel subunits and an acetylcholine binding protein. *PLoS ONE*. doi: 10.1371/journal.pone.0138068.
172. French, A.S., Meisner, S., Liu, H., Weckström, M. and Torkkeli, P.H. (2015) Transcriptome analysis and RNA interference of cockroach phototransduction indicate three opsins and suggest a major role for TRPL channels. *Frontiers in Physiology* **6**: 207. doi: 10.3389/fphys.2015.00207.
171. French, A.S. and Torkkeli, P.H. (2015) Some recent advances in spider sensory physiology. *Physiology News* **99**: 34-37.

170. Ignatova, I., French, A.S., Frolov, R. and Weckström, M. (2014) Equilibrating errors: reliable estimation of information transmission rates in biological systems. *Biological Cybernetics* **108**: 305-320.
169. French, A.S., Li, A.W., Meisner, S. and Torkkeli, P.H. (2014) Upstream open reading frames and Kozak regions of a set of assembled transcriptome sequences from the spider *Cupiennius salei*. *Gene* **539**: 203–208.
168. French, A.S., Meisner, S., Su, C-Y and Torkkeli, P.H. (2014) CO<sub>2</sub> and fruit odor transduction in *Drosophila* olfactory neurons. What controls their dynamic properties? *PLoS ONE* **9**: e86347.
167. French, A.S. (2012) Transcriptome walking: A laboratory-oriented GUI-based approach to mRNA identification from deep-sequenced data. *BMC Research Notes* **5**:673-680
166. Torkkeli, P.H., Meisner, S., Pfeiffer, K. and French, A.S. (2012) GABA and glutamate receptors have different effects on excitability and are differentially regulated by calcium in spider mechanosensory neurons. *European Journal of Neuroscience* **36**: 3602-3614.
165. Schmitz, J., Höger, U., Torkkeli, P.H. and French, A.S. (2012) Calcium buffering and clearance in spider mechanosensory neurons. *Journal of Comparative Physiology A* **198**: 477–483.
164. Pfeiffer, K., Torkkeli, P.H. and French, A.S. (2012) Activation of GABA<sub>A</sub> receptors modulates all stages of mechanoreception in spider mechanosensory neurons. *Journal of Neurophysiology* **107**:196-204.
163. French, A.S. and Pfeiffer, K. (2011) Measuring entropy in continuous and digitally filtered neural signals. *Journal of Neuroscience Methods* **196**: 81–87.
162. French, A.S., Torkkeli, P.H. and Schuckel, J. (2011) Dynamic characterization of *Drosophila* antennal olfactory neurons indicates multiple opponent signaling pathways in odor discrimination. *Journal of Neuroscience* **31**: 861-869.
161. Höger, U., Torkkeli, P.H. and French, A.S. (2010) Feedback modulation of transduction by calcium in a spider mechanoreceptor. *European Journal of Neuroscience* **32**: 1473-1479.
160. Pfeiffer, K. and French, A.S. (2009) GABAergic excitation of spider mechanoreceptors increases information capacity by increasing entropy rather than decreasing jitter. *Journal of Neuroscience* **29**: 10989-10994.

159. Schuckel, J., Torkkeli, P.H. and French, A.S. (2009) Two interacting olfactory transduction mechanisms have linked polarities and dynamics in *Drosophila melanogaster* antennal basiconic sensilla neurons. *Journal of Neurophysiology* **102**: 214-223.
158. French, A.S. (2009) The systems analysis approach to mechanosensory coding. *Biological Cybernetics* **100**: 417-426.
157. Pfeiffer, K., Panek, I., Höger, U., French, A.S. and Torkkeli, P.H. (2009) Random stimulation of spider mechanosensory neurons reveals long-lasting excitation by GABA and muscimol. *Journal of Neurophysiology* **101**: 54-66.
156. Höger, U., Meisner, S., Torkkeli, P.H. and French, A.S. (2008) Regional distribution of calcium elevation during sensory transduction in spider mechanoreceptor neurons *Neuroscience Research* **62**: 278-285.
155. Schuckel, J. and French, A.S. (2008) A digital sequence method of dynamic olfactory characterization. *Journal of Neuroscience Methods* **171**: 98-103.
154. Schuckel, J., Meisner, S., Torkkeli, P.H. and French, A.S. (2008) Dynamic properties of *Drosophila* olfactory electroantennograms. *Journal of Comparative Physiology A* **194**: 483-489.
153. Panek, I., Höger, U., French, A.S. and Torkkeli, P.H. (2008) Contributions of voltage- and Ca<sup>2+</sup>-activated conductances to GABA induced depolarization in spider mechanosensory neurons. *Journal of Neurophysiology* **99**: 1596-1606.
152. French, A.S. and Torkkeli, P.H. (2008) The power law of sensory adaptation: simulation by a simple model of excitability in spider mechanoreceptor neurons. *Annals of Biomedical Engineering* **36**: 153-161.
151. Höger, U., Torkkeli, P.H. and French, A.S. (2007) Ratiometric calcium concentration estimation by LED excitation during mechanotransduction in single sensory neurons. *Journal of Neuroscience Methods* **164**: 255-260.
150. French, A.S. and Meisner, S. (2007) A new method for wide frequency range dynamic olfactory stimulation and characterization. *Chemical Senses* **32**: 681-688.
149. Mitsis, G.D., French, A.S., Höger, U., Courellis, S. and Marmarelis, V.Z. (2007) Principal dynamic mode analysis of action potential firing in a spider mechanoreceptor. *Biological Cybernetics* **96**: 113-127.

148. French, A.S., Panek, I. and Torkkeli, P.H. (2006) Shunting versus inactivation: simulation of GABAergic inhibition in spider mechanoreceptors suggests that either is sufficient. *Neuroscience Research* **55**: 189-196.
147. Widmer A., Panek I. Höger U., Meisner S., French A.S. and Torkkeli P.H. (2006) Acetylcholine receptors in spider peripheral mechanosensilla. *Journal of Comparative Physiology A* **192**: 85-95.
146. Höger U., Torkkeli P.H. and French A.S. (2005) Calcium concentration changes during sensory transduction in spider mechanoreceptor neurons. *European Journal of Neuroscience* **22**: 3171-3178.
145. Widmer A., Höger U., Meisner S., French A.S. and Torkkeli P.H. (2005) Spider peripheral mechanosensory neurons are directly innervated and modulated by octopaminergic efferents. *Journal of Neuroscience* **25**: 1588-1598.
144. Höger, U. and French, A.S. (2005) Slow adaptation in spider mechanoreceptor neurons. *Journal of Comparative Physiology A* **191**: 403-411.
143. Justus, K.A., Cardé, R.T. and French, A.S. (2005) Dynamic properties of antennal responses to pheromone in two moth species. *Journal of Neurophysiology* **93**: 2233-2239.
142. Gingl, E., French, A.S., Panek, I., Meisner, S. and Torkkeli, P.H. (2004) Dendritic excitability and localization of GABA mediated inhibition in spider mechanoreceptor neurons. *European Journal of Neuroscience* **20**: 59-65.
141. French, A.S. and Torkkeli, P.H. (2004) Mechanotransduction in spider slit sensilla. *Canadian Journal of Physiology and Pharmacology* **82**: 541-548.
140. Niven, J.E., Vähäsöyrinki, M., Juusola, M. and French, A.S. (2004) Interactions between light induced currents, voltage-gated currents and input signal properties in *Drosophila* photoreceptors. *Journal of Neurophysiology* **91**: 2696-2706.
139. Juusola, M., Niven, J.E. and French, A.S. (2003) *Shaker* K<sup>+</sup> channels contribute an early nonlinear amplification to the light response in *Drosophila* photoreceptors. *Journal of Neurophysiology* **90**: 2014-2021.
138. Gingl, E. and French, A.S. (2003) Active signal conduction through the sensory dendrite of a spider mechanoreceptor neuron. *Journal of Neuroscience* **23**: 6096-6101.
137. French, A.S., Höger, U., Sekizawa, S.-i. and Torkkeli, P.H. (2003) A context-free data compression approach to measuring information transmission by action potentials. *BioSystems* **69**: 55-61.

136. Höger, U. and French, A.S. (2002) Extracellular acid increases the open probability of transduction channels in spider mechanoreceptors. *European Journal of Neuroscience* **16**: 2311-2316.
135. French, A.S., Torkkeli, P.H. and Seyfarth, E.-A. (2002) From stress and strain to spikes: mechanotransduction in spider slit sensilla. *Journal of Comparative Physiology A* **188**: 739-752.
134. French, A.S., Dick, S.H. and Rasmusson, D.D. (2002) Postsynaptic dorsal column and cuneate correlations in the raccoon: a re-evaluation by parallel cascade analysis. *Journal of Neurophysiology* **88**: 3372-3376.
133. Panek, I., French A.S., Seyfarth, E.-A., Sekizawa, S.-i. and Torkkeli, P.H. (2002) Peripheral GABAergic inhibition of spider mechanosensory afferents. *European Journal of Neuroscience* **16**: 96-104.
132. Torkkeli, P.H. and French, A.S. (2002) Simulation of different firing patterns in paired spider mechanoreceptor neurons: The role of Na<sup>+</sup> channel inactivation. *Journal of Neurophysiology* **87**: 1363-1368.
131. Dick, S.H., French, A.S. and Rasmusson, D.D. (2001) Post-synaptic dorsal column and cuneate neurons in raccoon: comparison of response properties and cross-correlation analysis. *Brain Research* **914**: 134-148.
130. French, A.S., Höger, U., Sekizawa, S.-i. and Torkkeli, P.H. (2001) Frequency response functions and information capacities of paired spider mechanoreceptor neurons. *Biological Cybernetics* **85**: 293-300.
129. Torkkeli, P.H., Sekizawa, S.-i. and French, A.S. (2001) Inactivation of voltage-activated Na<sup>+</sup> currents contributes to different adaptation properties of paired mechanosensory neurons. *Journal of Neurophysiology* **85**: 1595-1602.
128. French, A.S., Sekizawa, S.-i., Höger, U. and Torkkeli, P.H. (2001) Predicting the responses of mechanoreceptor neurons to physiological inputs by nonlinear system identification. *Annals of Biomedical Engineering* **29**: 187-194.
127. Sekizawa, S.-i., French, A.S. and Torkkeli, P.H. (2000) Low-voltage activated calcium current does not regulate the firing behavior in paired mechanosensory neurons with different adaptation properties. *Journal of Neurophysiology* **83**: 746-753.

126. Shi, C., Ryan, J.S., French, A.S., Cocal-Prados, M. and Kelly, M.E.M. (1999) Hypoosmotically activated chloride channels in cultured rabbit non-pigmented ciliary epithelial cells. *Journal of Physiology* **521**: 57-67.
125. Höger, U. and French, A.S. (1999) Temperature sensitivity of transduction and action potential conduction in a spider mechanoreceptor. *Pflügers Archiv* **438**: 837-842.
124. Torkkeli, P.H., and French, A.S. (1999) Primary culture of antennal mechanoreceptor neurons of *Manduca sexta*. *Cell and Tissue Research* **297**: 301-309.
123. Höger, U. and French, A.S. (1999) Estimated single-channel conductance of mechanically-activated channels in a spider mechanoreceptor. *Brain Research* **826**: 230-235.
122. Marmarelis, V.Z., Juusola, M. and French, A.S. (1999) Principal dynamic mode analysis of nonlinear transduction in a spider mechanoreceptor. *Annals of Biomedical Engineering* **27**: 391-402.
121. Sekizawa, S.-i., French, A.S., Höger, U. and Torkkeli, P.H. (1999) Voltage-activated potassium outward currents in two types of spider mechanoreceptor neurons. *Journal of Neurophysiology* **81**: 2937-2944.
120. Amat, C, Lapied, B., French, A.S. and Hue, B. (1998) Na<sup>+</sup>-Dependent neuritic spikes initiate Ca<sup>2+</sup>-dependent somatic plateau action potentials in insect dorsal paired median neurons. *Journal of Neurophysiology* **80**: 2718-2726.
119. Juusola, M. and French, A.S. (1998) Adaptation properties of two types of sensory neurons in a spider mechanoreceptor organ. *Journal of Neurophysiology* **80**: 2781-2784.
118. French, A.S. and Torkkeli, P.H. (1998) Information transmission at 500 bits/s by action potentials in a mechanosensory neuron of the cockroach. *Neuroscience Letters* **243**: 113-116.
117. Korenberg, M.J., Juusola, M. and French, A.S. (1998) Two methods for calculating the responses of photoreceptors to moving objects. *Annals of Biomedical Engineering* **26**: 308-314.
116. Höger, U., Torkkeli, P.H., Seyfarth, E.-A. and French, A.S. (1997) Ionic selectivity of mechanically activated channels in spider mechanoreceptor neurons. *Journal of Neurophysiology* **78**: 2079-2085.
115. Juusola, M. and French, A.S. (1997) The efficiency of sensory information coding by mechanoreceptor neurons. *Neuron* **18**: 959-968.

114. Ridge, F.P.G., Duszyk, M. and French, A.S. (1997) A large conductance  $\text{Ca}^{2+}$ -activated  $\text{K}^{+}$  channel in a human lung epithelial cell line (A549). *Biochimica et Biophysica Acta* **1327**: 249-258.
113. Ho, M.W.Y., Shears, S.B., Bruzik, K.S., Duszyk, M. and French, A.S. (1997)  $\text{Ins}(3,4,5,6)\text{P}_4$  specifically inhibits a receptor-mediated  $\text{Ca}^{2+}$ -dependent  $\text{Cl}^{-}$  current in CFPAC-1 cells. *American Journal of Physiology: Cell Physiology* **272**: C1160-1168.
112. Juusola, M. and French, A.S. (1997) Visual acuity for moving objects in first- and second-order neurons of the fly compound eye. *Journal of Neurophysiology* **77**:1487-1495.
111. Juusola, M., Seyfarth, E.-A. and French, A.S. (1997) Rapid coating of glass-capillary microelectrodes for single-electrode voltage-clamp. *Journal of Neuroscience Methods* **71**: 199 - 204.
110. Sanders, E.J., Torkkeli, P.H. and French, A.S. (1997) Patterns of cell death during gastrulation in the chick and mouse embryos. *Anatomy and Embryology* **195**: 147-154.
109. Juusola, M., French, A.S., Uusitalo, R.O. and Weckström, M.T. (1996) Information processing by graded-potential transmission through tonically active synapses. *Trends in Neurosciences* **19**: 292-297.
108. Torkkeli, P.H. and French, A.S. (1995) Slowly inactivating outward currents in a cuticular mechanoreceptor neuron of the cockroach (*Periplaneta americana*). *Journal of Neurophysiology* **74**: 1200-1211.
107. Juusola, M. and French, A.S. (1995) Transduction and adaptation in spider slit sense organ mechanoreceptors. *Journal of Neurophysiology* **74**: 2513-2523.
106. Juusola, M., Weckström, M.T., Uusitalo, R.O., Korenberg, M.J. and French, A.S. (1995) Nonlinear models of the first synapse in the light-adapted fly retina. *Journal of Neurophysiology* **74**: 2538-2547.
105. French, A.S. and Marmarelis, V.Z. (1995) Nonlinear neuronal mode analysis of action potential encoding in the cockroach tactile spine neuron. *Biological Cybernetics* **73**: 425-430.
104. Seyfarth, E.-A., Sanders, E.J. and French, A.S. (1995) Sodium channel distribution in a spider mechanosensory organ. *Brain Research* **683**: 93-101.
103. Juusola, M. and French, A.S. (1995) Recording from cuticular mechanoreceptors during mechanical stimulation. *Pflügers Archiv* **431**: 125-128.

102. Duszyk, M., Liu, D., Kamosinska, B., French, A.S. and Man, S.F.P. (1995) Characterization and regulation of a chloride channel from bovine tracheal epithelium. *Journal of Physiology* **489**: 81-93.
101. Liu, D., Duszyk, M., French, A.S. and Man, S.F.P. (1995) Evidence that pH-titratable groups control the activity of a large epithelial chloride channel. *Biochemical and Biophysical Research Communications* **215**: 355-360.
100. Weckström, M., Juusola, M., Uusitalo, R. and French, A.S. (1995) Fast-acting compressive and facilitatory nonlinearities in light-adapted fly photoreceptors. *Annals of Biomedical Engineering* **23**: 70-77.
99. Torkkeli, P.H. and French, A.S. (1994) Characterization of a transient outward current in a rapidly adapting insect mechanosensory neuron. *Pflügers Archiv* **429**: 72-78.
98. Juusola, M., Seyfarth, E.-A. and French, A.S. (1994) The sodium-dependent receptor current in a new mechanoreceptor preparation. *Journal of Neurophysiology* **72**: 3026-3028.
97. French, A.S. and Torkkeli, P.H. (1994) The time course of sensory adaptation in the cockroach tactile spine. *Neuroscience Letters* **178**: 147-150.
96. French, A.S. and Patrick, S.K. (1994) A nonlinear model of step responses in the cockroach tactile spine neuron. *Biological Cybernetics* **70**: 435-441.
95. Ho, M.W.Y., Duszyk, M. and French, A.S. (1994) Evidence that channels below 1 pS cause the volume-sensitive chloride conductance in T84 cells. *Biochimica et Biophysica Acta* **1191**: 151-156.
94. French, A.S. and Torkkeli, P.H. (1994) The basis of rapid adaptation in mechanoreceptors. *News in Physiological Sciences* **9**: 158-161.
93. Seyfarth, E.-A. and French, A.S. (1994) Intracellular characterization of identified sensory cells in a new spider mechanoreceptor preparation. *Journal of Neurophysiology* **71**: 1422-1427.
92. French, A.S., Klimaszewski, A.R. and Stockbridge, L.L. (1993) The morphology of the sensory neuron in the cockroach femoral tactile spine. *Journal of Neurophysiology* **69**: 669-673.
91. Man, S.F.P., Duszyk, M. and French, A.S. (1993) Ion channels in human airway epithelial cells. *Sapporo Medical Journal* **62**: 297-303.
90. Duszyk, M., French, A.S. and Man, S.F.P. (1993) Halide permeation through three types of epithelial anion channels after reconstitution into giant liposomes. *European Biophysical Journal* **22**: 5-11.

89. French, A.S. (1993) The cockroach tactile spine. The 16th. Sarrazin Lecture of the Canadian Physiological Society. *Physiology Canada* **24**: 30-45.
88. French, A.S., Sanders, E.J., Duszyk, E., Prasad, S., Torkkeli, P.H., Haskins, J. and Murphy, R.A. (1993) Immunocytochemical localization of sodium channels in an insect central nervous system using a site-directed antibody. *Journal of Neurobiology* **24**: 939-948.
87. Sanders, E.J., Varedi, M. and French, A.S. (1993) Cell proliferation in the gastrulating chick embryo: a study using BrdU incorporation and PCNA localization. *Development* **118**: 389-399.
86. French, A.S., Korenberg, M.J., Järvillehto, M., Kouvalainen, E., Juusola, M. and Weckström, M. (1993) The dynamic nonlinear behavior of fly photoreceptors evoked by a wide range of light intensities. *Biophysical Journal* **65**: 832-839.
85. Torkkeli, P.H. and French, A.S. (1993) Mapping extracellular excitability in an insect mechanoreceptor neuron. *Brain Research* **632**: 317-320.
84. Cai T.-D., Duszyk, M., French, A.S. and Man, S.F.P. (1993) Voltage-dependent whole-cell currents in human nasal airway epithelial cells. *Chinese Journal of Physiological Sciences* **9**: 322-330.
83. French, A.S. (1992) Mechanotransduction. *Annual Review of Physiology* **54**: 135-152.
82. Duszyk, M., French, A.S., and Man, S.F.P. (1992) Noise analysis and single-channel observations of 4 pS chloride channels in human airway epithelia. *Biophysical Journal* **61**: 583-587.
81. Wilk-Blaszczak, M.A., French, A.S. and Man, S.F.P. (1992) Halide permeation through 10\_pS and 20\_pS anion channels in human airway epithelial cells. *Biochimica et Biophysica Acta* **1104**: 160-166.
80. Wilk-Blaszczak, M.A., French, A.S. and Man, S.F.P. (1992) 5\_pS anion channels in human airway epithelial cells. *Biomedical Research* **13**: 143-148.
79. Pece, A.E.C. and French, A.S. (1992) Sublinear summation of responses in locust photoreceptors. *Journal of Comparative Physiology A* **170**: 729-738.
78. Zhang, B.G., Torkkeli, P.H. and French, A.S. (1992) Octopamine selectively modifies the slow component of sensory adaptation in an insect mechanoreceptor. *Brain Research* **591**: 351-355.
77. Basarsky, T.A. and French, A.S. (1991) Intracellular measurements from a rapidly adapting sensory neuron. *Journal of Neurophysiology* **65**: 49-56.
76. Duszyk, M., French, A.S. and Man, S.F.P. (1991) Cation channels in normal and cystic fibrosis human airway epithelial cells. *Biomedical Research* **12**: 17-23.

75. Stockbridge, L.L., French, A.S. and Man, S.F.P. (1991) Subconductances in calcium-activated potassium channels from canine airway smooth muscle. *Biochimica et Biophysica Acta* **1064**: 212-218.
74. Duszyk, M. and French, A.S. (1991) An analytical model of ionic movements in airway epithelial cells. *Journal of Theoretical Biology* **151**: 231-247.
73. Stockbridge, L.L., Torkkeli, P.H. and French, A.S. (1991) Intracellular nonlinear frequency response measurements in the cockroach tactile spine neuron. *Biological Cybernetics* **65**: 181-187.
72. French, A.S. and Korenberg, M.J. (1991) Dissection of a nonlinear cascade model for sensory encoding. *Annals of Biomedical Engineering* **19**: 473-484.
71. Duszyk, M., French, A.S., Man, S.F.P. and Becker, A.B. (1991) An inwardly rectifying chloride channel in ragweed-sensitized canine tracheal epithelial cells. *European Biophysics Journal* **20**: 65-69.
70. Stockbridge, L.L. and French, A.S. (1991) The morphological basis of intracellular measurements in the cockroach tactile spine neuron. *Journal of Comparative Physiology A* **169**: 471-477.
69. Ramirez, J.-M. and French, A.S. (1990) Phentolamine selectively affects the fast sodium component of sensory adaptation in an insect mechanoreceptor. *Journal of Neurobiology* **21**: 893-899.
68. Stockbridge, L.L., French, A.S. and Sanders, E.J. (1990) Dissociation and culture of mechanosensory neurons for patch clamp analysis. *Brain Research* **523**: 161-166.
67. Duszyk, M., French, A.S. and Man, S.F.P. (1990) The 20 pS chloride channel of the human airway epithelium. *Biophysical Journal* **57**: 223-230.
66. Pece, A.E.C., French, A.S., Korenberg, M.J. and Kuster, J.E. (1990) Nonlinear mechanisms for gain adaptation in locust photoreceptors. *Biophysical Journal* **57**: 733-743.
65. Vaughan, P. and French, A.S. (1989) Non-ligand-gated anion channels in muscles and epithelia. *Progress in Biophysics and Molecular Biology* **54**: 59-79.
64. French, A.S. and Korenberg, M.J. (1989) A nonlinear cascade model of action potential encoding in an insect sensory neuron. *Biophysical Journal* **55**: 655-661.

63. Pece, A.E.C. and French, A.S. (1989) Single photon responses in locust photoreceptors: the effects of stimulus location on amplitude and time-course. *Journal of Comparative Physiology A* **164**: 365-375.
62. Stockbridge, L.L. and French, A.S. (1989) Characterization of a calcium-activated potassium channel in human fibroblasts. *Canadian Journal of Physiology and Pharmacology* **67**: 1300-1307.
61. French, A.S. (1989) Two components of rapid sensory adaptation in a cockroach mechanoreceptor neuron. *Journal of Neurophysiology* **62**: 768-777.
60. French, A.S. (1989) Ouabain selectively affects the slow component of sensory adaptation in an insect mechanoreceptor. *Brain Research* **504**: 112-114.
59. Duszyk, M., French, A.S. and Man, S.F.P. (1989) Cystic fibrosis affects chloride and sodium channels in human airway epithelia. *Canadian Journal of Physiology and Pharmacology* **67**: 1362-1365.
58. French, A.S. and Stockbridge, L.L. (1988) Potassium channels in human and avian fibroblasts. *Proceedings of the Royal Society of London B* **232**: 395-412.
57. Korenberg, M.J., French, A.S. and Voo, S. (1988) White-noise analysis of nonlinear behavior in an insect sensory neuron: kernel and cascade approaches. *Biological Cybernetics* **58**: 313-320.
56. French, A.S. (1988) Transduction mechanisms of mechanosensilla. *Annual Review of Entomology* **33**: 39-58.
55. Stockbridge, L.L. and French, A.S. (1988) Stretch-activated cation channels in human fibroblasts. *Biophysical Journal* **54**: 187-190.
54. French, A.S. and Stockbridge, L.L. (1988) Fractal and Markov behavior in ion channel kinetics. *Canadian Journal of Physiology and Pharmacology* **66**: 967-970.
53. French, A.S. (1987) Removal of rapid sensory adaptation from an insect mechanoreceptor neuron by oxidizing agents which affect sodium channel inactivation. *Journal of Comparative Physiology A* **161**: 275-282.
52. French, A.S. (1986) Strength-duration properties of a rapidly adapting insect sensory neuron. *Journal of Comparative Physiology A* **159**: 757-764.
51. French, A.S. (1986) The role of calcium ions in the rapid adaptation of an insect mechanoreceptor. *Journal of Neuroscience* **6**: 2322-2326.

50. French, A.S. (1985) After-hyperpolarization and receptor potential attenuation following bursts of action potentials in an insect mechanoreceptor. *Canadian Journal of Physiology and Pharmacology* **63**: 18-22.
49. French, A.S. and Kuster, J.E. (1985) Nonlinearities in locust photoreceptors during transduction of small numbers of photons. *Journal of Comparative Physiology A* **156**: 645-652.
48. French, A.S. (1985) The effects of temperature on action potential encoding in the cockroach tactile spine. *Journal of Comparative Physiology A* **156**: 817-821.
47. Kuster, J.E. and French, A.S. (1985) Changes in the dynamic properties of locust photoreceptors at three levels of light adaptation. *Biological Cybernetics* **52**: 333-337.
46. Watts, R.E. and French, A.S. (1985) Sensory transduction in dorsal cutaneous mechanoreceptors of the frog, *Rana pipiens*. *Journal of Comparative Physiology A* **157**: 657-665.
45. French, A.S. (1984) Action potential adaptation in the femoral tactile spine of the cockroach, *Periplaneta americana*. *Journal of Comparative Physiology A* **155**: 803-812.
44. French, A.S. (1984) The dynamic properties of the action potential encoder in an insect mechanosensory neuron. *Biophysical Journal* **46**: 285-290.
43. French, A.S. (1984) The receptor potential and adaptation in the cockroach tactile spine. *Journal of Neuroscience* **4**: 2063-2068.
42. French, A.S. (1984) The frequency response function and sinusoidal threshold properties of the Hodgkin-Huxley model of action potential encoding. *Biological Cybernetics* **49**: 169-174.
41. Kuster, J.E. and French, A.S. (1984) Duplication of a peripheral sensory neuron in the cockroach, *Periplaneta americana*. *Cell and Tissue Research* **236**: 129-131.
40. Kuster, J.E., French, A.S. and Sanders, E.J. (1983) The effects of microtubule dissociating agents on the physiology and cytology of the sensory neuron in the femoral tactile spine of the cockroach, *Periplaneta americana* L. *Proceedings of the Royal Society of London* **B219**: 397-412.
39. Kuster, J.E. and French, A.S. (1983) Sensory transduction in a locust multipolar joint receptor: the dynamic behaviour under a variety of stimulus conditions. *Journal of Comparative Physiology* **150**: 207-215.
38. French, A.S. and Kuster, J.E. (1982) The effects of temperature on mechanotransduction in the cockroach tactile spine. *Journal of Comparative Physiology* **147**: 251-258.

37. French, A.S. and Kuster, J.E. (1981) Sensory transduction in an insect mechanoreceptor: extended bandwidth measurements and sensitivity to stimulus strength. *Biological Cybernetics* **42**: 87-94.
36. French, A.S. and Sanders, E.J. (1981) The mechanosensory apparatus of the femoral tactile spine of the cockroach, *Periplaneta americana*. *Cell and Tissue Research* **219**: 53-68.
35. Hutchison, K.J., Oberle, K., Scott, J.A. and French, A.S. (1981) A comparison of Doppler ultrasonic waveforms processed by zero crossing and spectrographic techniques in the diagnosis of peripheral arterial disease. *Angiology* **32**: 277-289.
34. French, A.S. (1980) The linear dynamic properties of phototransduction in the fly compound eye. *Journal of Physiology* **308**: 385-401.
33. French, A.S. (1980) Sensory transduction in an insect mechanoreceptor: linear and nonlinear properties. *Biological Cybernetics* **38**: 115-123.
32. Dvorak, D., Srinivasan, M.V. and French, A.S. (1980) The contrast sensitivity of fly movement-detecting neurons. *Vision Research* **200**: 397-407.
31. French, A.S. (1980) Phototransduction in the fly compound eye exhibits temporal resonances and a pure time delay. *Nature* **283**: 200-202.
30. French, A.S. (1980) Coherence improvement in white noise analysis by the use of a repeated random sequence generator. *I.E.E.E. Transactions on Biomedical Engineering* **27**: 51-53.
29. French, A.S. and Sanders, E.J. (1979) The mechanism of sensory transduction in the sensilla of the trochanteral hair plate of the cockroach, *Periplaneta americana*. *Cell and Tissue Research* **198**: 159-174.
28. French, A.S. (1979) The effect of light adaptation on the dynamic properties of phototransduction in the fly, *Phormia regina*. *Biological Cybernetics* **32**: 115-123.
27. French, A.S. (1978) Computer aided nonlinear analysis of neural coding. *Brain Theory Newsletter* **3**: 89-91.
26. French, A.S. and Järvilehto, M. (1978) The dynamic behaviour of photoreceptor cells in the fly in response to random (white noise) stimulation at a range of temperatures. *Journal of Physiology* **274**: 311-322.
25. French, A.S. and Järvilehto, M. (1978) The transmission of information by first and second order neurons in the fly visual system. *Journal of Comparative Physiology* **126**: 87-96.

24. French, A.S., Snyder, A.W. and Stavenga, D.G. (1977) Image degradation by an irregular retinal mosaic. *Biological Cybernetics* **27**: 229-233.
23. French, A.S. (1977) Computer simulation of space-filling molecular models. *I.E.E.E. Transactions on Computers* **26**: 1026-1028.
22. French, A.S. and Wong, R.K.S. (1977) Nonlinear analysis of sensory transduction in an insect mechanoreceptor. *Biological Cybernetics* **26**: 231-240.
21. French, A.S. (1976) Practical nonlinear system analysis by Wiener kernel estimation in the frequency domain. *Biological Cybernetics* **24**: 111-119.
20. DiCaprio, R.A., French, A.S. and Sanders, E.J. (1976) On the mechanism of electrical coupling between cells of early *Xenopus* embryos. *Journal of Membrane Biology* **27**: 393-408.
19. French, A.S. and Wong, R.K.S. (1976) The responses of trochanteral hair plate sensilla in the cockroach to periodic and random displacements. *Biological Cybernetics* **22**: 33-38.
18. DiCaprio, R.A., French, A.S. and Sanders, E.J. (1975) Intercellular connectivity in the eight-cell *Xenopus* embryo. *Biophysical Journal* **15**: 373-389.
17. French, A.S. and DiCaprio, R.A. (1975) The dynamic electrical behaviour of the electrotonic junction between Retzius cells in the leech. *Biological Cybernetics* **17**: 129-135.
16. French, A.S. (1974) Synthesis of low frequency noise for use in biological experiments. *I.E.E.E. Transactions on Biomedical Engineering* **21**: 251-252.
15. DiCaprio, R.A., French, A.S. and Sanders, E.J. (1974) Dynamic properties of electrotonic coupling between cells of early *Xenopus* embryos. *Biophysical Journal* **14**: 387-411.
14. French, A.S. and Butz, E.G. (1974) The use of Walsh functions in the Wiener analysis of nonlinear systems. *I.E.E.E. Transactions on Computers* **23**: 225-232.
13. French, A.S. and Butz, E.G. (1973) Measuring the Wiener kernels of a nonlinear system using the fast Fourier transform algorithm. *International Journal of Control* **17**: 529-539.
12. French, A.S. (1973) Averaging of neurophysiological data prior to frequency domain analysis. *Computer Programs in Biomedicine* **3**: 113-122.
11. French, A.S. (1973) Automated spectral analysis of neurophysiological data using intermediate magnetic tape storage. *Computer Programs in Biomedicine* **3**: 45-57.

10. French, A.S., Holden, A.V. and Stein, R.B. (1972) The estimation of the frequency response function of a mechanoreceptor. *Kybernetik* **11**: 15-23.
9. Stein, R.B., French, A.S., Mannard, A. and Yemm, R. (1972) New methods for analyzing motor function in man and animals. *Brain Research* **40**: 187-192.
8. Stein, R.B., French, A.S. and Holden, A.V. (1972) The frequency response, coherence, and information capacity of two neural models. *Biophysical Journal* **12**: 295-322.
7. French, A.S. and Holden, A.V. (1971) Semi-on-line implementation of an alias-free sampling system for neuronal signals. *Computer Programs in Biomedicine* **2**: 1-7.
6. French, A.S. and Holden, A.V. (1971) Frequency domain analysis of neurophysiological data. *Computer Programs in Biomedicine* **1**: 219-234.
5. French, A.S. and Holden, A.V. (1971) Alias-free sampling of neuronal spike trains. *Kybernetik* **8**: 165-171.
4. French, A.S. (1970) On-line storage of event/time data using a magnetic disc unit. *Computer Programs in Biomedicine* **1**: 134-145.
3. French, A.S. (1970) Pulse, an event/time histogramming program. *Computer Programs in Biomedicine* **1**: 105-117.
2. French, A.S. and Stein, R.B. (1970) A flexible neural analog using integrated circuits. *I.E.E.E. Transactions on Biomedical Engineering* **17**: 248-253.
1. Bradley, J.N. and French, A.S. (1969) The chemisorption of carbon monoxide on deposited metal aerosols. *Proceedings of the Royal Society of London A* **313**: 169-182.

***Papers submitted or in preparation:***

2. Saari, P., Immonen, E.V., French, A.S. Torkkeli, P.H., Liu, H., Heimonen, K. and Frolov, R.V. (2017) Ephaptic interactions modulate physiological responses of photoreceptors in the compound eye of *Periplaneta americana*. (submitted).
1. Ignatova, I, French, A.S. and Frolov, R. (2017) Effects of phase correlations in naturalistic stimuli on quantitative information coding by fly photoreceptors. (submitted).

***Book chapters published or in press:***

23. French A.S. and Torkkeli P.H. (2012) Sensory receptors and mechanotransduction. In: Sperelakis N., (Ed.) *Cell Physiology Source Book*. Academic Press, San Diego, London, Boston, New York, Sydney, Tokyo, Toronto. 4<sup>th</sup> edition. 633-647.

22. French, A.S. and Torkkeli, P.H. (2009) Mechanotransduction (Touch, Sensillar Structure). In: Encyclopedia of Insects. Ed: V.H. Resh and R.T. Cardé. Academic Press, San Diego 610-611.
21. French, A.S. and Torkkeli, P.H. (2009) Mechanoreceptors. In: Encyclopedia of Neuroscience. Ed: L.R. Squire. Academic Press, Oxford, **5**: 689-695.
20. French, A.S. (2008) Biophysics of Chordotonal Organs. In: The Senses: A Comprehensive Reference, **3**: Audition. Ed: P. Dallos and D. Oertel. Academic Press, San Diego, 211-216.
19. French, A.S. and Torkkeli, P.H. (2007) Mechanosensitive ion channels of spiders: Mechanical coupling, electrophysiology and synaptic modulation. In: Current Topics in Membranes **59**: Mechanosensitive Ion Channels, Part B. Ed: O.P. Hamill. Elsevier, 1-20.
18. Mitsis, G.D., French, A.S., Höger, U, Courellis, S. and Marmarelis, V.Z. (2005) Nonlinear Dynamic Modeling of Action Potential Encoding in two types of Spider Mechanoreceptors. In: International Federation for Medical and Biological Engineering Proceedings (EMBECE 2005), 11: 5 pp.
17. Mitsis, G.D., Courellis, S., French, A.S. and Marmarelis, V.Z. (2003) Principal dynamic mode analysis of a spider mechanoreceptor action potentials. In: Proceedings of the 25th Annual International Conference of the IEEE EMBS, Cancun, Mexico, September 17-21, 2003, 2051-2054.
16. French, A.S. and Torkkeli, P.H. (2003) Mechanotransduction (Touch, Sensillar Structure). In: Encyclopedia of Insects. Ed: V.H. Resh and R.T. Cardé. Academic Press, San Diego, 689-690.
15. French, A.S. and Torkkeli, P.H. (2001) Sensory Receptors and Mechanotransduction. In: Cell Physiology Source Book, 3rd Edition. Ed: N. Sperelakis. Academic Press, San Diego, 761-773.
14. French, A.S. and Marmarelis, V.Z. (1999) Nonlinear analysis of neuronal systems. In: Modern Techniques in Neuroscience Research. Ed: U. Windhorst and H. Johansson. Springer-Verlag, Berlin, 627-640.
13. Amat, C., Lapied, B., French, A.S. and Hue, B. (1998) Morphological, immunocytochemical, electrophysiological and pharmacological aspects of dorsal paired median (DPM) insect neurons. In: Proceedings of the II<sup>nd</sup> International Conference on Insects. Chemical, Physiological and Environmental Aspects. Ldek-Zdrój, Poland, 64-69.
12. Juusola, M. and French, A.S. (1996) Signal encoding in spider slit-sense organ mechanoreceptor neurons. In: From structure to information in sensory systems. Proceedings of the International School of Biophysics, Naples, Italy. 15 pp.

11. French, A.S. (1994) Ion channels underlying transduction and adaptation in mechanoreceptors. In: Cellular mechanisms of sensory processing. NATO ASI Series, Springer-Verlag, Ed: L. Urban. **H79**: 19-34.
10. French, A.S. and Patrick, S.K. (1994) Testing a nonlinear model of sensory adaptation with a range of step input functions. In: Advanced methods of physiological system modeling. Ed: V.Z. Marmarelis. Plenum Press. **3**: 129-138.
9. French, A.S., Pece, A.E.C., and Korenberg, (1989) M.J. Nonlinear models of transduction and adaptation in locust photoreceptors. In: Advanced methods of physiological system modelling. Plenum Press, Ed: V.Z. Marmarelis. **2**: 81-95.
8. French, A.S. and Korenberg, M.J. (1989) Nonlinear cascade analysis of sensory transduction in a mechanoreceptor. In: Modelling and Control in Biomedical Systems, Selected Papers from the IFAC Symposium, Venice, Italy April 6-8, 1988. Ed: C. Cobelli and L. Mariani. Pergamon Press. pp. 519-524.
7. French, A.S. and Kuster, J.E. (1987) Linear and nonlinear behavior of photoreceptors during transduction of small numbers of photons. In: Advanced Methods of Physiological System Modelling. Ed: V.Z. Marmarelis. Plenum Press. **1**: 41-48.
6. French, A.S. (1982) Linear and nonlinear frequency domain analysis of sensory transduction in an insect mechanoreceptor. In: Proceedings of the 5th. Hawaii International Conference on System Science pp. 327-336.
5. French, A.S. (1976) Software for spectral analysis of neurophysiological data. In: Computer Technology in Neuroscience. Ed: P.B. Brown. John Wiley and Sons. pp. 459-473.
4. French, A.S. (1976) A sampling algorithm for bandwidth limitation of action potential trains. In: Computer Technology in Neuroscience. Ed: P.B. Brown. John Wiley and Sons. pp. 447-458.
3. French, A.S. (1975) Measuring the Wiener kernels of a nonlinear system by use of the fast Fourier transform and Walsh functions. In: Proceedings of the 1st. Symposium on Testing and Identification of Nonlinear Systems. California Institute of Technology, Ed: G.D. McCann and P.Z. Marmarelis. pp. 76-88.
2. French, A.S. (1974) The analysis of information coding by neuronal spike trains. In: Proceedings of the 8th. International Biometric Conference. Ed: L.C.A. Corsten and T. Postelnicu. Editura Academiei Republicii Socialiste Romania. pp. 209-214.
1. Stein, R.B. and French, A.S. (1970) Models for the transmission of information by nerve cells. In: Excitatory Synaptic Mechanisms. Universitetsforlaget, Oslo. pp. 247-257.

**Abstracts:**

166. Johnson J.A., Liu H., Fabian-Fine R., French A.S., Torkkeli P.H. 2017: Localization of cholinergic markers in the central nervous system of the spider, *Cupiennius salei*. 10<sup>th</sup> Department of Physiology and Biophysics Graduate Student Research Day.
165. Torkkeli, P.H., Sukumar, V., Meisner, S., Panek, I. and French, A.S. (2015) Spider, *Cupiennius salei*, mechanosensory neurons have multiple biogenic amine receptor types, including constitutively active receptors. Program No. 205.11. 2015 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2015. Online.
164. French, A.S., Torkkeli, P.H., Meisner, S., Liu, H., Immonen, E.-V., Frolov, R. and Weckström, M. (2015) Molecular and functional characterization of opsins and TRP channels in compound eyes of the cockroach, *Periplaneta americana*. Program No. 58.21. 2015 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2015. Online.
163. French, A.S., Li, A.W., Meisner, S. and Torkkeli, P.H. (2014) The transcriptome of the spider *Cupiennius salei* peripheral nervous system – identifying genes involved in mechanosensation. 11th Congress of the International Society for Neuroethology. Sapporo, Japan, PO-1064.
162. Torkkeli, P.H. and French, A.S. (2014) The cys-loop ligand-gated ion channel gene family of the spider *Cupiennius salei* nervous system. 11th Congress of the International Society for Neuroethology. Sapporo, Japan, PO-2196.
161. Torkkeli, P.H., Wu LI, A., Meisner, S. and French, A.S. (2013) Several octopamine receptor subtypes are involved in modulation of spider mechanosensory neurons. *Invertebrate Sound and Vibration* 14 (submitted).
160. French, A.S., Li, A., Meisner, S. and Torkkeli, P.H. (2013) Transcriptome assembly of neurotransmitter receptors in spider mechanoreceptors. *Journal of Physiological Sciences* (submitted).
159. French, A.S., Höger, U., Schmitz, J. and Torkkeli, P.H. (2013) Calcium ions modulate transduction, and are strongly buffered in spider mechanosensory neurons. *Invertebrate Sound and Vibration* 14 (submitted).
158. Torkkeli, P.H., Meisner, S. and French, A.S. (2012) Ionotropic GABA and glutamate receptors have different effects on excitability and are differentially regulated by calcium in spider mechanosensory neurons. *Society for Neuroscience Abstracts* 136.21.

157. French, A.S., Meisner, S., Lowe, J. and Torkkeli, P.H. (2012) Dynamic characterization of carbon dioxide transduction in *Drosophila melanogaster* antennal olfactory sensilla. Society for Neuroscience Abstracts 174.04.
156. French, A.S., Torkkeli, P.H. and Schuckel, J. (2011) Dynamic properties of multiple olfactory neurons in *Drosophila* antennal basiconic sensilla. Eighth IBRO World Congress of Neuroscience. Florence, Italy, C222.
155. Pfeiffer, K., Torkkeli, P.H. and French, A.S. (2011) Information transmission is limited by entropy in spider mechanoreceptors. Ninth Göttingen Meeting of the German Neuroscience Society. T20-1B.
154. French, A.S., Schuckel, J. and Torkkeli, P.H. (2009) Excitatory and inhibitory pathways with differing dynamics in *Drosophila* olfactory receptors. Canadian Physiological Society Winter Meeting, Beaupré, Québec. 24.
153. Torkkeli, P.H., Pfeiffer, K., Meisner, S. and French, A.S. (2009) Long and short term effects of glutamate on spider mechanosensory neurons during random stimulation. Journal of Physiological Sciences **59**: Supp. 1, 203.
152. French, A.S., Höger, U., Meisner, S. and Torkkeli, P.H. (2009) Calcium-based negative feedback on sensory transduction in spider mechanoreceptors. Journal of Physiological Sciences **59**: Supp. 1, 203.
151. Pfeiffer, K., Höger, U., French, A.S. and Torkkeli, P.H. (2009) Differing effects of GABA and glutamate on spider (*Cupiennius salei*) mechanoreceptors. Eighth Göttingen Meeting of the German Neuroscience Society T20-6C.
150. Höger, U., Meisner, S., Torkkeli, P.H. and French, A.S. (2009) Mechanically induced regional changes in free intracellular  $Ca^{2+}$ , and the effect of intracellular  $Ca^{2+}$  on mechanotransduction in spider sensory neurons. Eighth Göttingen Meeting of the German Neuroscience Society T20-6A.
149. Schuckel, J., Torkkeli, P.H. and French, A.S. (2009) Different fruit odors produce widely divergent dynamic responses in *Drosophila* antennal olfactory receptor neurons. Eighth Göttingen Meeting of the German Neuroscience Society T19-1A.
148. Höger, U., Meisner, S., Torkkeli, P.H. and French, A.S. (2008) Regional calcium changes in spider mechanoreceptors during sensory transduction. Society for Neuroscience Abstracts 271.2.

147. Pfeiffer K., Höger U., French A.S. and Torkkeli P.H. (2008) Mechanisms of GABA<sub>A</sub> receptor mediated excitation of spider mechanosensory neurons. Society for Neuroscience Abstracts 271.1.
146. Schuckel, J., Stengl, M., Torkkeli, P.H. and French, A.S. (2008) Dynamic characterization of *Drosophila* olfactory sensilla by random binary sequence stimulation. Society for Neuroscience Abstracts 65.5.
145. Pfeiffer, K., Höger, U., French, A.S. and Torkkeli, P.H. (2008) Membrane depolarization and the excitatory action of GABA and muscimol in spider mechanosensory neurons. Canadian Physiological Society Winter Meeting 2008, Lake Louise, Alberta, 22-23.
144. Schuckel, J., Meisner, S., Torkkeli, P.H. and French, A.S. (2008) Controlled dynamic stimulation of *Drosophila* olfactory receptors. Canadian Physiological Society Winter Meeting 2008, Lake Louise, Alberta 23-24.
143. Pfeiffer K, Höger U, French A.S. and Torkkeli P.H. (2007) Excitatory effects of GABA<sub>A</sub> receptor activation in spider mechanosensory neurons. 8<sup>th</sup> Congress of the International Society for Neuroethology 236.
142. Schuckel, J., Meisner, S., Torkkeli, P.H. and French, A.S. (2007) Controlled dynamic stimulation of *Drosophila* olfactory receptors. 8<sup>th</sup> Congress of the International Society for Neuroethology 80.
141. Höger, U., Torkkeli, P.H. and French, A.S. (2007) Ratiometric measurements of calcium concentration during sensory transduction in spider mechanoreceptors. 7th IBRO World Congress of Neuroscience 147.
140. Widmer A., Höger U., Meisner S., French A.S. and Torkkeli P.H. (2005) Spider peripheral mechanosensory neurons are directly innervated and modulated by octopaminergic efferents. 9<sup>th</sup> European Symposium of Insect Taste and Olfaction, Villasimius, Italy.
139. Höger U., Torkkeli P.H. and French A.S. (2005) Calcium concentration changes in spider mechanoreceptors during sensory transduction. Society for Neuroscience Abstracts **31**: 296.8.
138. French, A.S., Justus, K.A. and Cardé, R.T. (2005) Linear and nonlinear analysis of antennal responses to turbulent pheromone plumes in two moth species. Canadian Physiological Society Winter Meeting, Beaupré, Québec. 25.
137. Höger, U. and French, A.S. (2004) Slow adaptation of action potential firing in spider mechanoreceptors. Society for Neuroscience Abstracts **30**: 870.6.

136. Widmer, A., Höger, U., Meisner, S., French, A.S. and Torkkeli P.H. (2004) Immunocytological and electrophysiological characterization of octopamine receptors in spider mechanosensilla. Society for Neuroscience Abstracts **30**: 870.7.
135. Gingl, E., Panek, I., Torkkeli, P.H. and French, A.S. (2003) Localization of GABA mediated peripheral inhibition in spider mechanoreceptor neurons. Society for Neuroscience Abstracts **29**: 269.2.
134. Widmer, A., Höger, U., Meisner, S., French, A.S. and Torkkeli, P.H. (2003) Muscarinic ACh receptors on spider mechanosensilla. Society for Neuroscience Abstracts **29**: 269.3.
133. Höger, U. and French, A.S. (2003) Extracellular pH modulates receptor current in a spider mechanoreceptor. 29<sup>th</sup> Göttingen Neurobiology Conference 354.
132. Gingl, E. and French, A.S. (2003) Conduction of receptor current through the sensory dendrite of a spider mechanoreceptor neuron. 29<sup>th</sup> Göttingen Neurobiology Conference 352.
131. Juusola, M., Niven, J.E. and French, A.S. (2003) Nonlinear analysis of normal and *Shaker* K<sup>+</sup> channel knockout *Drosophila* photoreceptors stimulated by white noise and natural light signals. 29<sup>th</sup> Göttingen Neurobiology Conference 532-533.
130. French, A.S. (2002) Sensory transduction in an arthropod mechanoreceptor system. Proceedings of the IV World Congress of Biomechanics, Symposium 5167.
129. Höger, U. and French, A.S. (2002) Acid modulation of receptor current in spider mechanoreceptors. Society for Neuroscience Abstracts **28**: 60.11.
128. French, A.S. and Torkkeli, P.H. (2001) The ionic basis of rapid sensory adaptation in paired spider mechanoreceptor neurons with different adaptation properties. Proceedings of the International Union of Physiological Sciences **XXXIV**: A373.
127. Torkkeli, P.H. and French, A.S. (2001) A model of excitability in spider mechanoreceptor neurons confirms that sodium inactivation controls their rapid adaptation. Society for Neuroscience Abstracts **27**: 820.10.
126. Panek, I., French, A.S., Seyfarth, E.-A., Sekizawa, S.-i. and Torkkeli, P.H. (2001) GABAergic modulation of spider mechanosensory afferents. Society for Neuroscience Abstracts **27**: 156.8.
125. Widmer, A., French, A.S. and Torkkeli, P.H. (2001) Acetylcholine receptors on cultured antennal cells of the moth *Manduca sexta*. Society for Neuroscience Abstracts **27**: 392.11.
124. Höger, U. and French, A.S. (2001) Mechanotransduction in the spider VS-3 lyriform organ. 28<sup>th</sup> Göttingen Neurobiology Conference 323.

123. French, A.S., Höger, U., Sekizawa, S.-i. and Torkkeli, P.H. (2000) Frequency response functions for mechanical and electrical stimulation of a spider slit sense organ. *Society for Neuroscience Abstracts* **26**: 66.7.
122. Torkkeli, P.H., Sekizawa, S.-i and French, A.S. (2000) Inactivation of Na<sup>+</sup> currents contributes to the adaptation of paired spider mechanosensory neurons. *Society for Neuroscience Abstracts* **26**: 66.8.
121. French, A.S., Sekizawa, S.-i., Höger, U. and Torkkeli, P.H. (2000) Nonlinear models of action potential firing in paired mechanoreceptor neurons. *Annals of Biomedical Engineering* **28**: S33.
120. Sekizawa, S.-i., French, A.S. and Torkkeli, P.H. (1999) Calcium currents in spider mechanosensory neurons. *Society for Neuroscience Abstracts* **25**: 726.
119. Höger, U. and French A.S. (1999) Activation energy of mechanotransduction and conduction velocity in a spider mechanoreceptor. *Society for Neuroscience Abstracts* **25**: 408.
118. Dick, S.H., French, A.S. and Rasmusson, D.D. (1999) Functional interactions between cuneate and post synaptic dorsal column neurons. *Society for Neuroscience Abstracts* **25**: 402.
117. Torkkeli, P.H. and French, A.S. (1999) Stretch-activated ion channels in cultured mechanosensory neurons of *Manduca sexta*. *Biophysical Journal* **76**: A203.
116. Höger, U., and French, A.S. (1999) Single channel conductance of mechanically-activated channels in a spider mechanoreceptor estimated by noise analysis. *Biophysical Journal* **76**: A204.
115. Sekizawa, S.-i., French, A.S., Höger, U. and Torkkeli, P.H. (1999) Voltage-activated outward currents in two types of spider mechanoreceptor neurons. *Biophysical Journal* **76**: A77.
114. Torkkeli, P.H. and French, A.S. (1998) A new preparation of *in vitro* mechanoreceptor neurons from the moth, *Manduca sexta*. *Physiology Canada* **29**: 187.
113. Sekizawa, S.-i., French, A.S., Höger, U. and Torkkeli, P.H. (1998) Contributions of voltage-activated outward currents to adaptation properties in two types of spider mechanoreceptor neurons. *Physiology Canada* **29**: 184.
112. Höger, U. and French, A.S. (1998) Noise analysis of the mechanically-activated current in spider mechanoreceptor neurons. *Physiology Canada* **29**: 169.

111. Shi, C., Ryan, J.S., French, A.S., Cocal-Prados, M. and Kelly, M.E. (1998) Characterization of a hypoosmotically-stimulated Cl<sup>-</sup> current contributing to regulatory volume decrease in rabbit NPE cells. *Invest. Ophthalmol. Vis. Sci.* **39**: S795.
110. Höger, U., Torkkeli, P.H. Seyfarth, E.-A. and French A.S. (1997) The ionic basis of the transduction current in spider slit-sense organ mechanoreceptor neurons. *Proceedings of the 25<sup>th</sup> Göttingen Neurobiology Conference.* p 253.
109. Torkkeli, P.H., Höger, U. Seyfarth E.-A. and French A.S. (1997) Ionic selectivity of mechanically-activated ion channels in a spider mechanoreceptor. *Society for Neuroscience Abstracts* **23**: 1572.
108. Juusola, M. and French, A.S. (1996) The efficiency of information transfer from transduction to action potential encoding in mechanoreceptor neurons. *Society for Neuroscience Abstracts* **22**: 1081.
107. French, A.S. and Juusola, M. (1996) Resolution of moving dots by first- and second-order neurons in the fly eye. *Progress in Biophysics and Molecular Biology* **65**: Supplement 1, 183.
106. Torkkeli, P.H. and French, A.S. (1996) Dissociated cockroach mechanoreceptor neurons in culture. *Progress in Biophysics and Molecular Biology* **65**: Supplement 1, 181.
105. Ho, M.W.Y., Shears, S.B., Bruzik, K.S., Duszyk, M., and French, A.S. (1996) Direct evidence of down-regulation of calcium-dependent chloride current by inositol(3,4,5,6) tetrakisphosphate in CFPAC-1 cells. *Biophysical Journal* **70**: A70.
104. Juusola, M., Weckström, M., Korenberg, M. and French, A.S. (1995) Nonlinear models of the first synapse in the light-adapted fly retina. *Society for Neuroscience Abstracts* **21**: 405
103. Juusola, M. and French, A.S. (1995) The dynamic properties of sensory neurons in a spider slit sense organ. *Biophysical Journal* **68**: A392.
102. Torkkeli, P.H. and French, A.S. (1995) Delayed potassium currents in an insect cuticular mechanoreceptor neuron. *Biophysical Journal* **68**: A38.
101. Duszyk, M., Liu, D., French, A.S. and Man, S.F.P. (1995) Acidity affects the rectification of an outwardly rectifying epithelial chloride channel. *Biophysical Journal* **68**: A275.
100. Ho, M.W.Y., Duszyk, M. and French, A.S. (1995) Characterization of the calcium-dependent chloride conductance in CFPAC-1 cells. *Biophysical Journal* **68**: A275.
99. Juusola, M., Seyfarth, E.-A. and French, A.S. (1994) Intracellular responses to mechanical and electrical stimulation of a spider slit sense organ. *Society for Neuroscience Abstracts* **20**: 776.

98. Man, S.F.P., Liu, D., French, A.S. and Duszyk, M. (1994) Role of alkaline phosphatase in regulation of anion channels from bovine tracheal epithelial cells. American Thoracic Society.
97. Seyfarth, E.-A., Juusola, M. and French, A.S. (1994) Intracellular measurements in identified neurons of a new spider mechanoreceptor preparation. In: Elsner, N., Breer, H. (eds) Sensory Transduction. Proceedings of the 22nd. Göttingen Neurobiology Conference, Thieme Verlag Stuttgart, New York, **I**, 59.
96. Torkkeli, P.H. and French, A.S. (1994) Adaptation in an insect mechanoreceptor neuron involves both outward and inward currents. *Biophysical Journal* **66**: A167.
95. Duszyk, M., Liu, D., French, A.S. and Man, S.F.P. (1994) Alkaline phosphatase regulates epithelial anion channels in bovine trachea. *Biophysical Journal* **66**: A100.
94. Ho, M.W.Y. and French, A.S. (1994) Fluctuation analysis of a volume-sensitive chloride conductance in T84 cells. *Biophysical Journal* **66**: A99.
93. French, A.S. and Seyfarth, E.-A. (1993) The morphology and electrophysiology of mechanoreceptor neurons in spider slit sensilla. *Physiology Canada* **24**: 139.
92. Juusola, M., Weckström, M., Uusitalo, R. and French, A.S. (1993) Novel nonlinearities in light-adapted fly photoreceptors. *Physiology Canada* **24**: 140.
91. Torkkeli, P.H. and French, A.S. (1993) The role of outward currents in the adaptation of an insect mechanoreceptor neuron. *Physiology Canada* **24**: 141.
90. Ho, M.W.Y., Duszyk, M. and French, A.S. (1993) Characterization of the volume-sensitive chloride conductance in T84 cells. *Physiology Canada* **24**: 201.
89. Liu, D., Duszyk, M., French, A.S. and Man, S.F.P. (1993) Regulation of anion channels by membrane-bound proteins from bovine tracheal epithelial cells. *Physiology Canada* **24**: 197.
88. Duszyk, M., Liu, D., French, A.S. and Man, S.F.P. (1993) Halide permeation through epithelial anion channels reconstituted into giant liposomes. *Biophysical Journal* **64**: A358.
87. Weckström, M., Juusola, M., Korenberg, M., Kouvalainen, E., Järvilehto, M. and French, A.S. (1993) Modelling of fly phototransduction using parallel cascade and Volterra kernels. Proceedings of the 21st. Göttingen Neurobiology Conference 342.
86. French, A.S. and Torkkeli, P.H. (1993) The ionic mechanisms of rapid adaptation in a mechanosensory neuron. Proceedings of the XXXII Congress of the International Union of Physiological Sciences 278.5.

85. Duszyk, M., Liu, D., French, A.S. and Man, S.F.P. (1993) A large epithelial ion channel is regulated by protein phosphatases. Proceedings of the XXXII Congress of the International Union of Physiological Sciences 329.5.
84. Seyfarth, E.-A. and French, A.S. (1993) Electrical and morphological properties of sensory neurons in a spider lyriform organ. Society for Neuroscience Abstracts **19**: 338.
83. French, A.S. and Torkkeli, P.H. (1993) Potassium currents in a rapidly adapting insect mechanosensory neuron. Society for Neuroscience Abstracts **19**: 338.
82. Duszyk, M., French, A.S. and Man, S.F.P. (1993) Modification of epithelial chloride channel amino groups. Proceedings of the 11th. International Biophysics Congress **11**: 132.
81. Torkkeli, P.H. and French, A.S. (1992) Ionic currents in a rapidly adapting mechanosensory neuron. Physiology Canada **23**: 115.
80. Duszyk, M., Liu, D., French, A.S. and Man, S.F.P. (1992) Studies of epithelial anion channels reconstituted into giant liposomes. Physiology Canada **23**: 119.
79. Duszyk, M., French, A.S. and Man, S.F.P. (1992) A patch-clamp study of epithelial ion channels reconstituted into giant liposomes. The Physiologist **35**: A1.
78. Duszyk, M., French, A.S. and Man, S.F.P. (1992) Apical membrane surface charge of MDCK cells. Biophysical Journal **61**: A536.
77. Man, S.F.P., A.S. French and T.D. Tsai (1992) Voltage-dependent anion currents in human airway epithelial cells. Biophysical Journal **61**: A511.
76. French, A.S., Ho, M., Duszyk, M. and Man, S.F.P. (1992) Noise analysis of ionic currents through voltage-clamped cultured epithelial cells. Proceedings of the XIth. International Cystic Fibrosis Congress, Dublin, Ireland **11**: MP32.
75. Torkkeli, P.H. and French, A.S. (1992) Ionic currents underlying rapid sensory adaptation in the cockroach tactile spine. Society for Neuroscience Abstracts **18**: 301.
74. Man, S.F.P., Duszyk, M., Ho, M.W.Y. and French, A.S. (1991) Salicylate affects ion permeation through MDCK monolayers. American Review of respiratory Disease **145**: 367.
73. Duszyk, M., Ho, M.W.-Y., Man, S.F.P. and French, A.S. (1991) Effects of varying ionic strength on ion movements in MDCK cells. Physiology Canada **22**: 224.
72. Torkkeli, P.H. and French, A.S. (1991) Mapping the action potential initiation region of an insect sensory neuron. Physiology Canada **22**: 191.

71. French, A.S., Klimaszewski, A.R. and Stockbridge, L.L. (1991) Morphological properties of the sensory neuron in the cockroach tactile spine. *Society for Neuroscience Abstracts* **17**: 638.
70. Wilk-Blaszczak, M.A., French, A.S. and Man, S.F.P. (1991) Halide permeability of 20\_pS anion channels in the apical membranes of airway epithelial cells. *Biophysical Journal* **59**: 645a.
69. French, A.S. and Stockbridge, L.L. (1991) Nonlinear analysis of sensory encoding in a rapidly adapting insect mechanoreceptor. *Biophysical Journal* **59**: 185a.
68. Duszyk, M., French, A.S. and Man, S.F.P. (1991) Current fluctuation analysis of chloride channels in the apical membranes of epithelial cells. *Biophysical Journal* **59**: 645a
67. French, A.S. (1991) Rapid adaptation in the cockroach tactile spine. *Society for Experimental Biology, Birmingham Meeting, Animal Topics* 48.
66. French, A.S., Stockbridge, L.L. and Torkkeli, P.H. (1991) A nonlinear model of action potential encoding in a rapidly adapting sensory neuron. *Proceedings of the 13th. International Conference of the IEEE/EMBS* **13**: 2260-2261.
65. French, A.S. and Stockbridge, L.L. (1991) Electrical and morphological properties of the sensory neuron in the cockroach tactile spine. *Canadian Journal of Physiology and Pharmacology* **69**: Aviii.
64. Duszyk, M., French, A.S. and Man, S.F.P. (1991) Fluctuation analysis of chloride channels in apical membranes of MDCK cells. *Canadian Journal of Physiology and Pharmacology* **69**: Avii.
63. Man, S.F.P., Tsai, T.D., Duszyk, M. and French, A.S. (1991) Whole-cell chloride currents in human nasal airway epithelial cells. *American Review of Respiratory Disease* **143**: 149a.
62. French, A.S. and Pece, A.E.C. (1990) Nonlinear models of photon interactions during transduction. *Abstracts, International Congress of Eye Research* **9**: 175.
61. French, A.S. and Duszyk, M. (1990) An analytical model of ionic movements in airway epithelial cells. *Physiology Canada***20**: 102.
60. Duszyk, M., French, A.S. and Man, S.F.P. (1990) Cation channels in the apical membrane of human airway epithelial cells. *Physiology Canada* **20**: 98.
59. Duszyk, M. and French, A.S. (1990) Analysis of ionic movements in airway epithelial cells. *Biophysical Journal* **57**: 83a.

58. Stockbridge, L.L., French, A.S. and Man, S.F.P. (1990) Subconductances in calcium-activated potassium channels from airway smooth muscle. *Biophysical Journal* **57**: 114a.
57. French, A.S. and Korenberg, M.J. (1990) Analysis of a nonlinear cascade model for sensory encoding by modification of ion channels. *Proceedings of the 12th. International Conference of the IEEE/EMBS* **12**: 25-26.
56. Ramirez, J.-M., Pearson, K.G. and French, A.S. (1990) Reversible inactivation of insect mechanoreceptors by phentolamine and its use for chemical deafferentation. *Proceedings of the 18th. Göttingen Neurobiology Conference* 70.
55. Ramirez, J.-M., French, A.S. and Pearson, K.G. (1990) Chemical inactivation of mechanoreceptors in the study of insect behavior. *Verhandlungen der Deutschen Zoologischen Gesellschaft* **83**: 426-427.
54. French, A.S., Stockbridge, L.L., Duszyk, M. and Man, S.F.P. (1989) Fractal and Markov models of kinetic behavior in single ion channels. *Biophysical Journal* **55**: 495a.
53. Duszyk, M., French, A.S. and Man, S.F.P. (1989) Activation and anion permeability of a chloride channel from human nasal epithelia. *Biophysical Journal* **55**: 605a.
52. Duszyk, M., French, A.S., Man, S.F.P. and Becker, A. (1989) Single chloride channels in airway epithelial cells from ragweed-sensitized dogs. *Proceedings of the Canadian Federation of Biological Societies* **32**: 81.
51. French, A.S., Duszyk, M. and Man, S.F.P. (1989) Single chloride and sodium channels in normal and cystic fibrosis human airway cells. *Proceedings of the International Union of Physiological Sciences* **XXXI**: 367.
50. Man, S.F.P., Duszyk, M. and French, A.S. (1989) Sodium channels in the apical membrane of human airway epithelial cells. *American Thoracic Society*.
49. Duszyk, M., French, A.S. and Man, S.F.P. (1989) Sodium channels in the apical membrane of nasal epithelial cells. *Canadian Journal of Physiology and Pharmacology* **67**: Aix.
48. Stockbridge, L.L. and French, A.S. (1989) Dissociation and culture of insect mechanoreceptor cells from the connective chordotonal organ in the antenna of *Periplaneta americana*. *Canadian Journal of Physiology and Pharmacology* **67**: Axxxv.
47. Pece, A.E.C., French, A.S., Korenberg, M.J. and Kuster, J.E. (1989) Gain control by biochemical feedback in locust photoreceptors. *Canadian Journal of Physiology and Pharmacology* **67**: Axxix.

46. Stockbridge, L.L. and French, A.S. (1989) Ion channels in isolated mechanosensory neurons from the connective chordotonal organ in the pedicel of the american cockroach. Society for Neuroscience Abstracts **15**: 1287.
45. Pece, A.E.C., French, A.S., Korenberg, M.J. and Kuster, J.E. (1988) Gain control in locust photoreceptors. Proceedings of the 8th. Annual Heritage Medical Research Days 24.
44. Duszyk, M., French, A.S. and Man, S.F.P. (1988) Sodium channels in the apical membrane of nasal epithelial cells. Proceedings of the 8th. Annual Heritage Medical Research Days 4.
43. Stockbridge, L.L. and French, A.S. (1988) Isolated insect mechanoreceptor cells possess stretch-activated ion channels. Proceedings of the 8th. Annual Heritage Medical Research Days 24.
42. French, A.S. and Stockbridge, L.L. (1988) Stretch-activated ion channels in isolated mechanoreceptor cells from the cockroach. The Physiologist **31**: A144.
41. Pece, A.E.C., French, A.S., Korenberg, M.J. and Kuster, J.E. (1988) Transduction in locust photoreceptors: flash and white noise stimulation. Society for Neuroscience Abstracts **14**: 34.
40. Duszyk, M., French, A.S. and Man, S.F.P. (1988) Chloride channels in the apical membrane of human airway epithelial cells. The Physiologist **31**: A144.
39. French, A.S. and Stockbridge, L.L. (1988) The dependence of ion channel kinetics on the observational time scale. Canadian Journal of Physiology and Pharmacology **66**: Axv.
38. French, A.S. (1988) Rapid sensory adaptation in an insect sensory neuron has two clearly separable components. Canadian Journal of Physiology and Pharmacology **66**: Axv.
37. French, A.S. and Stockbridge, L.L. (1988) Kinetic analysis of cation channels in fibroblasts: Markov and fractal behavior. Biophysical Journal **53**: 157a.
36. French, A.S. (1987) Dynamic analysis of threshold changes in an insect sensory neuron reveals two components of rapid adaptation. Society for Neuroscience Abstracts **13**: 30.8.
35. Stockbridge, L.L. and French, A.S. (1987) Stretch-activated channels in human fibroblasts. Society for Neuroscience Abstracts **13**: 30.7.
34. Pece, A.E.C. and French, A.S. (1987) Stimulus location and dynamic properties of single photon transduction in locust photoreceptors. Proceedings of the 7th. Annual Heritage Medical Research Days 124.

33. Stockbridge, L.L and French, A.S. (1987) A stretch-activated channel in human fibroblasts. Proceedings of the 7th. Annual Heritage Medical Research Days 101.
32. Pece, A.E.C. and French, A.S. (1986) Regional properties of transduction of single photons in locust photoreceptors. Proceedings of the 6th. Annual Heritage Medical Research Days.
31. Stockbridge, L.L. and French, A.S. (1986) K<sup>+</sup> channels in fibroblasts. Proceedings of the 6th. Annual Heritage Medical Research Days.
30. French, A.S. (1986) Elimination of rapid adaptation from an insect sensory neuron by Chloramine-T. Society for Neuroscience Abstracts **12**: 410.12.
29. Stockbridge L.L. and French, A.S. (1986) Ion channels in chick and human fibroblasts. Society for Neuroscience Abstracts**12**: 368.11.
28. Pece, A.E.C. and French, A.S. (1986) Regional properties of transduction of single photons in locust photoreceptors. Society for Neuroscience abstracts **12**: 174.9.
27. French, A.S. (1986) Frequency domain approaches to sensory transduction and sensory adaptation. Proceedings of the International Union of Physiological Sciences **16**: S521.01.
26. French, A.S. (1986) Strength-duration relationships in the action potential encoder of an insect mechanosensory neuron. Canadian Journal of Physiology and Pharmacology **64**: Ax.
25. French, A.S. (1985) The effects of temperature on the action potential encoder of an insect mechanosensory neuron. Canadian Journal of Physiology and Pharmacology **63**: Axiii-xiv.
24. French, A.S. (1985) Is calcium involved in the rapid adaptation of an insect mechanoreceptor? Proceedings of the Canadian Federation of Biological Societies **28**: PA-198.
23. French, A.S. and Kuster, J.E. (1984) Nonlinear interactions between single photons during transduction in locust photoreceptors. Proceedings of the Canadian Federation of Biological Societies **27**: PA-19.
22. Watts, R.E. and French, A.S. (1984) Mechanotransduction in cutaneous dorsal receptors of the leopard frog, *Rana pipiens*. Proceedings of the Canadian Federation of Biological Societies **27**: PO-24.
21. French, A.S. and Kuster, J.E. (1984) Nonlinear dynamic interactions between pairs of photons absorbed in locust photoreceptors. Society for Neuroscience Abstracts **10**: 181.
20. French, A.S. (1984) Sensory transduction and the cause of adaptation in a rapidly adapting insect mechanoreceptor. Canadian Journal of Physiology and Pharmacology **62**: Aix-x.

19. Kuster, J.E. and French, A.S. (1983) An investigation of the role of microtubules in sensory transduction by an insect mechanoreceptor. *Society for Neuroscience Abstracts* **9**: 98.1.
18. French, A.S. and Kuster, J.E. (1983) The effects of microtubule dissociating agents on sensory transduction in an insect mechanoreceptor. *Proceedings of the Canadian Federation of Biological Societies* **26**: 101.
17. Kuster, J.E. and French, A.S. (1982) The dynamic sensitivity of bipolar and multipolar mechanosensitive neurons. *Proceedings of the 2nd. Annual Heritage Medical Research Days*, A305.
16. French, A.S. and Kuster, J.E. (1982) The dynamic sensitivity of a locust multipolar joint receptor. *Society for Neuroscience Abstracts* **8**: 147.2.
15. Kuster, J.E. and French, A.S. (1982) Mechanotransduction in an insect multipolar joint sensillum. *Proceedings of the Canadian Federation of Biological Societies* **25**: 9.
14. Kuster, J.E. and French, A.S. (1982) Mechanotransduction in bipolar and multipolar insect sensory neurons. *Bulletin of the Canadian Society of Zoology* **13**: 41.
13. French, A.S. and Kuster, J.E. (1981) Sensory transduction in the cockroach femoral tactile spine. *Society for Neuroscience Abstracts* **7**: 250.
12. French, A.S. (1980) White noise analysis of light transduction in the fly compound eye using an averaging technique to improve high frequency measurements. *Proceedings of the Australian Physiological and Pharmacological Society* **11**: 62P.
11. French, A.S. (1979) Linear frequency domain analysis of phototransduction in the fly compound eye reveals temporal resonance behavior. *Society for Neuroscience Abstracts* **5**: 2637.
10. Bush, B.M.H., DiCaprio, R.A. and French, A.S. (1978) White noise analysis of a non-spiking stretch receptor. *Journal of Physiology* **277**: 15P.
9. French, A.S. (1977) The frequency domain approach to nonlinear analysis of neural coding. *Society for Neuroscience Abstracts* **3**: 135.
8. French, A.S. and Järvillehto, M. (1977) An analysis of the time dependent behaviour of fly retinula cells by stimulation with random (white noise) light fluctuations. *Proceedings of the Australian Physiological and Pharmacological Society* **8**: 93P.

7. DiCaprio, R.A. and French, A.S. (1973) Chemically mediated excitation of Retzius cells by a fast pathway in the CNS of the leech, *Hirudo medicinalis*. Proceedings of the Canadian Federation of Biological Societies **16**: 94.
6. French, A.S. (1972) Some problems in the transmission of information by neuronal spike trains. Joint meeting of the American Statistical Association, the Biometrical Society and the Institute of Mathematical Statistics, p. 149.
5. Bradley, A.B., DiCaprio, R.A. and French, A.S. (1972) Cytological investigations of identifiable nerve cells in the CNS of the cockroach, *Periplaneta americana*, and of the leech, *Hirudo medicinalis*. Proceedings of the Canadian Federation of Biological Societies **15**: 215.
4. Holden, A.V. and French, A.S. (1971) Spectral analysis of neuronal interactions. Proceedings of the International Union of Physiological Sciences **9**: 256.
3. Holden, A.V. and French, A.S. (1971) Spectral analysis of receptor dynamics. Canada Physiology **2**: 14.
2. Stein, R.B. and French, A.S. (1969) Responses of neural analogs to sinusoidally modulated inputs. Proceedings of the Canadian Federation of Biological Societies **12**: 206.
1. French, A.S. and Stein, R.B. (1969) On-line analysis of neuronal spike trains using a general purpose digital computer. Journal of Physiology **207**: 12P.