

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Stephen W. Jones		POSITION TITLE Professor	
eRA COMMONS USER NAME SWJONES			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Michigan State University, East Lansing, MI	B. S.	1971-1974	Biochemistry
Cornell University, Ithaca, NY	Ph. D.	1974-1979	Neurobiology
Cornell University, Ithaca, NY	Postdoctoral	1979-1982	Neurobiology
SUNY at Stony Brook, Stony Brook, NY	Postdoctoral	1982-1984	Neurobiology

Positions and Honors

1979–1982 Postdoctoral Fellow (Muscular Dystrophy Association) & Research Associate, Department of Neurobiology & Behavior, Cornell University, Ithaca, NY.
Advisor: Dr. Miriam M. Salpeter

1982–1984 Postdoctoral Fellow (NIH) & Research Associate, Dept. Neurobiology & Behavior, SUNY at Stony Brook, Stony Brook, NY. Advisor: Dr. Paul R. Adams

1984–1986 Research Assistant Professor, Dept. Neurobiology & Behavior, SUNY at Stony Brook, NY

1986–date Assistant Professor (1986-1991), Associate Professor (1991-2003), Professor (2003-date)
Department of Physiology & Biophysics, Case Western Reserve Univ., Cleveland, OH

National Merit Scholarship, 1971–1972; Phi Beta Kappa; NSF Graduate Fellowship, 1974–1977; Muscular Dystrophy Assoc. Postdoctoral Fellowship, 1979–1981; NIH Postdoctoral Fellowship, 1983–1984; President, Cleveland chapter of Society for Neuroscience, 1991; member Society for Neuroscience (1980–date), Biophysical Society (1985–date), AAAS (1984–date). AHA Established Investigator Award, 1991–1996; NIH grant, 1984–2008.

Editorial board, Journal of General Physiology 1992–date, Journal of Physiology 1998–2005. Ad hoc reviewer for >150 manuscripts at >30 other journals. Ad hoc grant review for NIH Neurological Sciences 2 (March 1996), NIH Bioengineering Research Partnerships (August 2005), NIH program project site visits (3), NSF. Invited seminars at symposia (4), Gordon Conferences (4), universities (23). Instructor for Methods in Computational Neuroscience course (1993) and Neurobiology course (1985–1997), Marine Biological Laboratory, Woods Hole, MA.

Peer-reviewed publications

Jones SW, Galasso RT, O'Brien RD (1977) Nicotine and α -bungarotoxin binding to axonal and non-neural tissues. J Neurochem 29:803-809.

Jones SW, Thompson WR (1980) Preparation and characterization of ^3H -labeled α -bungarotoxin. Analyt Biochem 101:262-270.

Jones SW, Sudershan P, O'Brien RD (1981) α -Bungarotoxin binding in house fly heads and *Torpedo* electroplax. J Neurochem 36:447-453.

Jones SW, Sumikawa K (1981) Quinuclidinyl benzilate binding in house fly heads and rat brain. J Neurochem 36:454-459.

Loring RH, Jones SW, Matthews-Bellinger J, Salpeter MM (1982) ^{125}I - α -Bungarotoxin. Effects of radiodecomposition on specific activity. J Biol Chem 257:1418-1422.

- Jones SW, Salpeter MM (1983) Absence of [¹²⁵I] α -bungarotoxin binding to motor nerve terminals of frog, lizard and mouse muscle. *J Neurosci* 3:326-331.
- Adams PR, Brown DA, Jones SW (1983) Substance P inhibits the M current in bullfrog sympathetic neurones. *Br J Pharmacol* 70:330-333.
- Jones SW, Adams PR, Brownstein MJ, Rivier JE (1984) Teleost luteinizing hormone-releasing hormone: Action on bullfrog sympathetic ganglia is consistent with role as neurotransmitter. *J Neurosci* 4:420-429.
- Jones SW (1985) Muscarinic and peptidergic excitation of bull-frog sympathetic neurones. *Journal of Physiology* 366:63-87.
- Jones SW (1987) A muscarine-resistant M-current in C cells of bullfrog sympathetic ganglia. *Neurosci Lett* 74:309-314.
- Jones SW (1987) Chicken II luteinizing hormone-releasing hormone inhibits the M current of bullfrog sympathetic neurons. *Neurosci Lett* 80:180-184.
- Jones SW (1987) Sodium currents in dissociated bull-frog sympathetic neurones. *J Physiol* 389:605-627.
- Jones SW, Marks TN (1989) Calcium currents in bullfrog sympathetic neurons. I. Activation kinetics and pharmacology. *J Gen Physiol* 94:151-167.
- Jones SW, Marks TN (1989) Calcium currents in bullfrog sympathetic neurons. II. Inactivation. *J Gen Physiol* 94:169-182.
- Jones SW (1989) On the resting potential of isolated frog sympathetic neurons. *Neuron* 3:153-161.
- Elmslie KS, Zhou W, Jones SW (1990) LHRH and GTP- γ -S modify calcium current activation in bullfrog sympathetic neurons. *Neuron* 5:75-80.
- Jones SW, Jacobs LS (1990) Dihydropyridine actions on calcium currents of frog sympathetic neurons. *J Neurosci* 10:2261-2267.
- Marks TN, Dubyak GR, Jones SW (1990) Calcium currents in the A7r5 smooth muscle-derived cell line. *Pflügers Archiv* 417:433-439.
- Jones SW (1991) Time course of receptor-channel coupling in frog sympathetic neurons. *Biophys J* 60:502-507.
- Giannattasio B, Jones SW, Scarpa A (1991) Calcium currents in the A7r5 smooth muscle-derived cell line. Calcium-dependent and voltage-dependent inactivation. *J Gen Physiol* 98:987-1003.
- Obejero-Paz CA, Jones SW, Scarpa A (1991) Calcium currents in the A7r5 smooth muscle-derived cell line. Increase in current and selective removal of voltage-dependent inactivation by intracellular trypsin. *J Gen Physiol* 98:1127-1140.
- Marks TN, Jones SW (1992) Calcium currents in the A7r5 smooth muscle-derived cell line. An allosteric model for calcium channel activation and dihydropyridine agonist action. *J Gen Physiol* 99:367-390.
- Thévenod FT, Jones SW (1992) Cadmium block of calcium current in frog sympathetic neurons. *Biophys J* 63:162-168.
- Elmslie KS, Kammermeier PJ, Jones SW (1992) Calcium current modulation in frog sympathetic neurones: L-current is relatively insensitive to neurotransmitters. *J Physiol* 456:107-123.
- van Lunteren E, Elmslie KS, Jones SW (1993) Effects of temperature on calcium current of bullfrog sympathetic neurons. *J Physiol* 466:81-93.
- Elmslie KS, Werz MA, Overholt JL, Jones SW (1993) Intracellular ATP and GTP are both required to preserve modulation of N-type calcium channel current by norepinephrine. *Pflügers Arch* 423:472-479.
- Werz MA, Elmslie KS, Jones SW (1993) Phosphorylation enhances inactivation of N-type calcium channel current in bullfrog sympathetic neurons. *Pflügers Arch* 424:538-545.
- Obejero-Paz CA, Lakshmanan M, Jones SW, Scarpa A (1993) Effects of dexamethasone on L-type calcium currents in the A7r5 smooth muscle-derived cell line. *FEBS Lett* 333:73-77.

- Elmslie KS, Kammermeier PJ, Jones SW (1994) Reevaluation of Ca²⁺ channel types and their modulation in bullfrog sympathetic neurons. *Neuron* 13:217-228.
- Elmslie KS, Jones SW (1994) Concentration dependence of neurotransmitter effects on calcium current kinetics in frog sympathetic neurons. *J Physiol* 481:35-46.
- Zhou W, Jones SW (1995) Surface charge and calcium channel saturation in bullfrog sympathetic neurons. *J Gen Physiol* 105:441-462.
- Zhou W, Jones SW (1996) The effects of external pH on calcium channel currents in bullfrog sympathetic neurons. *Biophys J* 70:1326-1334.
- Block BM, Jones SW (1996) Ion permeation and block of M-type and delayed rectifier potassium channels. Whole cell recordings from bullfrog sympathetic neurons. *J Gen Physiol* 107:473-488.
- Block BM, Jones SW (1997) Delayed rectifier of bullfrog sympathetic neurons: Ion-ion competition, asymmetric block, and effects of ions on gating. *J Physiol* 499:403-416.
- Kammermeier PJ, Jones SW (1997) High-voltage-activated calcium currents in neurons acutely isolated from the ventrobasal nucleus of the rat thalamus. *J Neurophysiol* 77:465-475.
- Kammermeier PJ, Jones SW (1998) Facilitation of L-type calcium current in thalamic neurons. *J Neurophysiol* 79:410-417.
- Klemic KG, Shieh C-C, Kirsch GE, Jones SW (1998) Inactivation of Kv2.1 potassium channels. *Biophys J* 74:1179-1189.
- Block BM, Stacey WC, Jones SW (1998) Surface charge and lanthanum block of calcium current in bullfrog sympathetic neurons. *Biophys J* 74:2278-2284.
- Klemic KG, Durand DM, Jones SW (1998) Activation kinetics of the delayed rectifier potassium current of bullfrog sympathetic neurons. *J Neurophysiol* 79:2345-2357.
- Obejero-Paz CA, Jones SW, Scarpa A (1998) Multiple channels mediate calcium leakage in the A7r5 smooth muscle-derived cell line. *Biophys J* 75:1271-1286.
- Serrano JR, Perez-Reyes E, Jones SW (1999) State-dependent inactivation of the α 1G T-type calcium channel. *J Gen Physiol* 114:185-201.
- Frazier CJ, George EG, Jones SW (2000) Apparent change in ion selectivity caused by changes in intracellular K⁺ during whole-cell recording. *Biophys J* 78:1872-1880.
- Serrano JR, Dashti SR, Perez-Reyes E, Jones SW (2000) Mg²⁺ block unmasks Ca²⁺/Ba²⁺ selectivity of α 1G T-type calcium channels. *Biophys J* 79:3052-3062.
- Klemic KG, Kirsch GE, Jones SW (2001) U-type inactivation of Kv3.1 and *Shaker* potassium channels. *Biophys J* 81:814-826.
- Frazier CJ, Serrano JR, George EG, Yu X, Viswanathan A, Perez-Reyes E, Jones SW (2001) Gating kinetics of the α 1I T-type calcium channel. *J Gen Physiol* 118:457-470.
- Obejero-Paz CA, Gray IP, Jones SW (2004) Y³⁺ block demonstrates an intracellular activation gate for the α 1G T-type Ca²⁺ channel. *J Gen Physiol* 124:631-640.
- Jones SW, Friel DD (2006) The amplitude distribution of release events through a fusion pore. *Biophys J* 90:L39-41.
- Estacion M, Sinkins WG, Jones SW, Applegate MA, Schilling W (2006) Human TRPC6 expressed in HEK 293 cells forms non-selective cation channels with limited Ca²⁺ permeability. *J Physiol* 572:359-377.
- Iancu RI, Jones SW, Harvey RD (2007) Compartmentation of cAMP signaling in cardiac myocytes. A computational study. *Biophys J in press*

Research Support

NS 24471-20 Jones (PI) 3/1/2004 – 2/28/2008

NIH/NINDS

Ion channels of neurons

Mechanisms of gating of voltage-dependent ion channels, specifically T-type calcium channels and Kv-type delayed rectifier potassium channels.

Role: PI