BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Stuart, Ann Elizabeth	Professor of Cell and Molecular Physiology
eRA COMMONS USER NAME	

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
Swarthmore College, Swarthmore, PA	BA	1965	Zoology
Yale University, New Haven, CT	PhD	1969	Physiology
Harvard Medical School, Boston, MA	postdoc	1969-1971	Neurochemistry
UCLA Medical School, Los Angeles, CA	postdoc	1971-1973	Neurophysiology

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

A. Positions and Honors

Positions and Employment

1974-1978 Assistant Professor of Neurobiology, Harvard Medical School
1978 Associate Professor of Neurobiology, Harvard Medical School
1978-1987 Associate Professor of Physiology and Ophthalmology, University of North Carolina at Chapel Hill
1987- Professor of Cell and Molecular Physiology, University of North Carolina at Chapel Hill

Other Experience and Professional Memberships

1974-1975 Co-instructor, "The Nervous System of the Leech," Cold Spring Harbor Laboratory
1980-1983 Member, Visual Disorders Study Section, NIH
1979-1983 Trustee, Marine Biological Laboratory, Woods Hole
1983-1990 Associate Editor, Journal of Neuroscience
1983-1986 Program Committee, Society for Neuroscience
1986-1993 Trustee, Marine Biological Laboratory, Woods Hole
1989-1992 Committee to Select Grass Lecturer, Society for Neuroscience
1992-1994 Member, Review Panel, Howard Hughes Medical Institute, Postdoctoral Research Fellowships for Physicians Program
1993-1997 Member, Science Council, Marine Biological Laboratory, Woods Hole
1995,1997 Member, Review Panel, National Research Council, Howard Hughes Medical Institute Predoctoral Fellowships in Biological Sciences Program
2001-2003 Member, Advisory Committee on Brain Education, Biological Sciences Curriculum Study Advisory Panel
2005, 2007 Advisor to the Fellows of the Grass Foundation at the Marine Biological Laboratory
Ongoing Reviewer for Journal of Comparative Neurology, Journal of Neurochemistry, Journal of Neurophysiology, Visual Neuroscience, Journal of Neuroscience, Biological Bulletin

Honors

1973-1978 Research Career Development Award, NEI
1980 R. J. Reynolds Junior Faculty Development Award
1981 The MBL Award, Best Scientific Paper, General Scientific Meetings
1982 Fight for Sight Citation for Best Poster in Basic Research at the Annual Meeting of the Association for Research in Vision and Ophthalmology

2002 Distinguished Marine Neuroscientist Award, University of Miami
2007 Educator of the Year award, Faculty of Undergraduate Neuroscience

B. Selected peer-reviewed publications (in chronological order).

Stuart, A.E. (1969). Excitatory and inhibitory motoneurons in the central nervous system of the leech. Science 165, 817-819.

Stuart, A.E. (1970). Physiology and morphological properties of motoneurons in the central nervous system of the leech. J.Physiol. 209, 627-646.

Hagiwara, S., Eaton, D.C., Stuart, A.E. and Rosenthal, N.P. (1972). Cation selectivity of the resting membrane of squid axon. J.Memb.Biol. 9, 373-384.

Stuart, A.E., Hudspeth, A.J. and Hall, Z.W. (1974). Vital staining of specific monoamine-containing cells in the leech nervous system. Cell Tiss. Res. 153, 55-61.

Ozawa, S., Hagiwara, S., Nicolaysen, K. and Stuart, A.E. (1976). Signal transmission from photoreceptors to ganglion cells in the visual system of the giant barnacle. Cold Spring Harbor Symp. Quant.Biol. XL, 536-570.

Hudspeth, A.J. and Stuart, A.E. (1977). Morphology and responses to light of the soma, axon and terminal regions of individual photoreceptors of the giant barnacle. J.Physiol. 272, 1-23.

Hudspeth, A.J., Poo, M.M. and Stuart, A.E. (1977). Passive signal propagation and membrane properties in median photoreceptors of the giant barnacle. J.Physiol. 272, 25-43.

Ross, W.N. and Stuart, A.E. (1978). Voltage sensitive calcium channels in the presynaptic terminals of a decrementally- conducting photoreceptor. J.Physiol. 274, 173-191.

Stuart, A.E. and Oertel, D. (1978). Neuronal properties underlying processing of visual information in the barnacle nervous system. Nature 275, 287-290.

Edgington, D.R. and Stuart, A.E. (1979). Calcium channels in the high resistivity axonal membrane of photoreceptors of the giant barnacle. J.Physiol. 294, 433-445.

Oertel, D. and Stuart, A.E. (1981). Transformation of signals by interneurons in the barnacle's visual pathway. J.Physiol. 311, 127-146.

Edgington, D.R. and Stuart, A.E. (1981). Properties of tetraethyl-ammonium ion-resistant K+ channels in the photoreceptor membrane of the giant barnacle. J.Gen. Physiol. 77, 629-646.

Oland, L.A., French, K.A., Hayashi, J.H. and Stuart, A.E. (1983). The lateral visual pathway of the giant barnacle. J.Neurophysiol. 49, 516-527.

Schnapp, B.J. and Stuart, A.E. (1983). Synaptic contacts between physiologically identified neurons in the visual system of the barnacle. J.Neurosci. 3, 1100-1115.

Timpe, L.C. and Stuart, A.E. (1984). Is Gamma-aminobutyric acid the neurotransmitter of barnacle photoreceptors? Brain Res. 307, 225-231.

Kaneko, A. and Stuart, A.E. (1984). Coupling between horizontal cells in the carp retina revealed by diffusion of Lucifer Yellow. Neurosci.Letters 47, 1-7.

Timpe, L.C. and Stuart, A.E. (1985). Acetylcholine depolarizes barnacle photoreceptors. J.Exp. Biol. 117, 481-485.

Hayashi, J.H., Moore, J.W., and Stuart, A.E. (1985). Adaptation in the input/output relation of the synapse made by the barnacle's photoreceptor. J.Physiol. 368, 179-195.

Oland, L.A. and Stuart, A.E. (1986). Pattern of convergence of the receptors of the barnacle's three ocelli onto second-order cells. J.Neurophysiol. 55, 882-895.

Oland, L.A., Stuart, A.E., Hayashi, J.H., Callaway, (1987). Voltage spread in an identified interneuron of the barnacle's visual system. J.Neurophysiol. 58, 1420-1430.

Davis, R.E. and Stuart, A.E. (1988). A persistent TTX-sensitive sodium current in an invertebrate neuron with neurosecretory ultrastructure. J.Neuroscience. 8:3978-3991.

Callaway, J.C., Stuart, A.E., and Edwards, J.E. (1989). Immunocytochemical evidence for the presence of histamine and GABA in the photoreceptors of the barnacle, Balanus nubilus. Vis. Neurosci. 3:289-299.

Callaway, J.C. and Stuart, A.E. (1989). A comparison of the responses to light and to GABA of cells postsynaptic to barnacle photoreceptors (I-cells). Vis. Neurosci. 3:301-310.

Callaway, J.C. and Stuart, A.E. (1989). Biochemical and physiological evidence that histamine is the transmitter of barnacle photoreceptors. Vis. Neurosci. 3:311-325.

Gwilliam, G.F. and Stuart, A.E. (1990). Characteristics of neurones projecting from the supraesophageal ganglion in the shadow reflex pathway of the barnacle. J. exp. Biol. 151:83-107.
Battelle, B-A., Calman, B.G., Andrews, A.W., Greico, F.D., Mleziva, M.B., Callaway, J.C., and Stuart, A.E. (1991). Histamine: a putative afferent neurotransmitter in Limulus eyes. J. Comp. Neurol. 305:527-542.
Hayashi, J.H. and Stuart, A.E. (1993). Currents in presynaptic terminals of barnacle photoreceptors. Vis. Neurosci. 10:261-270
Callaway, J.C., Lasser-Ross, N., Stuart, A.E., and Ross, W.N. (1993) Dynamics of intracellular free calcium concentration in the presynaptic arbors of individual barnacle photoreceptors. J.Neurosci. 13:1157-1166.
Stuart, A.E., Morgan, J.R., Mekeel, H.E., Kempter, E. and Callaway, J.C. (1996) Selective, activity-dependent uptake of histamine into an arthropod photoreceptor. J. Neurosci. 16:3178-3188.
Callaway, J.C. and Stuart, A.E. (1999) The distribution of histamine and serotonin in the barnacle's nervous system. Microscopy Research and Technique 44:94-104
Morgan, J.R., Gebhardt, K.A., and Stuart, A.E. (1999) Uptake of precursor and synthesis of transmitter in a histaminergic photoreceptor. J. Neurosci. 19:1217-1225.
Stuart, A.E., Mekeel, H.E., and Kempter, E. (2002) Uptake of the neurotransmitter histamine into the eyes of larvae of the barnacle (*Balanus amphitrite*) Biol. Bull. 202:53-60.
Stuart, A.E, Gebhardt, K.A., Vogel, S.N., Rodriguez, O. (2002) Does the neurotransmitter transporter underlie adaptation at a histaminergic photoreceptor synapse? Vis. Neurosci. 19:1-13.
Thimgan, M., Berg, J., and Stuart, A.E. (2006) Comparative sequence analysis and tissue localization of members of the SLC6 family of transporters in adult *Drosophila melanogaster*. J. Exp Biol 209:3383-3404. (Subject of commentary in *Inside JEB*.)

Reviews and chapters:

Stuart, A.E. (1983). Vision in Barnacles. Trends in Neurosciences 6, 137-140.
Stuart, A.E., Hayashi, J.H., Moore, J.W., and Davis, R.E. (1986). Currents in the synaptic terminals of barnacle photoreceptors. In Calcium, Neuronal Function, and Transmitter Release, R. Rahamimoff and B. Katz, eds. Martinus Nijhoff. pp. 443-455.
Lasser-Ross, N., Callaway, J.C., Stuart, A.E., and Ross, W.N. (1991). Calcium dynamics in the presynaptic terminal of barnacle photoreceptors. in Calcium entry and action at the presynaptic nerve terminal, Annals of the New York Academy of Sciences 635:475-476.
Stuart, A.E. and Callaway, J.C. (1991). Histamine: the case for a photoreceptor's neurotransmitter. Neurosci. Res. Suppl. 15, S13-S23.
Edgington, D.R. and Stuart, A.E. (1991). Responses to light generated in the presynaptic terminals of barnacle photoreceptors. in Basic Neurobiology: Half a Century and Future, Proc. of 16th SEIRIKEN Conf., H. Ohmori and S. Ebashi, Eds. Biomed. Res. Foundation, Tokyo.
Stuart, A.E. (1999) From fruit flies to barnacles, histamine is the neurotransmitter of arthropod photoreceptors. Neuron 22:431-433.
Stuart, A.E., Borycz, J. and Meinertzhagen, I.A. (2007) The dynamics of signaling at the histaminergic photoreceptor synapse of arthropods. Prog. Neurobiol. 82:202-227.

Educational, Interactive CD-ROM and Manual with Hyperlinked Tutorials:

Moore, J.W. and Stuart, A.E. (2000) Neurons in Action: Computer Simulations with NeuroLab. Sinauer Associates, Inc. Sunderland, MA:
Moore, J.W. and Stuart, A.E. (2007) Neurons in Action, Version 2: Tutorials and Simulations Using NEURON. Sinauer Assocs. Inc, Sunderland, MA

C. Research Support

Ongoing Educational Technology Support

NSF DUE-CCLI-0442748 Stuart (PI) 02/15/05 – 01/31/09
"*Neurons in Action Version 2*: Understanding the Behavior of Normal and Abnormal Neurons"
These funds support expansion and dissemination of virtual lab tutorials in neurophysiology that use the neuronal simulator NEURON, published as *Neurons in Action Version 2.*
Role: PI

Completed Research Support

R21 MH65501 Stuart (PI) 4/1/02 – 3/31/04

“Identifying and characterizing histamine transporters”
The specific aims of this project were to clone a histamine transporter from an invertebrate (*Drosophila, Balanus, Limulus*), express this protein in oocytes, and characterize it using electrophysiological techniques.
Role: PI