

CURRICULUM VITAE

(Update – March, 2002)

Georgia Ann Bishop

Education: B.S. Physical Therapy, Northwestern University, Chicago, Illinois, 1969
 Ph.D. Anatomy-Neurophysiology, Wayne State University, Detroit, Michigan, 1977

Professional History:

Staff Physical Therapist, Resurrection Hospital, Chicago, Illinois, 1969-1973.
 Graduate Teaching Assistant, Wayne State University, Department of Anatomy, Detroit, Michigan, 1973-1977.
 Specialist, Michigan State University, Department of Anatomy, East Lansing, Michigan,
 Jan.-June, 1978.
 Instructor, Michigan State University, Department of Anatomy, East Lansing, Michigan, 1978-1979.
 University Post Doctoral Fellow, The Ohio State University, Department of Anatomy, Columbus, Ohio, 1979-1980.
 Assistant Professor, The Ohio State University, Department of Anatomy, Columbus, Ohio,
 1980-1986.
 Associate Professor, The Ohio State University, Department of Anatomy, Columbus, Ohio,
 1986-1993.
 Professor, The Ohio State University, Department of Cell Biology, Neurobiology & Anatomy, Columbus, OH 1993-
 1998.
 Professor, The Ohio State University, Department of Neuroscience, Columbus, OH 1998-present.

Awards & Honors:

1975 Sigma Xi Summer Research Award, Wayne State University, Detroit, Michigan
 1977 Duncan McCarthy Memorial Award, Michigan Chapter, Society for Neuroscience
 1979 University Post Doctoral Fellowship, The Ohio State University, Columbus, Ohio
 1991 - 94 Invited Speaker at Parent's Day, The Ohio State University, College of Medicine
 1992 Preclinical Teaching Award from Medical Class High School
 1994 Outstanding Education Award from Wauseon High School
 1995 - 98 Selected 1 of 5 best teachers by Med I class

Professional Development:

Feb - March 1995: Sabbatical at Brain Research Institute, Zurich, Switzerland with Dr. Kim Do to learn new
 experimental techniques to analyze peptide release in the cerebellum
 August 1995: Return to Brain Research Institute, Zurich, Switzerland to continue studies
 February 1996: Return to Brain Research Institute, Zurich, Switzerland to continue studies
 June 1996: Return to Brain Research Institute, Zurich, Switzerland to continue studies
 April 1998 Return to Brain Research Institute, Zurich, Switzerland to continue studies

Professional Organizations:

Society for Neuroscience
 Cajal Club
 American Association for the Advancement of Science
 International Brain Research Organization

Editorial Board Member:

Experimental Neurology

Committee Membership:**University**

1988-89 Benefits Evaluation Committee
 1996 Search Committee for Vice Provost for Graduate Studies and Dean of the Graduate School
 1996-Present Alternate to Institutional Laboratory Animal Care and Use Committee
 1997-1999 Commission on Faculty Development – Chair Subcommittee to review Survey of Chairs
 2002-Present Promotion & Tenure Committee Member

College of Medicine

1989 Subcommittee on Teaching by the Faculty for Fall Faculty Teaching Retreat
 1990-92 Med I Academic Program Committee
 1990-92 Committee to Review Roessler Research Scholarship applications
 1994-95 Dean's Research Advisory Committee
 1996 Committee to Develop Curriculum for Integrated Basic Biomedical Science Program
 1999-2000 2006 Initiative Task Force on the PreClinical Curriculum
 1992-Present Co-chair, Lab Animal Care and Use Committee,
 1997-Present Academic Review Board
 1999-Present Classroom Technology Committee
 1999-Present Graduate Education Committee
 2001- Chair, Graduate Education Committee
 2001-Present Grievance and Appeal Committee
 2002-Present Promotion and Tenure Committee

Departmental

1981-85 Graduate Studies Committee
 1986-90 Graduate Studies Committee
 1989 Ad Hoc Committee to review Departmental Pattern of Administration
 1993-1998 Graduate Studies Committee
 1993-Present Promotion and Tenure Committee, Member
 1993-Present Executive Committee
 1999-Present Promotion and Tenure Committee, Chair

Interdepartmental

1996- 2000 Neuroscience Graduate Studies Committee, Member
 2001-Present Neuroscience Graduate Studies Committee, Member
 2001-Present Module Director for Neurobiological Basis of Disease Module, IBGP Program

Service:**University**

Served as judge on review panel for Instructional Enhancements Grants submitted to the Council for Educational Excellence. Jan. 1988.

College of Medicine

Served as judge for Bennett Day Presentations. 1988, 1990, 1992, 1996, 2002
 Served as judge for Landacre Day Presentations. 1989, 1990, 2001

Departmental

Morgue Supervisor, 1984-1992

Interdepartmental

Powerpoint Workshop

National

Member of Nominating Committee for Cajal Club. 1987

Ad Hoc Member, NIH Study Section MDCN7, October 1999

Public

October 24, 1986 Assisted the Industrial Commission of Ohio in the preparation of a videotape on the anatomy of the back and upper limb to be used in their Ergonomics Program.

1989-To present Gross Anatomy demonstration for students from:

- | | |
|---------------------------------------|---------------------------------|
| 1. Worthington Christian High School | 6. Columbus State University |
| 2. Maranatha High School | 7. Licking Valley Schools |
| 3. Teays Valley High School | 8. Mt. Vernon Nazarene College |
| 4. Columbus College of Art and Design | 9. Cedarville College |
| 5. Wauseon High School Toledo, Ohio | 10. Fort Hayes Technical School |
| | 11. Marysville High School |

January 1991 - Demonstration of larynx to paramedic students enrolled in the Columbus Division of Fire Paramedic class.

March 1997 - Invited speaker for women in science series at Mt. Vernon Nazarene College.

2001, 2002 – Presented Neuroscience demonstration for Big Walnut Middle School

2000,2002 – Presented Neuroscience demonstration at Lake Ridge Academy, Lake Ridge, OH

Students:**Served as Ph.D. advisor for:**

Christopher Kerr - 1988-1991

Patrick Kitzman - 1991-1994

Thomas Nelson (co-advisor) - 1991-1995

Kathleen Gregg - 1993-1997

Served on General (Candidacy) Exam Committee for:

Therese Cabana – 1981 (Department of Anatomy)

Theresa Blake – 1985 (Department of Anatomy)

James Walker – 1987 (Department of Anatomy)

John Griffin - 1990 (Department of Physiology)

Christopher Kerr - 1990 (Department of Anatomy, Chaired)

Patrick Kitzman - 1992 (Department of Anatomy, Chaired)

Thomas Nelson - 1993 (Neuroscience Graduate Studies Program) (co-chaired)

Penny Burgoon - 1994 (Department of Physiology)

Christine Kondratik - 1996 (MCDB)

K.C. Dowdell - 1997 (Neuroscience Graduate Studies Program)

Ann Albers - 1994 (Neuroscience Graduate Studies Program)

Kathleen Gregg - 1995 (Neuroscience Graduate Studies Program) - Chaired

Kennichi (Casey) Dowdell - 1997 (Neuroscience Graduate Studies Program)

Ray Kowalewski – 1999 (Neuroscience Graduate Studies Program)

Byeong Keun Ha – 1999 (Neuroscience Graduate Studies Program)

Greg Emch – 1999 (Neuroscience Graduate Studies Program)

Yanmei Zhao - March 2001 (Neuroscience Graduate Studies Program)

T. Bucky Jones - August 2001 (Neuroscience Graduate Studies Program)

Gretchen Neigh-McCandless – September, 2001 (Neuroscience Graduate Studies Program)

Served on Dissertation Committee of:

Jay Dean - 1986 (Department of Physiology)
 James Walker – 1988 (Department of Anatomy)
 Margarita Curras - 1989 (Department of Physiology)
 John Griffin - 1993 (Department of Physiology)
 Thomas Nelson – 1995 (Neuroscience Graduate Studies Program)
 Penny Burgoon - 1997 (Department of Physiology)
 Christine Kondratik - 1998 (MCDB)
 Byeong Keun Ha – 1999 (Neuroscience Graduate Studies Program)
 Yan Mei Zhao – 2002 (Neuroscience Graduate Studies Program)
 Greg Emch – 2002 (Neuroscience Graduate Studies Program)

Served as advisor for Howard Hughes Program Student:

Brian Johnson - 2001 (Washington and Jefferson College)

Served as advisor for Roessler Student (College of Medicine):

Steven Dibert - 1987, 1988
 Scott Stallkamp - 1992
 Amanda Peltier - 1995, 1996
 Charles Seelandt – 1999, 2000. (co-advisor)

Other Professional Activities:

Program Chairman, Annual Spring Meeting of the Michigan Chapter, Society for Neuroscience, East Lansing, Michigan, May, 1979.
 Secretary-Treasurer, Central Ohio Chapter, Society for Neuroscience, 1983-1984.
 President-Elect, Central Ohio Chapter, Society for Neuroscience, 1984-1985.
 President, Central Ohio Chapter, Society for Neuroscience, 1985-86.
 Co-chair of slide session at 101st annual meeting of the American Association of Anatomists, April, 1988.
 Member Special Emphasis Panel to review grant application NIMH
 Ad Hoc Reviewer, NSF
 Ad Hoc Referee, Journal of Comparative Neurology
 Ad Hoc Referee, Experimental Neurology
 Ad Hoc Referee, The Behavioral & Brain Sciences
 Ad Hoc Referee, Journal of Neuroscience Methods
 Ad Hoc Referee, Neuroscience
 Ad Hoc Referee, Journal of Histochemistry & Cytochemistry
 Ad Hoc Referee, Journal of Chemical Neuroanatomy
 AdHoc Referee, Journal of Neurophysiology

Teaching Experience:

Neuroanatomy, Lecture and Lab for Allied Health Students, 1974.
 Neuroanatomy, Lecture and Lab for Medical Students, 1975.
 Histology, Lecture and Lab for Medical Students, 1975-1976.
 Gross Anatomy - Limbs and Back, Lab for Phys. Ed. Students, 1976.
 Gross Anatomy - Head and Neck, Lab for Medical Students, 1977.
 Small Animal Gross Anatomy (Dog) - Lecture and Lab for Veterinary Students, 1979.
 Neurosurgical Techniques - Lecture and Lab for Graduate Students, 1982- present.
 Preparation of Microfiche for cross sectional anatomy (September 1986-Feb. 1987).
 Preparation of prosections for plastination project. 1988-present.

.Course Director, Medical Gross Anatomy, 1990-1992.

Co-Director, Neuroscience Seminar on Synaptic Mechanisms, 1994

Human Gross Anatomy - Lecture and Lab for Medical Students, 1980-2000.

Fundamentals of Neurophysiology – Lectures for Graduate Students, 1999- present.

Neuroanatomy – Lectures, lab on cerebellum, motor systems, and neurophysiology for Medical Students
1989-present

Journal Publications:

1. Bishop, G.A., R.A. McCrea and S.T. Kitai (1976) A horseradish peroxidase study of the cortico-olivary projection in the cat. *Brain Res.*, 116: 206-311.
2. McCrea, R.A., G.A. Bishop and S.T. Kitai (1977) Intracellular staining of Purkinje cells and their axons with horseradish peroxidase. *Brain Res.*, 118: 132-136.
3. Kitai, S.T., R.A. McCrea, R.J. Preston and G.A. Bishop (1977) Electrophysiological and horseradish peroxidase studies of precerebellar afferents to the nucleus interpositus anterior: I. Climbing fiber system. *Brain Res.*, 122: 197-214.
4. McCrea, R.A., G.A. Bishop and S.T. Kitai (1977) Electrophysiological and horseradish peroxidase studies of precerebellar afferents to the nucleus interpositus anterior: II. Mossy fiber system. *Brain Res.*, 122: 215-228.
5. McCrea, R.A., G.A. Bishop and S.T. Kitai (1978) Morphological characteristics of projection neurons in the nucleus interpositus of the cat cerebellum. *J. Comp. Neural.*, 181: 397-420.
6. Bishop, G.A., R.A. McCrea, J.W. Lighthall and S.T. Kitai (1979) An autoradiographic and HRP study of the projection from the cerebellar cortex to the nucleus interpositus anterior and nucleus interpositus posterior of the cat. *J. Comp. Neur.*, 185: 735-756.
7. Preston, R.J., G.A. Bishop and S.T. Kitai (1979) Medium spiny neuron projection from the rat striatum: an intracellular horseradish peroxidase study. *Brain Res.*, 183: 253-263.
8. Bishop, G.A., R.A. McCrea and J.S. King (1980) An analysis of the morphology and cytology of HRP labeled Purkinje cells. *Brain Res. Bull.*, 5: 563-574.
9. Bishop, G.A., H.T. Chang and S.T. Kitai (1981) Morphological and physiological properties of rat neostriatal neurons: an intracellular HRP study. *Neuroscience*, 7: 179-191.
10. Bishop, G.A. (1982) Pattern of distribution of the local axonal collaterals of Purkinje cells in the intermediate cortex of the anterior lobe and paramedian lobule of the cat cerebellum. *J. Comp. Neur.*, 210: 1-9.
11. King, J.S. and G.A. Bishop (1982) The synaptic features of horseradish peroxidase labeled recurrent collaterals in the ganglionic plexus of the cat cerebellar cortex. *J. Neurocytol.*, 11: 867-880.
12. Bishop, G.A. (1984) The origin of the reticulo-olivary projection in the rat inferior olive. *Neuroscience*, 11:487-496.
13. Bishop, G.A. and R.H. Ho (1984) Substance P and serotonin immunoreactivity in the rat inferior olive. *Brain Res. Bulletin*, 12:105-113.
14. Bishop, G.A. and R.H. Ho (1985) The distribution and origin of serotonin immunoreactivity in the rat cerebellum. *Brain Res.*, 331:195-207.
15. Bishop, G.A., R.H. Ho and J.S. King (1985) An immunohistochemical study of serotonin development in the opossum cerebellum. *Anat. and Embryology*, 171:325-338.
16. Bishop, G.A., R.H. Ho and J.S. King (1985) Localization of serotonin immunoreactivity in the opossum cerebellum. *J. Comp. Neurol.*, 235:301-321.
17. Bishop, G.A. and J.S. King (1985) Reticulo-olivary circuits: An intracellular HRP study in the rat. *Brain Res.*, 371:133-145.
18. King, J.S., R.H. Ho and G.A. Bishop (1986) Anatomical evidence for enkephalin immunoreactive climbing fibers in the opossum's cerebellar cortex. *J. Neurocytol.* 15:545-559.

19. Bishop, G.A., and D.L. O'Donoghue (1986) Heterogeneity in the pattern of distribution of the axonal collaterals of Purkinje cells in zone b of the cat's vermis: an intracellular HRP study. *J. Comp. Neurol.*, 253:483-499.
20. Bishop, G.A. and R.H. Ho (1986) Cell bodies of origin of serotonin immunoreactive afferents to the inferior olivary complex of the rat. *Brain Res.* 399:369-373.
21. King, J.S., J.A. Morgan, G.A. Bishop, J. Hazlett and G.F. Martin (1987) Development of the basilar pons in the North American opossum: Dendrogenesis and maturation of afferent and efferent connections. *Anat. & Embryol.* 176:191-202.
22. Bishop, G.A. (1988) A quantitative analysis of the recurrent collaterals derived from Purkinje cells in zone x of the cat's vermis. *J. Comp. Neurol.*, 274:17-31.
23. Bishop, G.A., R.H. Ho and J.S. King (1988) A temporal analysis of the origin and distribution of serotonergic afferents in the cerebellum of pouch young opossums. *Anat. and Embryol.* 179: 33-48.
24. Walker, J.J., G.A. Bishop, R.H. Ho and J.S. King (1988) Brainstem origin of serotonin- and enkephalin immunoreactive afferents to the opossum's cerebellum. *J. Comp. Neurol.* 276: 481-497.
25. Cummings, S.L., W. Scott Young, G.A. Bishop, E.B. De Souza and J.S. King (1989) Distribution of corticotropin releasing factor in the cerebellum and precerebellar nuclei of the opossum: a study utilizing immunohistochemistry, *In situ* hybridization and receptor binding. *J. Comp. Neurol.* 280: 501-521.
26. O'Donoghue, D.L., J.S. King and G.A. Bishop (1989) Physiological and anatomical studies of the interactions between Purkinje cells and basket cells in the cat's cerebellar cortex: Evidence for a unitary relationship. *J. of Neuroscience.* 9: 2141-2150.
27. O'Donoghue, D.L. and G.A. Bishop (1990) A quantitative analysis of the distribution of Purkinje cell axonal collaterals in different zones of the cat's cerebellum: an intracellular HRP study. *Exp. Brain Res.* 80: 63-71
28. King, J.S. and G.A. Bishop (1990) The distribution and brainstem origin of cholecystokinin-like immunoreactivity in the opossum cerebellum. *J. Comp. Neurol.* 298: 373-384
29. Bishop, G.A. (1990) Neuromodulatory role of corticotropin releasing factor in cerebellar circuitry. *Neuroscience.* 39: 251-257.
30. Kerr, C.H.W. & G.A. Bishop (1991) Topographical organization in the origin of serotonergic projections to different regions of the cat's cerebellar cortex. *J. Comp Neurol.* 304: 502-515.
31. Bishop, G.A. (1991) Physiological interactions between enkephalin and excitatory amino acids in the cerebellar cortex of the opossum *Didelphis marsupialis virginiana*. *Neuroscience.* 42: 449-455.
32. King, J.S. & G.A. Bishop (1992) Ontogenesis of cholecystokinin - like immunoreactivity in the opossum's cerebellum. *Dev. Brain Res.* 65: 237-252.
33. Bishop, G.A. (1992) Calcitonin gene related peptide in efferents to the cat's cerebellar cortex; Distribution and origin. *J. Comp. Neurol.* 322: 201-212.
34. Kerr, C.W. & G.A. Bishop (1992) The physiological effects of serotonin are mediated by the 5HT_{1A} receptor in the cat's cerebellar cortex. *Brain Res.* 591:253-260.
35. Bishop, G.A. & J.S. King (1992) Differential modulation of Purkinje cell activity by enkephalin and corticotropin releasing factor. *Neuropeptides.* 22: 167-174.
36. Bishop, G.A. & C.W. Kerr (1992) The physiological effects of peptides and serotonin on Purkinje cell activity. *Progress in Neurobiology.* 39: 475-492.

37. King, J.S., S.C. Cummings & G.A. Bishop (1992) Peptides in cerebellar circuits. *Progress in Neurobiology*. 39: 423-442.
38. Bishop, G.A. (1993) An analysis of HRP filled basket cell axons in the cat's cerebellum: Morphometry & Configuration. *Anatomy & Embryology*. 188:287-297.
39. King, J.S., YiFei Chen & G.A. Bishop (1993) An analysis of HRP filled basket cell axons in the cat's cerebellum: Synaptic distribution. *Anatomy & Embryology*. 188-299-305
40. Bishop, G.A., YiFei Chen, R.W. Burry & J.S. King (1993) An analysis of GABAergic afferents to basket cell bodies in the cat's cerebellum. *Brain Res*. 623:293-298.
41. Kitzman, P.H. & G.A. Bishop (1994) The origin of serotonergic afferents to the cat's cerebellar nuclei. *J. Comp. Neurol*. 340:541-550.
42. Bishop, G.A. (1995) Calcitonin gene related peptide modulates neuronal activity in the mammalian cerebellar cortex. *Neuropeptide*. 28:85-97.
43. Gilerovitch, H.G., G.A. Bishop, J.S. King & R.W. Burry (1995) The use of electron microscopic immunocytochemistry with silver enhanced 1.4 nm gold particles to localize GAD in the cerebellar nuclei. *J. Histochem-Cytochem*. 43:337-343.
44. Bishop, G.A. (1996) Cholecystokinin modulation of spontaneous and amino acid-induced activity in the opossum cerebellum. *Neuropeptides*. 30:533-540.
45. Kitzman, P.H. and G.A. Bishop (1997) Physiological effects of serotonin on spontaneous and amino acid-induced activation of cerebellar nuclear cells: an in vivo study in the cat. *Progress in Brain Res*. 114:67-81.
46. King, J.S. P.C. Madtes, Jr., G.A. Bishop, T.L. Overbeck (1997) The distribution of corticotropin-releasing factor (CRF), CRF binding sites and CRF receptor mRNA in the mouse cerebellum. *Prog. in Brain Res*. 114:55-66.
47. Gregg, K.V. & G.A. Bishop (1997) Peptide localization in the mouse inferior olive. *J. Chem. Neuroanat*. 12:211-220.
48. Nelson, T.E., J.S. King & G.A. Bishop (1997) The distribution of tyrosine hydroxylase-immunoreactive afferents to the cerebellum differs between species. *J. Comp. Neurol*. 379:1-12.
49. Bishop, G.A. (1998) Brainstem origin of corticotropin releasing factor afferents to the nucleus interpositus anterior of the cat. *J. Chem. Neuroanat*, 15:143-153.
50. Peltier, A.C., Bishop, G.A. (1999) The site of origin of calcitonin gene related peptide-like immunoreactive afferents to the inferior olivary complex of the mouse. *Neuroscience Research*. 34:177-186.
51. Gregg, K.V., Bishop, G.A., King, J.S. (1999) Fine structural analysis of calcitonin gene related peptide in the mouse inferior olivary complex. *J. Neurocytology*. 28: 431-438.
52. Bishop, G.A. and King, J.S. (1999) Corticotropin releasing factor in the embryonic mouse. *Exp. Neurol*. 160:489-499.
53. Ha, B.K., Bishop, G.A., King, J.S., Burry, R.W. (2000) Corticotropin releasing factor induces proliferation of cerebellar astrocytes. *J. Neuroscience Res*. 62:789-798.
54. Bishop, G.A., Seelandt, C.M., and King, J.S. (2000) Cellular localization of corticotropin releasing factor receptors in the adult mouse cerebellum. *Neuroscience* 101: 1082-1092.
55. Tian, Jin Bin and G. A. Bishop (2002) Stimulus-dependent activation of c-fos in neurons and glia in the rat

cerebellum. J. Chem. Neuroanat. In Press

56. Bishop, G.A. (2001) Physiological effects of corticotropin releasing factor on Purkinje cells during postnatal cerebellar development. Neuroscience. In Preparation

Book Chapters:

1. Kitai, S.T. and G.A. Bishop (1978) Intracellular Staining of a Neuron with HRP. In: Neuroanatomical Techniques, 1978 Short Course - Society for Neuroscience, Bethesda, Maryland, pp. 183-184.
2. Kitai, S.T., R.J. Preston, G.A. Bishop and J.D. Kocsis (1979) Striatal Projection Neurons: Morphological and Electrophysiological Studies. In: Advances in Neurology. Vol. 24, Eds.: L.H. Poirer, T.L. Sourkes and P.S. Bedard, Raven Press, New York, pp. 45-51.
3. Kitai, S.T. and G.A. Bishop (1981) HRP II. Intracellular Staining. In: Neuroanatomical Tract Tracing Methods. Eds.: L. Heimer and M. RoBards, Plenum Press, pp. 263-277.
4. Bishop, G.A. and J.S. King (1982) Intracellular horseradish peroxidase injections for tracing neuronal connections. In: Tracing Neuronal Connections with Horseradish Peroxidase. IBRO Handbook Series: Methods in Neurosciences. Ed.: M. Marsel Mesulam, John Wiley and Sons, Ltd., England, pp. 186-247.
5. Martin, G.F., G.A. Bishop, J.L. Culberson, J.S. King, L.C. Laxson, M. Linauts and M. Panneton (1982) Spino-olivo-cerebellar circuits in the North American opossum with notes on their development. In: The Cerebellum: New Vistas. Eds.: S. Palay and V. Chan-Palay, Springer-Verlag, Berlin-Heidelberg-New York, pp. 162-188.
6. Bishop, G.A., T.L. Blake and D.L. O'Donoghue (1987) The distribution pattern of Purkinje cell axon collaterals: variations on a theme. In: New Concepts in Cerebellar Neurobiology. Ed.: J.S. King, Alan R. Liss, New York. pp. 29-56.
7. King, J.S., R.H. Ho and G.A. Bishop (1987) The origin and distribution of enkephalin-like immunoreactivity in the opossum's cerebellum. In: New Concepts in Cerebellar Neurobiology. Ed.: J.S. King, Alan R. Liss, New York. pp. 1-28.
8. Bishop, G.A. and J.S. King (1987) Intracellular staining of neurons in the central nervous system-combined physiological, morphological and cytological analysis of identified neurons. In: Correlative Microscopy: Methods. Ed. M.A. Hayat., Academic Press, New York and London. pp. 121-142.
9. King, J.S., R.H. Ho and G.A. Bishop (1989) Enkephalin immunoreactivity in the inferior olivary complex of the opossum. In: The Olivocerebellar System in Motor Control. Exp. Brain Research Series 17, Ed: Piergiorgio Strata, Springer-Verlag, 177-186.
10. Bishop, G.A., C.W. Kerr, Y.F. Chen, and J.S. King (1993) The serotonergic system in the cat's cerebellum: Origin, ultrastructure and physiological effects. In: Cerebellar Serotonergic System and Ataxia. Eds. P. Trouillas and K. Fuxe, Raven Press, pp. 91-112.
11. King, J.S., J.J. Walker and G.A. Bishop (1993) The brainstem origin and development of serotonin in the opossum cerebellum. In: Cerebellar Serotonergic System and Ataxia. Eds. P. Trouillas and K. Fuxe, Raven Press, pp. 137-154.
12. Bishop, G.A. (2000) Intracellular neuronal marking (HRP, Biocytin and Lucifer Yellow) In: Electrophysiological Methods for the Study of the Mammalian Nervous System, Ed. J. O. Kocsis, Appleton and Lange. In Press

Published Abstracts:

1. Bishop, G.A., R.A. McCrea and S.T. Kitai (1976) Afferent projections to the nucleus interpositus anterior (NIA) and lateral nucleus (LN) of the cat cerebellum. *Anat. Rec.*, 184:360.
2. Bishop, G.A., R.A. McCrea and S.T. Kitai (1976) Ascending and descending projections to the inferior olive of the cat. *Society for Neuroscience Abstracts*, vol. II, Part 1:106.

3. McCrea, R.A., G.A. Bishop and S.T. Kitai (1976) Intracellular staining of Purkinje cells and their axons with horseradish peroxidase. *Society for Neuroscience Abstracts*, Vol. II, Part 1: 113.
4. Bishop, G.A., R.A. McCrea and S.T. Kitai (1977) An electrophysiological and anatomical study of the projection neurons in the nucleus interpositus of the cat. *Anat. Rec.*, 187:537.
5. Bishop, G.A. and S.T.Kitai (1978) The organization of the corticonuclear projection to the nucleus interpositus anterior (NIA) and nucleus interpositus posterior (NIP) of the cerebellum of the cat. *Anat. Rec.*, 190:340.
6. Chang, H.T., G.A. Bishop and S.T. Kitai (1979) Light and electron microscopic analysis of various neostriatal neurons intracellularly labeled with HRP. I. Soma-dendritic morphology. *Society for Neuroscience Abstracts*, 5:220.
7. Bishop, G.A., H.T. Chang and S.T. Kitai (1979) Light and electron microscopic analysis of various neostriatal neurons intracellularly labeled with HRP. II. Patterns of axonal distribution. *Society for Neuroscience Abstracts*, 5:214.
8. Bishop, G.A., J.A. Andrezik, R.J. Preston and J.S. King (1980) An anatomical analysis of axon collaterals from inferior olivary neurons. *Anat. Rec.*, 196:19A.
9. Bishop, G.A., J.S. King and R.A. McCrea (1980) Light and electron microscopic analyses of Purkinje cell axon collaterals: An intracellular HRP study in the cat. *Neuroscience Abstracts*, 6:470.
10. Bishop, G.A. and J.S. King (1981) An anatomical study of the distribution and morphological characteristics of periolivary reticular neurons. *Neuroscience Abstracts*, 7:78.
11. King, J.S., L.C. Laxson and G.A. Bishop (1982) The development of climbing fibers in the opossum. *Symposium Cajal. Horizons in Neuroscience*, Valencia, Spain, p. 56.
12. Bishop, G.A. and R.H. Ho (1982) The distribution of serotonin (5HT) and substance P (SP) in the rat inferior olive. *Neuroscience Abstracts*, 8:123.4.
13. Morgan, J.K., G.A. Bishop and J.S. King (1983) Neuronal maturation in the basilar pons. *Anat. Rec.*, 205:134A.
14. Bishop, G.A., L.C. Laxson, R.H. Ho and J.S. King (1983) Development of afferents to the opossum cerebellum. *International Journal of Developmental Neuroscience*, 1:191.
15. Bishop, G.A. and R.H. Ho (1983) The origin of serotonergic afferents to the cerebellum of the rat. *Neuroscience Abstracts*, 9:1092.
16. King, J.S., R.H. Ho and G.A. Bishop (1983) The distribution and development of serotonin in the opossum cerebellum. *Neuroscience Abstracts*, 9:1092.
17. Bishop, G.A., R.H. Ho and J.S. King (1984) Localization of serotonin immunoreactivity in the deep cerebellar nuclei of the opossum. *Neuroscience Abstracts*, 10:750.
18. King, J.S., R.H. Ho and G.A. Bishop (1984) Development of serotonin (5HT) in the opossum cerebellum. *Neuroscience Abstracts*, 10:750.
19. King, J.S., R.H. Ho and G.A. Bishop (1984) Development of serotonin and enkephalin immunoreactivity in the inferior olivary complex of the opossum. *Trabajos del Instituto Cajal*, 75:124.
20. Bishop, G.A., D.L. O'Donoghue and J.S. King (1985) An analysis of the recurrent collaterals of Purkinje cells in zone b of the cat's vermis, *Neuroscience Abstracts*, 11:688.

21. King, J.S., R.H. Ho and G.A. Bishop (1985) Evidence for enkephalinergic climbing fibers in the opossum's cerebellum, *Neuroscience Abstracts*, 11:183.
22. O'Donoghue, D.L., T.L. Blake, J.S. King and G.A. Bishop (1986) Recurrent axon collaterals of Purkinje cells in zone c, of the cat cerebellum, *Anat. Rec.*, 214: 92A.
23. Walker, J.J., G.A. Bishop, R.H. Ho and J.S. King (1986) The brainstem origin of serotonergic and enkephalinergic projections to the opossum's cerebellum, *Anat. Rec.*, 214:139A.
24. Blake, T.L., D.L. O'Donoghue, J.S. King and G.A. Bishop (1986) An analysis of recurrent collaterals of Purkinje cells in zone a of the cat's vermis. *Anat. Rec.*, 214: 13A.
25. Bishop, G.A. and R.H. Ho (1986) Brainstem origin of serotonergic afferents to the rodent's inferior olivary complex. *Neuroscience Abstracts*, 12:462.
26. King, J.S., R.H. Ho and G.A. Bishop (1986) Cholecystokinin-like immunoreactivity in the cerebellum of the opossum. *Neuroscience Abstracts*, 12:461.
27. O'Donoghue, D.L., J.S. King and G.A. Bishop (1986) The distribution of varicosities derived from Purkinje cell axonal collaterals in different zones of lobule V: An intracellular HRP study in the cat. *Neuroscience Abstracts*, 12:464.
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 75. Tian, J.B. and G. A. Bishop (2001) Corticotropin releasing factor (CRF) is enhanced in cerebellar afferents following high frequency stimulation. *Neuroscience Abst.* 27. In press
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Presentations:

Sackler Colloquia on Neural Signaling, Washington D.C. February 2001 (Poster Presentation). "Evidence that corticotropin releasing factor plays distinct roles in the development and adult mouse cerebellum".

Cajal Confernece on Changing Concepts of Cajal's Neuron. May 2001 (Poster Presentation). "Stimulus dependent changes in c-Fos expression in Purkinje cells and glia in the rat cerebellum".

Invited Speaker:

Central Ohio Chapter, Society for Neuroscience, December, 1979. "Electroanatomical Analysis of Rat Neostriatal Neurons".

Department of Physiology, The Ohio State University, March, 1980. "Intracellular labeling of physiologically identified neurons".

Department of Biology, Bethany College, Bethany, West Virginia, December, 1981. 1) "Comparative Anatomy of the Central Nervous System"; 2) "A Light and Electron Microscopic Analysis of Local Circuits in the Cat Cerebellar Cortex".

Cajal Symposium "New Concepts in Cerebellar Neurobiology", American Association of Anatomists, Toronto, Canada, May, 1985. "The distribution pattern of Purkinje cell axonal collaterals: variations on a theme".

University of Montreal Dept. of Physiology, Montreal, Canada, April, 1988. "Local Circuits in the Cerebellum".

Dept. of Physiology, The Ohio State University, October, 1988. "Electrophysiological and pharmacological analyses of local circuits in the cerebellum".

Dept. of Physiology Texas Tech University, Lubbock, TX., April, 1990. "Peptidergic regulation of Purkinje cell activity".

Symposium on the Serotonergic Cerebellar System and Ataxia. Lyon, France, September 11, 12, 1991. "The serotonergic system in the cat's cerebellum: origin, ultrastructural relationships and physiological effects".

Brain Research Institute, University of Zurich, Zurich, Switzerland, September 16, 1991. "Neuropeptides: Potential modulators of Purkinje cell activity."

Dept. of Physiology, The Ohio State University, November, 1993. "Modulation of Neuronal Responsiveness in the Mammalian Cerebellum."

Satellite Symposium of the Meeting of European Neuroscience - The Cerebellum from Structure to Control Rotterdam, The Netherlands Aug. 31-Sept. 3, 1995. "The Effects of monoamines and neuropeptides in the cerebellar cortex and nuclei".

St. Louis University, Dept. of Anatomy & Neurobiology. Dec. 6, 1995.

Dept. of Physiology. The Ohio State University. Feb. 22, 1996 "LTD in the cerebellum"

Minisymposium on the Cerebellum, FASEB, New Orleans, LA. April 9, 1997. "Peptidergic & monoaminergic modulation of adult and developing cerebellar circuits."

9th Annual Spring Brain Conference Sedona, AZ, March 11-15, 1998. "Peptidergic Modulation of cerebellar circuits

Neuroscience Graduate Studies Program, The Ohio State University, Columbus OH, November 5, 1998. Peptidergic regulation of cerebellar circuits.

Research Support:

General Research Support Program, College of Osteopathic Medicine, Michigan State University, "Organization of the Efferents from the Caudate Nucleus", July 1, 1978 - May 30, 1979 - \$1,000.00, Principal Investigator.

NIH Biomedical Research Support Grant, College of Osteopathic Medicine, Michigan State University, "Ultrastructure of Caudate Nucleus Projection Neurons", 1978-1979, \$4,300.00, Principal Investigator.

Bremer Foundation, College of Medicine, The Ohio State University, "A Morphological and Physiological Analysis of

- the Intrinsic Circuitry of the Inferior Olive". September 1980 - August 1981, \$10,000.00, Principal Investigator.
- University Small Research Grant, Graduate School, The Ohio State University, "A Physiological and Anatomic Analysis of the Intrinsic Circuitry of the Inferior Olivary Complex". January 1, 1981 - December 31, 1981, \$4,000.00, Principal Investigator.
- "The Development of Precerebellar Nuclei" NS-08698 - Co-Investigator with Dr. James S. King (while Postdoctoral Fellow in his laboratory).
- Bremer Foundation, College of Medicine, The Ohio State University, "Local Circuits in the Cerebellar Cortex". July 1, 1981 - June 30, 1982, \$4,200.00, Principal Investigator.
- N.I.H., "Analysis of Local Circuitry in the Inferior Olive". February 1, 1982 - January, 1985, \$118,367.00, Principal Investigator.
- N.I.H., "The Development of Pre-cerebellar Nuclei". September 1, 1982 - August 31, 1985, \$206,606, Co-Investigator.
- N.I.H., "Analysis of Local Circuitry in the Inferior Olive". March 1, 1985 - February 28, 1988, \$187,376, Principal Investigator.
- N.I.H., "Development of Cerebellar Circuits". September 1, 1985 - August 31, 1988, \$291,591, Co-Investigator.
- N.S.F., "Analysis of Local Circuits in the Cerebellum". September 1, 1985 - August 31, 1988, \$93,102, Co-Principal Investigator.
- N.I.H., Training Grant, Neuronal Development, Plasticity and Regeneration. July 7, 1989-June 30, 1994, \$621,507, Co-Investigator.
- N.I.H., "The Role of Somatostatin in Spinal Sensory Circuits". July 1, 1987 - June 30, 1990, \$251,288, Co-Investigator.
- N.I.H., "Neuromodulators in Cerebellar Circuitry". March 1, 1988 - February 28, 1992, \$394,138, Principal Investigator.
- N.I.H., "Peptides in the Adult and Developing Cerebellum". September 1, 1988 - August 31, 1991, Co-Investigator.
- N.S.F., "An Analyses of Local Circuitry in the Cerebellum". September 1, 1990 - August 31, 1993, \$103,193.00, Principal Investigator.
- OSU, College of Medicine, "Basic Mechanism of Signal Transduction in the CNS". Bremer Funds, December 1, 1991 - November 31, 1992, \$5,000.00, Principal Investigator.
- N.I.H., "Peptides in Adult and Developing Cerebellar Circuits". July, 1992 - June 30, 1995, \$329,084, Co-Investigator.
- N.S.F., "An Analysis of Peptide Release From Cerebellar Afferents". August 1, 1993 - July 31, 1996, \$ 7,500 (Funds to cover travel to Zurich Switzerland for a cooperative research project), Principal Investigator.
- O.S.U. College of Medicine, "Regulation of neuronal activity in the mammalian cerebellum by various neuroactive chemicals". Bremer Funds, December 1, 1993 - November 30, 1994, \$5000, Principal Investigator.
- N.S.F., "Neuromodulators in the Cerebellar Nuclei". April 15, 1994 - April 14, 1996, \$83,810, Principal Investigator.
- N.I.H., "Neuromodulators in cerebellar circuitry". January 1, 1995 - December 31, 1997, \$298,166, Principal Investigator.

N.S.F., "Peptide and monoamine modulation of olivo-cerebellar circuits". August 1, 1996 - July 31, 1999, \$210,003, Principal Investigator.

N.I.H., "Peptides in adult and developing cerebellar circuits" June 1, 1996 - May 31, 1999, \$284,251, Co-Investigator.

NSF, "Co-transmitters in cerebellar circuitry", August 1, 1999 – July 31, 2003. \$436,568. Principal Investigator.

NIH, "Peptides (CRF) in developing cerebellar circuits" July 1, 1999- June 30, 2003. \$494, 578. Co-Investigator.

NSF Research Experience for Undergraduate (REU) Supplements

4 supplements of approximately \$6000 each have been added to NSF grants to support undergraduate student research.

Teaching Support:

Center for Teaching Excellence, The Ohio State University, "Use of a Plastination Technique for the Preparation of Anatomical Models". April 1, 1987 - March 31, 1989, \$5,120, Principal Investigator.

Pending:

NSF "The role of urocortin and CRF binding protein in the cerebellum" P.I. G.A. Bishop, Submitted Jan 10, 2002

NIH "Center of Excellence in Autism" P.I. Eugene Arnold. I will be P.I. of one of the grants in this center grant.

Submitted Nov. 30, 2001.

NIH "Neural control of temperature regulation". P.I. Jack Boulant, Submitted March 1, 2002