GARY STEPHEN CIMENT

Current Title: Professor

Date of Birth: January 16, 1951

Place of Birth: Montreal, Canada
(Naturalized U.S. citizen)

Work address:
Department of Cell & Developmental Biology (L215)
School of Medicine
Oregon Health & Sciences University
3181 SW Sam Jackson Park Road
Portland, OR 97201-3098

(503) 494-7362 (office)
494-7363 (lab)
494-4253 (fax)
cimentg@ohsu.edu (e-mail)

Education:

Institution	Degree	Major	Date
University of California Los Angeles, California Dr. Sidney Rittenberg (Research Advisor)	B.A. *(cum laude)*	Bacteriology	March, 1973
University of California Los Angeles, California Dr. Jean S. de Vellis (Research Advisor)	Ph.D.	Neuroscience	March, 1979

Professional Experience:

Research Associate with Dr. James A. Weston
Department of Biology, University of Oregon
Eugene, Oregon 1979-1985

Assistant Professor, Department of Cell Biology and Anatomy
School of Medicine, Oregon Health Sciences University
Portland, Oregon 1985-1991

Associate Professor, Department of Cell Biology and Anatomy
School of Medicine, Oregon Health Sciences University
Portland, Oregon 1991-2010

Professor, Department of Cell and Developmental Biology
School of Medicine, Oregon Health & Sciences University
Portland, Oregon 2010-present

Editorial Board Member, **Journal of Neuroscience Research** (Alan R. Liss, New York) 1988-1998

Editorial Board Member, **Perspectives in Developmental Neurobiology** (Gordon & Breach, London) 1992-1998

Chief Scientific Officer, Aves Labs (Tigard, OR) 1996-present

Grant Review Committees:

NIH -- Human Embryology Study Section (*ad hoc*) (1989, 1993)
-- Biological Sciences 2 Study Section (*ad hoc*) (1993)
-- Neurological Sciences BI Study Section (*ad hoc*) (1994)
-- NIMH pre-doctoral fellowship study section (*ad hoc*) (1994)
-- Program Project Review Committee (*ad hoc*) (1995)
(Human Genetics of Neurofibromatosis)

NSF -- *Ad hoc* reviewer for Developmental Neurosciences, Molecular & Cellular Neurobiology, and Developmental Biology Programs (1984 -- present)

American Heart Association (Oregon Affiliate)
-- Member, Grants Review Committee (1993 -- present))
-- Chair, Grants Review Committee (1994 -- 1995)

Oregon Health Sciences Foundation Grant Review Committee (1994 -- present)

Medical Research Foundation of Canada (ad hoc) (1992 -- present)

Other Committees:

Departmental: Chair, Faculty Search Committee, Developmental Neurobiologist (1986)
Chair, Faculty Search Committee, Developmental Biologist (1988)
Chair, Radiation Safety Committee (1985 - 1995)
Member, Committee on Graduate Education (1985 - 1991)
Chair, CB&A Graduate Student Orientation (1993-2001)
Member, Faculty Search Committee, Cell Biologist (1994)

Interdepartmental: Chair, Neuroscience Graduate Program (NSGP) Student Admissions Committee (1990 - 1991)
Chair, Neuroscience Graduate Program (NSGP) Education Committee (1991 - 1995)
Member, NSGP Executive Committee (1986 - 1994)
Member, NSGP Curriculum Committee (1987 - 1994)

School of Medicine: Student-Faculty Committee (1987 - 1993) (Chair from 1991 - 1993)
Medical School Curriculum Committee (1990 - 1993)
Medical Student Grading Committee (1990)
School of Medicine Student Disciplinary Committee (1988)
Medical Student Promotions Board -- I (1987 - 1993)
Medical Student Honors and Awards Committee (1993-2000)
Research Committee (1994 - 2001)
Medical Student Progress Board (1996-present)
Basic Sciences Subcommittee of the Medical School Curriculum Committee (1995-present)

Extramural: Research Committee, American Heart Association, Oregon Affiliate (1990-1995)
Program Committee, International Society for Developmental Neuroscience 9th biannual meeting in France, 6/92
Program Committee, International Society for Developmental Neuroscience 10th biannual meeting in San Diego, 6/94

Teaching Experience:

1986 -- 1993 (Oregon Health Sciences University)
Course director, **Neuroanatomy** for 1st year medical students and graduate students.
1990 -- 1993 (Oregon Health Sciences University)
Contributing lecturer, **Histology** for medical and graduate students.
1991 -- 1998 (Oregon Health Sciences University)
Organizer and Course director, **Developmental Biology Journal Club**
1993 -- 1998 (Oregon Health Sciences University)
Organizer and Course director, **Developmental Neurobiology** for graduate students.
1993 -- 1997 (Oregon Health Sciences University)
Contributing lecturer in **Signal Transduction** and **Techniques in Cell & Developmental Biology** courses
1994 -- 1996 (Oregon Health Sciences University)
Course vice-direct, lecturer, laboratory organizer, **Neuroscience & Behavior** course for 2nd year medical students.
1996 -- present (Oregon Health Sciences University) Course Director, laboratory organizer, **Neuroscience & Behavior (NSB)** course for 2nd year medical students.
1997 -- present (Oregon Health Sciences University) Course director, **Gross Anatomy, Imaging, Embryology (GIE)** course for 1st year medical students.

Lectures given in 2008-2009:

Neuroscience & Behavior (2nd year medical students)
Overview of the course (0.5 hour)
Gross Anatomy of the CNS (1.0 hour)
Embryology of the CNS 1.0 hour)
CSF and Blood-Brain Barrier (1.5 hour)
Histology of the CNS (1.0 hour)
Internal Anatomy of the CNS (1.5 hours)
Somatosensory Systems (3.0 hours)
Motor Systems Overview (1.0 hour)
Descending Motor Systems (1.5 hour)
Review of the Peripheral Nervous System (1.0 hour)
Cranial Nerves 3,4,6 (1.5 hours)
Cranial Nerves 1, 7, 9-12 (2.0 hours)
Anatomy of the Basal Ganglia (1.0 hour)
Anatomy of the Cerebellum (2.0 hour)
Review of the Autonomic Nervous System (1.0 hour)
Limbic System (2.0 hour)
Thalamus (1.0 hour)
Cerebral Cortex (1.0 hour)
Blood Supply to the CNS (3.0 hours)
Cortical Development (2.0 hours)

Gross Anatomy, Imaging & Embryology (1st year medical students)
Overview of the course (0.5 hour)
Peripheral Nervous System (1.5 hours)
Musculoskeletal system (1.0 hour)
Shoulder (1.0 hour)
Axilla (2.0 hour)

Arm (2.0 hours)
Week 2 Review (1.0 hour)
Wrist & Hand (2.0 hours)
Extensor Forearm (2.0 hours)
Week 3 Review (1.0 hour)
Autonomic Nervous System (2.0 hours)
Lungs (1.0 hour)
Heart (1.5 hours)
Week 4 Review (1.0 hour)
Embryology of the Heart (2.0 hours)
Abdominal Walls and Inguinal Region (2.0 hours)
Abdominal Organs (2.0 hours)
Abdominal Aorta (1.5 hour)
Week 5 Review (1.0 hour)
Pelvis (2.0 hours)
Embryology of the Urogenital System (2.0 hours)
Pelvic Viscera (2.0 hours)
Week 6 Review (1.0 hour)
Embryology of the External Genitalia (1.0 hour)
Perineum (2.0 hours)
Hip (1.0 hour)
Week 7 Review (1.0 hour)
Thigh (2.0 hours)
Leg (2.0 hours)
Foot (1.0 hour)
Week 8 Review (1.0 hour)
Neck (1.0 hour)
Skull (1.0 hour)
Embryology of the Peripheral Nervous System (1.0 hour)
Anatomy of the Cranial Nerves (2.0 hours)
Trigeminal Nerve (1.5 hours)
Week 9 Review (1.0 hour)
Meninges & Blood Supply to the Brain (1.5 hours)
Ear (2.0 hours)
Eye & Orbit (2 hours)
Week 10 Review (1.0 hour)
Autonomic Ganglia of the Head (1.0 hour)
Sensory Ganglia of the Head (1.0 hour)
Week 11 Review (1.0 hour)

Cell Structure & Function (1st year medical students)

Histology of Peripheral Nervous System (1.0 hour)

Neuroanatomy (1st year physician assistant students)

Introduction to Neuroanatomy (3.0 hours)
Somatosensory Systems (3.0 hours)
Introduction to Motor Systems (3.0 hours)
Cerebellum and Basal Ganglia (3.0 hours)
Review and Clinical Cases (2.0 hours)
Cranial Nerves 2, 3, 4 and 6 (3.0 hours)
Cranial Nerves 1, 5, 7-12 (3.0 hours)
Thalamus and Cortex (3.0 hours
Review and Clinical Cases (2.0 hours)

Recipient of Excellence in Teaching awards (nominated by students):
1986-87, 1989-90, 1992-93, 1993-94, 1994-95, 1995-96, 1996-97, 1998-99, 1999-2000, 2000-01, 2002-03, 2004-05, 2005-06, 2006-07, 2007-2008
Recipient of Faculty Excellence in Education (nominated by faculty): 2007-2008
Recipient of Best Course, Course Director award (nominated by students):
2000-01, 2002-03, 2003-04, 2005-06 (for both GIE and NSB), 2008-2009
Recipient of Excellence in Teaching award from the Allied Health students:
1999, 2000
Recipient of Allan J. Hill, Jr. Award for Excellence in Teaching -- 2009

Editorial Work:

Co-editor of **Neuroembryology: Cellular and Molecular Approaches**, Alan R. Liss, New York, 1988.

Editor of a special issue of **Perspectives in Developmental Neurobiology** entitled: *"GAP-43 -- Perspectives on its Biological Functions and its Expression in Non-Neuronal Cells* " (1992)

Conference Organization:

Organizer of the 21st annual **Northwest Regional Developmental Biology Conference** for 120 participants at Friday Harbor, WA (May, 1988).

Organizer for the 27st annual **Northwest Regional Developmental Biology Conference** for 130 participants at Portland, OR (May, 1984).

Symposium organizer at the 8th biannual **International Society for Developmental Neuroscience** meeting at Miami Beach, FL (June, 1990) -- **Cell Lineages in the Nervous System.** Seminar title: "*The Melanocyte/Schwann cell precursor: A bipotent intermediate in the neural crest lineage***"**

Symposium organizer at the 9th biannual **International Society for the Developmental Neuroscience** meeting at La Grande Mottee, France (June, 1992) -- **Role of Growth Factors in Neural Crest Cell Development.** Seminar title: "*Role of intracrine expression of basic fibroblast growth factor in the differentiation of neural crest cells"*

Symposium organizer at the 10th biannual **International Society for the Developmental Neuroscience** meeting at San Diego, CA (June, 1994) -- **Use of retroviruses for targeted gene transfer into the developing nervous system**. Seminar title: "Use of replication defective retroviruses for the transfer of metalloproteinases and inhibitors into the developing avian nervous system"

Seminars and other speaking engagements (selected list):

Society for Neurosciences Short Course **New Approaches in Developmental Neurobiology** at Los Angeles, CA in October, 1981. *"Making monoclonal antibodies against vertebrate neural crest and other embryonic cell types"*

4th annual Tarbox Parkinson's Disease Symposium on **Developing and Regenerating Vertebrate Nervous Systems** in October, 1982 at Lubbock, TX. *Neurogenesis in the Branchial Arch Mesenchyme of Avian Embryos"*

Invited speaker at the 5th annual International Meeting on **Differentiation of Normal and Neoplastic cells** in Boulder, CO (8/87). *"Phorbol esters induce the metaplastic transformation of Schwann cells into melanocytes"*

Invited Discussion Leader at the 1989 Gordon Conference Symposium on **Developmental Neurobiology**

Invited speaker at the New York Academy of Sciences symposium (1989) -- **Embryonic Origins of Defective Heart Development.** *"Precocious expression of NAPA-73, an intermediate filament-associated protein, during nervous system and heart development in the chicken embryo."*

Cold Spring Harbor Symposium on **Neurofibromatosis** at Cold Spring Harbor, NY in October, 1990. "*The Melanocyte/Schwann cell progenitor: Effects of growth factors on committment"*

Neurofibromatosis Consortium conference held at the University of Utah, Salt Lake City, Utah (1/92) "Cloning and expression of the chicken homolog of neurofibromin"

LINK conference on Neurofibromatosis at Oxford University, U.K. in October, 1992. "Neurofibromin expression in migrating neural crest cells of avian embryos"

Invited seminar speaker: Oregon State University, University of Oregon, University of Pittsburgh, Pennsylvania State University at Hershey, University of Colorado, Columbia University, Cornell University, University of California at Los Angeles, University of Iowa.

Invited speaker: Gordon Conference on "Matrix Metalloproteinases," Proctor Academy, New Hampshire, 7/97.

Other activities:

Organizer of the "Research Opportunities Data Base for M.D. and M.D./Ph.D. Students at O.H.S.U." providing students with information on research opportunities available in various laboratories and clinics of O.H.S.U. faculty (1992-93, 1993-94, 1994-95).

Past Research Grant Support

National Institutes of Health

"***Neurofibromatosis: A model system using phorbol esters***" R01 NS23883

$ 63,686 annual direct costs (1 July 1986 through 30 June 1989), principal investigator
$ 88,854 annual direct costs (1 July 1989 through 30 June1992), principal investigator
$140,978 annual direct costs (1 July 1992 through 30 June 1996), principal investigator

"***Characterization of Neural Crest-Derived cDNA library***" RO1 DE07625

$87,296 annual direct costs (1 Sept 1986 through 31 August 1989), principal investigator

"Role of the protease stromelysin in axon invasiveness" R01 NS 27886

$50,000 annual direct costs (1 July 1992 through 30 June 1995), principal investigator

National Science Foundation

"Role of the protease stromelysin in axon invasiveness" BNS 91-19397

$43,332 annual direct costs (1 March 1992 through 31 August 1995), principal investigator

"***Use of three-dimensional time-lapse microscopy to probe the role of proteases in neurite invasiveness***"

$76,500 annual direct costs (15 April 1995 through 14 April 1998), co-investigator
(J. Lochner, principal investigator)

"1988 Northwest Regional Developmental Biology Conference" DCB-8801146

$ 2,000 direct costs (April, 1988), principal investigator

Alzheimer's Disease Center of Oregon

"***Characterization of the NGF responsive elements in the 5' flanking DNA of the transin gene***"

$12,000 direct costs (1 January 1989 through 31 December 1989), principal investigator

Medical Research Foundation of Oregon

"***Characterization of a Neural Crest-Derived cDNA library***"

$12,000 direct costs (1 September 1985 through 31 August 1986), principal investigator

"***Synthesis and Release of transin in PC12 cells***"
$17,000 direct costs (1 March 1990 though 28 February 1991), principal investigator

"Role of Steel Growth Factor Isoforms in Neural Crest Cell Development"
$ 25,000 annual direct costs (1 September 1996 through 31 August 1997)

American Heart Association -- Oregon Affiliate

"***Migration of neural crest Cells into the outflow tract of the embryonic avian heart***"

$29,211 direct costs (1 April 1990 through 30 March 1991), principal investigator

Graduate Student Thesis Advisor for:

: Cynthia Machida (Ph.D. in Cell Biology & Anatomy, received 3/89)
: Paul Hill (M.S. in Cell Biology & Anatomy, received 7/89)
: Lawrence Sherman (Ph.D. in Cell Biology & Anatomy, received 2/93)
: Sunita DeSousa (Ph.D. in Neuroscience, received 12/96)
: Cheng Sheng Guo (Ph.D. in Cell & Developmental Biology, received 12/98)

Post-Doctoral Advisor for:

: Serhan Alkan, M.D. (Sept 1986 -- June 1990) Currently Full Professor of Pathology, Georgetown University, Washington, DC
: Lawrence Baizer, Ph.D. (Nov 1986 -- June 1987) Currently Scientific Review Administrator, NINDS.
: Cynthia Machida, Ph.D. (May 1989 -- June 1991)
: Kate Stocker, Ph.D. (Nov 1988 -- 1995)
: Lora Schweers Nordstrom, Ph.D. (Jan 1993 -- 1996)

Student Research Advisory and Dissertation Committees:

: Robert Thompson (Cell Biology & Anatomy), graduated 1986
: Linda Lutz (Biochemistry & Molecular Biology), graduated 1991
: John Shaskus (Biochemistry & Molecular Biology), graduated 1992
: Shi Wei Li (Cell Biology & Anatomy), graduated 1992
: Timothy Grudt (Cell Biology & Anatomy), graduated 1993
: Pastor Couycero (Cell Biology & Anatomy), graduated 1994
: Lisa McNeil (Pharmacology), graduated 1994
: Zhenhong Qu (Cell Biology & Anatomy), graduated 1995
: Arun Bhat (Molecular Microbiology & Immunology), graduated 1995
: Chantal Gamby (Cell Biology & Anatomy)
: Susan Bergeson (Biochemistry & Molecular Biology)
: Gwynn Daniels (Cell Biology & Anatomy)
: Tom Finn (Cell Biology & Anatomy)
: Brian Link (Cell Biology & Anatomy)
: Karl Kuzis (Neuroscience)
: Michael Kennedy (Cell Biology & Anatomy)
: Ken Tovar (Neuroscience)
: Susan Hobson (M.D./Ph.D. student in Cell & Developmental Biology)

PUBLICATIONS

Published Research Papers:

Ciment, G. and de Vellis, J.S. (1978). *Cellular interactions uncouple beta-adrenergic receptors from adenylate cyclase*. **Science 202**: 765-768.

Ciment, G. and de Vellis, J.S (1982). *Cell surface-mediated cellular interactions. Effects of B104 neuroblastoma surface determinants on C6 glioma cellular properties*. **Journal of Neuroscience Research 7:** 371-386.

Ciment, G. and Weston, J.A. (1982). *Early appearance in neural crest and crest-derived cells of an antigenic determinant present in avian neurons*. **Developmental Biology 93:** 355-367.

Ciment, G. and Weston, J.A. (1983). *Enteric neurogenesis by neural crest-derived branchial arch mesenchymal cells*. **Nature 305:** 424-427.

Ciment, G. and Weston, J.A. (1985). *Segregation of developmental abilities in neural crest-derived cells: Identification of partially restricted intermediate cell types in the branchial arches of avian embryos*. **Developmental Biology 111:** 73-83.

Ciment, G., Ressler, A., Letourneau, P.C. and Weston, J.A. (1986). *A novel intermediate filament-associated protein, NAPA-73, which binds to different filament types at different stages of nervous system development.* **Journal of Cell Biology 102:** 246-251.

Tucker, G.C., **Ciment, G.** and Thiery, J.P. (1986). *Pathways of avian neural crest cell migration in the developing gut*. **Developmental Biology 116:** 439-450.

Ciment, G., Glimelius, B., Nelson, D. and Weston, J.A. (1986). *Reversal of a developmental restriction in neural crest-derived cells of avian embryos by a phorbol ester drug.* **Developmental Biology 118:** 392-398.

Hess, L., Chamberlin, T. and **Ciment, G.** (1988). *Changes in protein kinase C activities are correlated with the metaplastic transformation of Schwann cell precursors of avian embryos into melanocytes*. **Journal of Neuroscience Research 120:** 101-106.

Sears, R. and **Ciment, G.** (1988). *Changes in the migratory properties of neural crest and early crest-derived cells in vivo following treatment with a phorbol ester drug.* **Developmental Biology 130:** 133-143.

Machida, C.M., Rodland, K.D., Matrisian, L., Magun, B.E. and **Ciment, G**. (1989) *NGF induction of the gene encoding the protease transin accompanies neuronal differentiation in PC12 cells*. **Neuron 2:** 1587-1596.

Baizer, L., Alkan, S., Stocker, K. and **Ciment, G.** (1990) *Chicken growth-associated protein-(GAP)-43: Primary structure and regulated expression of mRNA during embryogenesis.* **Molecular Brain Research 7:** 61-68.

Stocker, K., Sherman, L., Rees, S., and **Ciment, G.** (1991) *Basic FGF and TGFβ1 influence committment to melanogenesis in neural crest-derived cells of avian embryos.* **Development 111:** 635-645**.**

Machida, C.M., Scott, J.D., and **Ciment, G**. (1991) *NGF-induction of the metalloproteinase transin/ stromelysin in PC12 cells: Involvement of multiple protein kinases.* **Journal of Cell Biology 114:** 1037-1048.

Stocker, K., Baizer, L. and **Ciment, G**. (1992) *Transient expression of GAP-43 in non-neuronal cells of the embryonic chicken limb.* **Developmental Biology 149:** 406-414.

Jakowlew, S.B., **Ciment, G.**, Tuane, R.S., Sporn, M.B. and Roberts, A.B. (1992) *Pattern of expression of transforming growth factor-β4 mRNA and protein in the developing chicken embryo.* **Develomental Dynamics 195**: 276-289.

Stocker, K.M., Brown, A.M.C. and **Ciment, G**. (1993). *Gene transfer of LacZ into avian neural tube and neural crest cells by retroviral infection of grafted embryonic tissues.* **Journal of Neuroscience Research 34:** 135-145.

Baizer, L., **Ciment, G.**, and Schaeffer, G.L. (1993). *Analysis of the sequence and embryonic expression of the chicken neurofibromatosis type 1 (NF-1) gene product*. **Molecular and Chemical Neuropathology 18:** 267-278.

Sherman, L., Stocker, K.M., Morrison, R., and **Ciment, G.** (1993). *Basic fibroblast growth factor (bFGF) acts intracellularly to cause the transdifferentiation of avian neural crest-derived Schwann cell precursors into melanocytes*. **Development 118**: 1313-1326.

Schaeffer, G., **Ciment, G**. and Baizer, L. (1993). *Regulated expression of the neurofibromin type I transcript in the developing chicken brain*. **Journal of Neurochemistry 61:** 2054-2060.

Jakowlew, S.B., **Ciment, G.**, Tuane, R.S., Sporn, M.B. and Roberts, A.B. (1994) *Expression of transforming growth factors-ß2 and ß3 mRNAs and proteins in the developing chicken embryo.* **Differentiation 55:** 105-118.

DeSouza, S., Lochner, J., Machida, C.M., Matrisian, L.M. and **Ciment, G.** (1995) *A novel NGF-responsive element in the stromelysin-1 (transin) gene that is necessary and sufficient for gene expression in PC12 cells*. **Journal of Biological Chemistry 270:** 9106-9114.

Nordstrom, L.A., Lochner, Yeung, W. and **Ciment, G**. (1995) *The metalloproteinase stromelysin-1 (transin) mediates PC12 cell growth cone invasiveness through basal laminae*. **Molecular and Cellular Neuroscience 6:** 56-68.

Stocker, K.M., Baizer, L., Coston, T., Sherman, L. and **Ciment, G.** (1995). *Regulated expression of neurofibromin in migrating neural crest cells of avian embryos.* **Journal of Neurobiology 27:** 535-552.

Baskar, J.F., Smith, P.O., **Ciment, G.**, Hoffman, S., Tucker, C., Tenney, D.J., Coberg-Poley, A.M., Nelson, J. and Ghazal, P. (1996). *Developmental analysis of the cytomegalovirus enhancer in transgenic animals*. **Journal of Virology 70**: 3215-3226.

Guo, C.S., Wehre-Haller, B., Rossi, J. and **Ciment, G.** (1997). *Autocrine regulation of neural crest cell development by Steel Factor*. **Developmental Biology 183:** 61-69.

DeSouza, S., Nordstrom, L.A., and **Ciment, G**. (1997). *Role of the bZIP transcription factor IREBF1 in the NGF-induction of stromelysin-1 (transin) gene expression in PC12 cells*. **Journal of Molecular Neuroscience 8**: 243-255.

Book Chapters and Review Articles:

Ciment, G. and Weston, J.A. (1981). *Immunochemical studies of avian sensory neurogenesis*. In: **Monoclonal Antibodies to Neural Antigens** (R. McKay, M.C. Raff & L.F. Reichardt, editors), pp. 73-89. Cold Spring Harbor Press, Cold Spring Harbor, New York.

Ciment, G. (1983). *Neurogenesis in the neural crest-derived branchial arch mesencyme of avian embryos.* In **Developing and Regenerating Vertebrate Nervous Systems** (P.W. Coates & R.R. Markwald, editors), pp. 159-165. Alan R. Liss, New York.

Weston, J.A., Girdlestone, J. and **Ciment, G.** (1984). *Heterogeneity in cultured neural crest cell populations*. In: **Cellular and Molecular Biology of Neuronal Development** (I. Black, editor), pp. 51-62. Plenum Press, New York.

Weston, J.A., **Ciment, G.** and Girdlestone, J. (1984). *The role of extracellular matrix in neural crest development: A reevaluation*. In: **The Role of Extracellular Matrix in Development** (R. Trelstad, editor), pp. 433-460. Alan R. Liss, New York.

Yen, S-H., Reding, H., Davies, P. and **Ciment, G**. (1985). *The compositions of neurofibrillary tangles of the senile dementia of the Alzheimer's type: An immunological study.* In: **Intermediate Filaments** (E.

Wang, D. Fischman, R.K.H. Liem and T-T. Sun, editors). Annals of the New York Academy of Sciences **455:** 819-825.

Ciment, G., Glimelius, B., Nelson, D.M. and Weston, J.A. (1986). *Reversal of a developmental restriction in neural crest-derived dorsal root ganglion cells of avian embryos by the tumor-promoting drug 12-0-Tetradecanoylphorbol-13-acetate (TPA).* In: **Progress in Developmental Biology, Part B** (H.C. Slavkin, editor) pp. 259-262. Alan R. Liss, New York.

Ciment, G. and Sears, R. (1988). *Neural crest cells change their homing behavior following treatment with a phorbol ester drug*. In: **Cellular and Molecular Aspects of Neural Development and Regeneration** (J. de Vellis, A. Gorio, B. Haber, J.R. Perez-Polo, editors). Alan R. Liss, New York, pp. 21-30.

Ciment, G. (1990). *Precocious expression of NAPA-73, an intermediate filament-associated protein, during nervous system and heart development in the chicken embryo*. In: **Embryonic Origins of Defective Heart Development** (D.E. Bockman and M.L. Kirby, editors). Annals of the New York Academy of Sciences, Vol. 588, p.225-235.

Ciment, G. (1990). *The Melanocyte/Schwann Cell Lineage*: *A Bipotent Intermediate in the Neural Crest Lineage. In:* **Comments on Developmental Neurobiology, Vol. 1, No. 4 (J. Lauder, Editor).** Gordon and Breach, London, pp. 207-223.

Sherman, L., Stocker, K.M., Rees, S., Morrison, R.S., and **Ciment, G**. (1991). *Expression of Multiple Forms of bFGF in Early Avian Embryos and their possible Role in Neural Crest Cell Committment*. In: **The Fibroblast Growth Factor Family** (A. Baird, M. Klagsburn, editors). Annals of the New York Academy of Sciences, Vol. 638, p. 470-473.

Stocker, K.M., Baizer, L. and Ciment, G. (1992). *GAP-43 in non-neuronal cells of the embryonic chick limb: Clues to function*. In: **GAP-43 -- Perspectives on its Biological Functions and its Expression in Non-Neuronal Cells** (G. Ciment, editor). Gordon & Breach, London, pp. 53-62.

Morrison, R., Sherman, L. and **Ciment, G.** (1993). *Antisense oligonucleotides suppress basic fibroblast growth factor expression in glioma cell lines and primary cultures of neural crest cells.* In: **Neuroprotocols, Vol. 2** (K. Kosik, editor). Academic Press, New York. pp.51-58.

Eckenstein, F.P., Kuzis, K., Nishi, R., Woodward, W.R., Meshul, C., Sherman, L. and **Ciment, G**. (1993). *Cellular distribution, subcellular localization and possible functions of basic and acidic fibroblast growth factors*. **Biochemical Pharmacology 47**: 103-110.

Ph.D. Dissertation (1979):

Cellular interactions between central nervous system neuroblastoma and glioma cells in culture. University of California, Los Angeles.