

# CURRICULUM VITAE

Stanley R. Hoffman, Ph.D.

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**Citizenship and/or Visa Information:** US

**Education** (Beginning with Baccalaureate Degree):

Institution/Location	Years	Degree/Date (Mo/Yr)	Field of Study
Mass Inst of Tech/Cambridge, MA	1968-1972	B.S., 6/72	Life Sciences
Cal Inst of Tech/Pasadena, CA	1972-1977	Ph.D., 6/78	Cell Biology

**Post Doctoral:** (Place) (Dates)  
The Rockefeller University/New York, NY 1977-1979

**Faculty Appointments** (Begin with initial appointment):

Years	Rank	Institution	Department
1979-1981	Research Associate	The Rockefeller University	Mol & Develop Biol
1981-1990	Assistant Professor	The Rockefeller University	Mol & Develop Biol
1990-1998	Associate Professor	Med Univ South Carolina	Medicine & Cell Biol/Anat
1998-present	Professor	Med Univ South Carolina	Medicine & Cell Biol/Anat

**Membership in professional/scientific societies:**

American Society for Cell Biology  
Society for Neuroscience  
American Association of Anatomists  
American Society for Matrix Biology

**Editorial Positions:**

Reviewer of manuscripts for:  
Journal of Cell Biology  
Developmental Biology  
Developmental Dynamics  
Experimental Cell Research  
Arthritis and Rheumatism  
Anatomical Record  
Journal of Neuroscience  
Respiratory Research  
Cytokine  
International Journal of Development Biology  
Mechanisms of Development  
American Journal of Respiratory Cell and Molecular Biology

**Extramural Grants:**

Current

2007-2012 Fondation Leducq Networks of Excellence in Cardiovascular Research, "Mitral Valve Disease: From Genetic Mechanisms to Improved Repair" (Roger R. Markwald, PI), **Co-Investigator**, (5 % effort)

- 2007-2012 NIH NIAMS, "Anti-fibrotic and anti-inflammatory roles of caveolin-1 in lung disease", **Mentor** to Principal Investigator Elena Tourkina, (\$105,000 per year, 0 % effort)
- 1987-2011 NIH NHLBI, "Mucopolysaccharide Metabolism in Cardiac Anomalies" (PI, Roger R. Markwald), **Co-Investigator**, (10 % effort)
- 2009-2011 NIH/NCRR South Carolina COBRE for Developmentally-Based Cardiovascular Diseases (PI, Roger Markwald), **Mentor** to Subproject PI Suniti Misra, (\$90,000 per year, 10 % effort)
- 2005-2010 NSF – FIBR, "Understanding and Employing Multicellular Self-Assembly" (Consortium PI, Roger R. Markwald), **Co-Investigator**, (5 % effort)
- 2007-2010 DOD, ""Hyaluronic Acid (HA) is Overexpressed in Fibrotic Lung Tissue and Promotes Collagen Expression", **Mentor** to Principal Investigator Pal Gooz, (\$50,000 per year, 0 % effort)
- 2004-2009 NIH/NCRR South Carolina COBRE for Developmentally-Based Cardiovascular Diseases (PI, Roger Markwald), **Mentor** to Subproject PI Pal Gooz, (\$90,000 per year, 10 % effort)

### Pending

- 2009-2014 NIH/NCRR COBRE South Carolina Center for Biomaterials for Tissue Regeneration (PI, N. Vyavahare), **Mentor** to Subproject PI Shibnath Ghatak, (10 % effort)
- 2009-2014 NSF OIA, 2009 EPSCOR Research Infrastructure Improvement Grant (PI, J. Odom), **Co-Investigator**, (10 % effort)
- 2010-2013 DOD, "CSD Peptide-Based Therapeutic Agents in Scleroderma Lung Disease", **Principal Investigator**, (\$250,000 per year, 50 % effort)
- 2009-2011 NIH/ National Center for Complementary and Alternative Medicine, "Curcumin Treatment of Lung Fibrosis: Improved Delivery and Target Cells", **Principal Investigator**, (\$150,000 per year, 30 % effort)
- 2009-2010 South Carolina Clinical and Translational Research Institute, "CSD Peptide Mitigates Radiotherapy-Induced Lung Injury/ Fibrosis", **Principal Investigator**, (\$50,000 per year, 10 % effort)

### Completed

- 2003-2007 NIH HLBI, "PKC $\epsilon$ -related proteins in lung fibrosis", **Principal Investigator**, (\$250,000 per year, 50 % effort)
- 2005-2006 Science Applications International Corp, "Treatment Targets to Prevent Progression of Premalignant Oral Lesions to Cancer", **Co-Principal Investigator**, (\$15,000, 5 % effort)
- 2004-2006 NIH/NCRR, South Carolina COBRE for Oral Health (PI, Steven D London), **Mentor** to Subproject "ECM in Oral Cancer" PI Mee Keong Beon, (\$50,000 per year, 10 % effort)
- 2001-2006 NASA/EPSCoR, "Cardiovascular Tissue Engineering", **Subproject Leader**, (\$30,000 per year, 5 % effort)
- 1997-2005 Department of Energy, "Molecular Mechanism of Pathogenesis in a Model of Trichloroethylene - Induced Congenital Heart Disease", **Subproject Leader**, (\$70,000 per year, 15 % effort)
- 2001-2005 National Institutes of Health, Heart, Lung, and Blood Institute, "Cspg2 gene and cardiac outlet morphogenesis", **Co-Investigator**, (\$150,000 per year, 15 % effort)
- 2000-2003 NASA, "Embryonic cell migration and metalloproteinase activity are affected by randomization of the gravity vector", **Principal Investigator**, (\$135,000 per year, 25 % effort)
- 2001-2003 National Center for Complementary and Alternative Medicine, "Curcumin treatment of fibrosis", **Principal Investigator**, (\$125,000 per year, 25 % effort)
- 2001-2003 Department of Defense, "Extracellular matrix remodeling in head and neck cancer", **Principal Investigator**, (\$33,000 per year, 1 % effort)

- 1986-2003 National Institutes of Health, Heart, Lung, and Blood Institute, "Cell-cell and -matrix adhesion in cardiac morphogenesis", **Principal Investigator**, (\$153,000 per year, 25 % effort)
- 2000-2002 Department of Defense, "Extracellular chondroitin sulfate proteoglycans in tumor neovascularization", **Principal Investigator**, (\$88,000 per year, 20 % effort)
- 1992-2000 RGK Foundation, "Extracellular matrix proteins as modulators of cell behavior in scleroderma", **Principal Investigator**, (\$20,000 per year, 5 % effort)
- 1998-2000 Scleroderma Federation/United Scleroderma Foundation, "Curcumin sensitivity and altered PKC in scleroderma", **Principal Investigator**, (\$50,000 per year, 10 % effort)
- 1997-1999 National Institutes of Health, Heart, Lung, and Blood Institute, "Epithelial-Mesenchymal Transformation under Microgravity", **Project Leader**, (subproject of Program Project Cardiac Valvuloseptal Morphogenesis (Roger R. Markwald PI)), (\$86,000 per year, 32 % effort)
- 1997-1998 National Institute of Aging, "T Lymphocyte-laminin interactions in aging", **Principal Investigator**, (\$50,000 per year, 10 % effort)
- 1992-1995 Showa Denko K K Pharmaceutical, " Cell-cell and cell-matrix interactions in eosinophil localization and activation in the fasciitis of the Eosinophilia-Myalgia Syndrome", **Principal Investigator**, (\$109,000 per year, 20 % effort)
- 1992-1994 American Heart Association - South Carolina Affiliate, "Role of a small adhesive proteoglycan (sad PG) in heart development", **Co-investigator**, (Heidemarie Ernst, Principal Investigator), (\$20,000 per year, 5 % effort)
- 1992-1994 United Scleroderma Foundation/ Scleroderma Federation, "Extracellular matrix proteins as modulators of cell behavior in scleroderma", **Principal Investigator**, (\$34,000 per year, 10 % effort)
- 1991-1992 Showa Denko K K Pharmaceutical , " Cell-cell and cell-matrix interactions in eosinophil localization and activation in the fasciitis of the Eosinophilia-Myalgia Syndrome", **Co-Investigator**, (E. Carwile LeRoy, Principal Investigator), (\$210,000 per year, 15 % effort)

#### **Intramural Grants/amount of award:**

- 1998 MUSC Institutional Grant, "Ultracentrifugation Facility", **Principal Investigator**, \$25,000
- 1997-1998 IDEAS Program, "Inhibition of fibrosis by curcumin", **Principal Investigator**, \$13,200
- 1995-1997 MUSC Institutional Grant, "Cell-cell and -matrix interactions in heart morphogenesis", **Principal Investigator**, \$62,000
- 1991-1992 MUSC Institutional Grant, "Supplemental equipment: cell adhesion in development", **Principal Investigator**, \$39,000

#### **Awards, Honors:**

- American Cancer Society Postdoctoral Fellowship - 1977-1979
- R.J. Reynolds Industries Special Fellowship - 1979-1983
- Invited Speaker selected from submitted abstracts, Gordon Conference on "Proteoglycans", 1996
- Invited Speaker selected from submitted abstracts, Gordon Conference on "Cell Contact and Adhesion", 1997
- Invited Speaker selected from submitted abstracts, American Society for Matrix Biology Biennial Meeting, 2006

#### **Academic Committee Activities (past 5 years):**

- Department of Cell Biology/Anatomy APT Committee
- Cardiovascular COBRE Internal Advisory Committee
- Inbre Grant Internal Advisory Committee
- Pediatric Cardiology Training Grant Internal Advisory Committee

#### **Major Teaching Responsibilities (Current):**

- Mentor to Graduate Student Mathieu Richard
- Mentor to Assistant Professor Elena Tourkina

Mentor to Assistant Professor Pal Gooz

### **Lectures and Presentations:**

#### Poster Presentations

Tourkina E, Gooz P, Silver RM, **Hoffman S**. Opposing Effects of PKC $\alpha$  and PKC $\epsilon$  on Collagen Expression are mediated via MEK/ERK and Caveolin-1 Signaling. The 8th International Workshop on Scleroderma Research, Trinity College, Cambridge England, 2004.

Tourkina E, Bonner M, Gooz P, Silver RM, **Hoffman S**. Caveolin-1 in Lung Fibrosis and Resolution. 13th International Colloquium on Lung Fibrosis, 2004, Banff, Canada.

Tourkina E, Richard M, Charles K, Silver RM, **Hoffman S**. Caveolin-1 regulates collagen expression through MEK/ERK signaling and differentiates normal lung fibroblasts into myofibroblasts. ASCB Annual Meeting, Washington DC, 2005.

Tourkina EV, Richard M, Bonner M, Silver RM, **Hoffman S**. Anti-fibrotic and anti-inflammatory roles of caveolin-1 in scleroderma. ASCB Annual Meeting, San Diego, CA, 2006.

Tourkina E, Richard M, Oates J, Silver RM, **Hoffman S**. Caveolin-1 Regulates Pro-Inflammatory and Pro-Fibrotic Leukocyte Functions. The 15<sup>th</sup> International Colloquium on Lung and Airway Fibrosis. Sunset Beach, NC, 2008.

Tourkina E, Richard M, Oates J, Silver RM, **Hoffman S**. Caveolin-1 scaffolding domain peptide inhibits the monocyte to fibrocyte differentiation of normal and scleroderma peripheral blood mononuclear cells. 10<sup>th</sup> International Workshop on Scleroderma Research. Cambridge England, 2008.

Richard M, Oates J, Silver RM, **Hoffman S**, Tourkina E. Caveolin-1 regulates normal and scleroderma leukocyte functions. American College of Rheumatology 72nd Annual Scientific Meeting, San Francisco, CA, 2008.

#### Invited Oral Presentations (chosen from submitted abstracts)

**Hoffman S**, Richard M, Bonner M, Silver RM, Tourkina E. Caveolin-1 scaffolding domain inhibits lung fibrosis. American Society for Matrix Biology Biennial Meeting, Nashville, TN, 2006.

Gooz P, Gooz M, Baldys A, **Hoffman S**. ADAM-17: A central regulator of angiogenesis. American Society for Matrix Biology Biennial Meeting, Nashville, TN, 2006.

### **Extramural Professional Activities:**

#### Grant Reviewer

Study Sections: NSF panel on Interdisciplinary Training grants, April 1996

NASA panel on Developmental Biology, July 1997

NHLBI Special emphasis panel - Heart Failure Research: New Approaches to Pathogenesis, June 1998

NIH LIRR (Lung Injury, Repair, and Remodeling) February 2006

Program Projects: NHLBI 1992

NHLBI 2005

Ad hoc reviewer for: NSF

Veteran's Administration

Session organizer: Southeast Regional Developmental Biology Conference, 1992, Clemson, South Carolina

Planning committee: 1993 South Carolina Research Conference, Isle of Palms, South Carolina

### **Community Service:**

Arranged for Congressman Mark Sanford to come to MUSC and hear about the research of several NIH-funded researchers

Letter published in Post and Courier urging support for NIH

Judge, Student Research Day MUSC  
Charleston Jewish Federation, Young Leadership Group  
Addlestone Hebrew Academy, Quality Improvement committee  
Interviewer of prospective students for MIT  
T-ball and basketball coach  
Congregation Brith Sholom Beth Israel, Board of Trustees  
Addlestone Hebrew Academy, annual auction closeout committee chairman  
Member, Charleston Jewish Federation Community Relations Committee

### **Patents/ Intellectual Property/ Commercialization:**

U.S. Provisional Application No. 60/828,009, filed on 10/3/2006, titled "Treatment for Lung Fibrosis" FRD File No. P0708

U.S. Utility Patent Application No. 11/866,994 titled "Protection Against Lung Fibrosis by Up Regulating the Function or Expression of Caveolin-1", Filed 10/3/2007

Intellectual Property Record of Invention Titled "Antibodies Against Extracellular Matrix (ECM) Proteins", MUSC-FRD File No. P0919, (1/21/2009)

Commercialization of US Utility Patent Application No. 11/866,994. Approval to form a start-up company was received from the office of the Associate Provost for Research on 3/6/2009. The company (Fibrotherapeutics, Inc.) is in the process of being incorporated by the law firm Ballard Spahr Andrews & Ingersoll, LLP under their BEGIN (Ballard's Emerging Growth Innovation Network) Program.

Commercialization of Intellectual Property "Antibodies Against Extracellular Matrix (ECM) Proteins". Licensing agreements are being negotiated with two companies; PhosphoSolutions (Aurora, CO) and Elastin Products Company, Inc. (Owensville, MO).

Licensing agreement with Millipore, Inc. (Temecula, CA). We have licensed several ECM antibodies and proteins to this company for many years. In the most recent year, royalty income to my laboratory from this agreement covered 18 % of my salary. Additional income went to the MUSC Foundation for Research Development and to MUSC.

### **Publications:**

#### Primary Publications

1. **Hoffman S**, McMahon D. The role of the plasma membrane in the development of Dictyostelium discoideum. II. Developmental and topographic analysis of polypeptide and glycoprotein composition. *Biochim et Biophys Acta* 465:242-259, 1977.
2. **Hoffman S**, McMahon D. Defective glycoproteins in the plasma membrane of an aggregation minus mutant of Dictyostelium discoideum with abnormal cellular interactions. *J Biol Chem* 253:278-287, 1978.
3. **Hoffman S**, McMahon D. The effects of inhibition of development in Dictyostelium discoideum on changes in plasma membrane composition and topography. *Arch Biochem Biophys* 187:12-24, 1978.
4. Rutishauser U, **Hoffman S**, Edelman GM. Binding properties of a cell adhesion molecule from neural tissue. *Proc Natl Acad Sci USA* 79:685-689, 1982.
5. **Hoffman S**, Sorkin BC, White PC, Brackenbury R, Mailhammer R, Rutishauser U, Cunningham BA, Edelman GM. Chemical characterization of a neural cell adhesion molecule purified from embryonic brain membranes. *J Biol Chem* 257:7720-7729, 1982.
6. Cunningham BA, **Hoffman S**, Rutishauser U, Hemperly JJ, Edelman GM. Molecular topography of N-CAM: surface orientation and the location of sialic acid-rich and binding regions. *Proc Natl Acad Sci USA* 80:3116-3120, 1983.
7. **Hoffman S**, Edelman GM. Kinetics of homophilic binding by E and A forms of the neural cell adhesion molecule. *Proc Natl Acad Sci USA* 80:5762-5766, 1983.
8. Grumet M, **Hoffman S**, Edelman GM. Two antigenically related neuronal CAMs of different specificities mediate neuron-neuron and neuron-glia adhesion. *Proc Natl Acad Sci USA* 81:267-271, 1984.

9. Sorkin BC, **Hoffman S**, Edelman GM, Cunningham BA. Sulfation and phosphorylation of the neural cell adhesion molecule, N-CAM. *Science* 225:1476-1478, 1984.
10. **Hoffman S**, Chuong C-M, Edelman GM. Evolutionary conservation of key structures and binding functions of neural cell adhesion molecules. *Proc Natl Acad Sci USA* 81:6881-6885, 1984.
11. Grumet M, **Hoffman S**, Chuong C-M, Edelman GM. Polypeptide components and binding functions of neuron-glia cell adhesion molecules. *Proc Natl Acad Sci USA* 81:7989-7993, 1984.
12. Grumet M, **Hoffman S**, Crossin KL, Edelman GM. Cytotactin, an extracellular matrix protein of neural and non-neural tissues that mediates glia-neuron interaction. *Proc Natl Acad Sci USA* 82:8075-8079, 1985.
13. Crossin KL, **Hoffman S**, Grumet M, Thiery J-P, Edelman GM. Site-restricted expression of cytotactin during development of the chicken embryo. *J Cell Biol* 102:1917-1930, 1986.
14. **Hoffman S**, Friedlander DR, Chuong C-M, Grumet M, Edelman GM. Differential contributions of Ng-CAM and N-CAM to cell adhesion in different neural regions. *J Cell Biol* 103:145-158, 1986.
15. **Hoffman S**, Edelman GM. A proteoglycan with HNK-1 antigenic determinants is a neuron-associated ligand for cytotactin. *Proc Natl Acad Sci USA* 84:2523-2527, 1987.
16. Tan S-S, Crossin KL, **Hoffman S**, Edelman GM. Asymmetric expression in somites of cytotactin and its proteoglycan ligand is correlated with neural crest cell distribution. *Proc Natl Acad Sci USA* 84:7977-7981, 1987.
17. **Hoffman S**, Crossin KL, Edelman GM. Molecular forms, binding function and developmental expression patterns of cytotactin and CTB proteoglycan, an interactive pair of extracellular matrix molecules. *J Cell Biol* 106:519-532, 1988.
18. Jones FS, Burgoon MP, **Hoffman S**, Crossin KL, Cunningham BA, Edelman GM. A cDNA clone for cytotactin contains sequences similar to epidermal growth factor-like repeats and segments of fibronectin and fibrinogen. *Proc Natl Acad Sci USA* 85:2186-2190, 1988.
19. Prediger EA, **Hoffman S**, Edelman GM, Cunningham BA. Four exons encode a 93bp insert in three neural cell adhesion molecule mRNAs specific for chicken heart and skeletal muscle. *Proc Natl Acad Sci USA* 85:9616-9620, 1988.
20. Friedlander DR, **Hoffman S**, Edelman GM. Functional mapping of cytotactin: proteolytic fragments active in cell-substrate adhesion. *J Cell Biol* 107:2329-2340, 1988.
21. Becker JW, Erickson HP, **Hoffman S**, Cunningham BA, Edelman GM. Topology of cell adhesion molecules. *Proc Natl Acad Sci USA* 86:1088-1092, 1989.
22. Jones FS, **Hoffman S**, Cunningham BA, Edelman GM. A detailed structural model of cytotactin: protein homologies, alternative RNA splicing, and binding regions. *Proc Natl Acad Sci USA* 86:1905-1909, 1989.
23. Crossin KL, **Hoffman S**, Tan S-S, Edelman GM. Cytotactin and its proteoglycan ligand mark structural and functional boundaries in the somatosensory cortex of the early postnatal mouse. *Develop Biol* 136:381-392, 1989.
24. Crossin KL, Prieto AL, **Hoffman S**, Jones FS, Friedlander DR. Expression of adhesion molecules and the establishment of boundaries during embryonic and neural development. *Exp Neurol* 109:6-18, 1990.
25. Crossin KL, **Hoffman S**. Expression of adhesion molecules during the formation and differentiation of the avian endocardial cushion tissue. *Dev Biol* 145:277-286, 1991.
26. Rettig WJ, **Hoffman S**, Su SL, Garin-Chesa P. Species diversity of neuronectin and cytotactin expression patterns in the vertebrate central nervous system. *Brain Research* 590:219-228, 1992.
27. Tourkin A, Anderson T, LeRoy EC, **Hoffman S**. Eosinophil adhesion and maturation is modulated by laminin. *Cell Adhesion and Communication* 1:161-176, 1993.
28. Byeon MK, Sugi Y, Markwald RR, **Hoffman S**. NCAM polypeptides in heart development: Association of MSD region-containing forms with Z discs. *J Cell Biol* 128:209-221, 1995.

29. Balsamo J, Ernst H, Zanin MKB, **Hoffman S**, Lilien J. The interaction of the retina cell surface N-acetylgalactosaminylphosphotransferase with an endogenous proteoglycan ligand results in inhibition of cadherin mediated adhesion. *J Cell Biol* 129:1391-1401, 1995.
30. Ernst H, Zanin MKB, Everman D, **Hoffman S**. Receptor-mediated adhesive and anti-adhesive functions of chondroitin sulfate proteoglycan preparations from embryonic chicken brain. *J Cell Sci* 108:3807-3816, 1995.
31. Balsamo J, Ernst H, Zanin MKB, **Hoffman S**, Lilien J. Regulated binding of a PTP1B-like phosphatase to N-cadherin: control of cadherin-mediated adhesion by dephosphorylation of  $\beta$ -catenin. *J Cell Biol* 134:801-813, 1996.
32. Tourkin A, Bonner M, LeRoy EC, **Hoffman S**. Dot-like focal contacts in adherent eosinophils, their redistribution into peripheral belts, and correlated effects on cell migration and protected zone formation. *J Cell Sci* 109:2169-2177, 1996.
33. Makhluף HA, Stepniakowska J, **Hoffman S**, Smith E, LeRoy EC, Trojanowska M. IL-4 upregulates tenascin synthesis in scleroderma and healthy skin fibroblasts. *J Invest Dermatol* 107:856-859, 1996.
34. Balsamo J, **Hoffman S**, Lilien J. Control of cadherin mediated cell-cell adhesion through regulated association with the cytoskeleton. *Ciencia e Cultura* 48:341-346, 1996.
35. Bundy J, Rogers R, **Hoffman S**, Conway SJ. Segmental expression of aggrecan in the non-segmented perinotochordal sheath underlies normal segmentation of the vertebral column. *Mech Development* 79:213-217, 1998.
36. Capehart AA, Mjaatvedt CH, **Hoffman S**, Krug EL. Dynamic expression of a native chondroitin sulfate epitope reveals microheterogeneity of extracellular matrix organization in the embryonic chicken heart. *Anatomical Record* 254:181-195, 1999.
37. Loike JD, Cao L, Budhu S, Marcantonio EE, El-Khoury J, **Hoffman S**, Yednock TA, Silverstein SC. Differential regulation of  $\beta$ 1 integrins by chemoattractants regulates neutrophil migration through fibrin. *J Cell Biol* 144:1047-1056, 1999.
38. Zanin MKB, Bundy J, Ernst H, Wessels A, Conway SJ, **Hoffman S**. Distinct spatial and temporal distributions of versican and aggrecan in the embryonic chick heart. *Anatomical Record* 256:366-380, 1999. (Cover picture)
39. Ludwicka-Bradley A, Tourkina E, Suzuki S, Tyson E, Bonner M, Fenton II JW, **Hoffman S**, Silver RM. Thrombin upregulates interleukin-8 in lung fibroblasts via cleavage of proteolytically activated receptor-I and protein kinase C- $\epsilon$  activation. *Am J Resp Cell Mol Biol*. 22:235-243, 2000.
40. Li H, Leung TC, **Hoffman S**, Balsamo J, Lilien J. Coordinate regulation of cadherin and integrin function by the chondroitin sulfate proteoglycan neurocan. *J Cell Biol* 149:1275-1288, 2000.
41. Loike JD, Cao L, Budhu S, **Hoffman S**, Silverstein SC. Blockade of alpha5beta1 integrins reverses the inhibitory effect of tenascin on chemotaxis of human monocytes and polymorphonuclear leukocytes through three-dimensional gels of extracellular matrix proteins. *J Imm* 166: 7534-7542, 2001.
42. Tourkina E, **Hoffman S**, Fenton JW II, Lipsitz S, Silver RM, Ludwicka-Bradley A. Depletion of PKC- $\epsilon$  in normal and scleroderma lung fibroblasts has opposite effects on tenascin expression. *Arthritis and Rheum* 44: 1370-1381, 2001.
43. Mishima N, **Hoffman S**. Neurocan in the embryonic avian heart and vasculature. *Anat Record* 272A:556-562, 2003. (Cover picture)
44. Gillotte DM, Fox PL, Mjaatvedt CH, **Hoffman S**, Capehart AA. An in vitro method for analysis of chondrogenesis in limb mesenchyme from individual transgenic (hdf) embryos. *Methods in Cell Science*, 25:97-104, 2003.
45. Tourkina E, Gooz P, Oates J, Ludwicka-Bradley A, Silver RM, **Hoffman S**. Curcumin-induced apoptosis in scleroderma lung fibroblasts: Role of protein kinase C  $\epsilon$ . *Am J Respir Cell Mol Biol*, 31:28-35, 2004.
46. Kruzynska-Frejtak A, Wang J, Rogers R, Krug E, **Hoffman S**, Markwald RR, Conway SJ. Periostin is expressed within the developing teeth at the sites of epithelial-mesenchymal interaction. *Dev Dyn*, 229:857-868, 2004.

47. Snow HE, Riccio LM, Mjaatvedt CH, **Hoffman S**, Capehart AA. Versican expression during skeletal/joint morphogenesis and patterning of muscle and nerve in the embryonic mouse limb. *Anat Rec*, 282A:95-105, 2005.
48. May LA, Tourkina E, **Hoffman SR**, Dix TA. Detection and quantitation of curcumin in mouse lung cell cultures by matrix-assisted laser desorption ionization time of flight mass spectrometry. *Anal Biochem*, 337:62-69, 2005.
49. Kern CB, **Hoffman S**, Moreno R, Damon BJ, Norris RA, Krug EL, Markwald RR, Mjaatvedt CH. Immunolocalization of chick periostin protein in the developing heart. *Anat Rec*, 284A:415-423, 2005.
50. Peterson RE, **Hoffman S**, Kern MJ. Opposing roles of two isoforms of the Prx1 homeobox gene in chondrogenesis. *Develop Dynamics*, 233:811-821, 2005.
51. Tourkina E, Gooz P, Pannu J, Bonner M, Scholz D, Hacker S, Silver RM, Trojanowska M, **Hoffman S**. Opposing effects of PKC $\alpha$  and PKC $\epsilon$  on collagen expression by human lung fibroblasts are mediated via MEK/ERK and caveolin-1 signaling. *J Biol Chem*, 280:13879-13887, 2005.
52. Williams DR Jr, Presar AR, Richmond AT, Mjaatvedt CH, Hoffman S, Capehart AA. Limb chondrogenesis is compromised in the versican deficient hdf mouse. *Biochem Biophys Res Commun*, 334:960-966, 2005.
53. Moralez I, Phelps A, Riley B, Raines M, Wirrig E, Snarr B, Jin JP, Ven den Hoff M, **Hoffman S**, Wessels A. Muscularizing tissue in the avian heart is characterized by the expression of h1-calponin. *Dev Dyn*, 235:1648-1658, 2006.
54. Mishima N, **Hoffman S**, Hill EG, Krug EL. Chick embryos exposed to trichloroethylene in an *ex ovo* culture model show selective defects in early endocardial cushion tissue formation. *Birth Defects Res A Clin Mol Teratol*, 76:517-527, 2006.
55. Butcher JT, Norris RA, **Hoffman S**, Mjaatvedt CH, Markwald RR. Periostin promotes atrioventricular mesenchyme matrix invasion and remodeling mediated by integrin signaling through Rho/PI 3-kinase. *Develop Biol*, 302: 256-266, 2007.
56. Norris RA, Damon B, Mironov V, Kasyanov V, Ramamurthi A, Moreno-Rodriguez R, Trusk T, Potts JD, Goodwin RL, Davis J, **Hoffman S**, Wen X, Sugi Y, Kern CB, Mjaatvedt CH, Turner DK, Oka T, Conway SJ, Molkentin JD, Forgacs G, Markwald RR. Periostin regulates collagen fibrillogenesis and the biomechanical properties of connective tissues. *J Cell Biochem*, 101:695-711, 2007.
57. Kern CB, Norris RA, Thompson RP, Argraves WS, Fairey SE, Reyes L, **Hoffman S**, Markwald RR, Mjaatvedt CH. Versican proteolysis mediates myocardial regression during outflow tract development. *Develop Dynamics*, 236: 671-683, 2007.
58. Shepard JB, Krug HA, LaFoon BA, **Hoffman S**, Capehart AA. Versican expression during synovial joint morphogenesis. *Int J Biol Sci*, 3:380-384, 2007.
59. Wirrig EE, Snarr BS, Chintalapudi MR, O'Neal JL, Phelps AL, Barth JL, Fresco VM, Kern CB, Mjaatvedt CH, Toole BP, **Hoffman S**, Trusk TC, Argraves WS, Wessels A. Cartilage link protein 1 (Crtl1), an extracellular matrix component playing an important role in heart development. *Dev Bio*, 310:291-303, 2007.
60. Shepard JB, Gliga DA, Morrow AP, **Hoffman S**, Capehart AA. Versican knock-down compromises chondrogenesis in the embryonic chick limb. *Anat Rec*, 291:19-27, 2008.
61. Tourkina E, Richard M, Gooz P, Bonner M, Pannu J, Harley R, Bernatchez PN, Sessa WC, Silver RM, **Hoffman S**. Antifibrotic properties of caveolin-1 scaffolding domain in vitro and in vivo. *Am J Physiol Lung Cell Mol Physiol*, 294:L843-L861, 2008.
62. Inai K, Norris RA, **Hoffman S**, Markwald RR, Sugi Y. BMP-2 induces cell migration and periostin expression during atrioventricular valvulogenesis. *Dev Biol*, 315:383-396, 2008.
63. Norris RA, Moreno-Rodriguez RA, Sugi Y, **Hoffman S**, Amos J, Hart MM, Potts JD, Goodwin RL, Markwald RR. Periostin regulates atrioventricular valve maturation. *Dev Biol* 316:200-213, 2008.

64. Gooz P, Gooz M, Baldys, **Hoffman S**. ADAM-17 regulates endothelial cell morphology, proliferation, and in vitro angiogenesis. *Biochem Biophys Res Com*, 2009, in press.
65. Norris RA, Potts JD, Yost MJ, Junor L, Brooks T, Tan H, **Hoffman S**, Hart MM, Damon B, Markwald RR, Goodwin RL. Periostin promotes a fibroblastic lineage pathway in atrioventricular valve progenitor cells. *Dev Dynamics*, 2009, in press.

### Book Chapters

1. McMahon D, **Hoffman S**, Fry W, West C. The involvement of the plasma membrane in the development of Dictyostelium discoideum. In: Developmental Biology: Pattern Formation, Gene Regulation (McMahon D, Fox CF, eds.), pp 60-75, 1975, WA Benjamin, Menlo Park, CA.
2. McMahon D, **Hoffman S**. The cell surface and the development of the cellular slime mold Dictyostelium discoideum. In: Surface of Normal and Malignant Cells (Hynes RO, ed.), pp 421-459, 1978, Wiley, London.
3. Edelman GM, **Hoffman S**, Chuong C-M, Thiery J-P, Brackenbury R, Gallin WJ, Grumet M, Greenberg ME, Hemperly JJ, Cohen C, Cunningham BA. Structure and modulation of neural cell adhesion molecules in early and later embryogenesis. In: Cold Spring Harbor Symposia on Quantitative Biology, Vol. XLVIII, Cold Spring Harbor Laboratory, pp 515-526, 1983.
4. **Hoffman S**, Edelman GM. The mechanism of binding of neural cell adhesion molecules. In: Gene Expression and Cell-Cell Interactions in the Developing Nervous System (Lauder JM, Nelson P, eds.), pp 147-160, 1984, Plenum Publishing Corporation, New York.
5. **Hoffman S**, Grumet M, Edelman GM. Cell adhesion molecules in the histogenesis of nerve and muscle. In: Cardiac Morphogenesis (Ferrans V, Rosenquist G, Weinstein C, eds.), pp 36-43, 1985, Elsevier Science Publishing Co., Inc., New York.
6. Edelman GM, **Hoffman S**, Chuong C-M, Cunningham BA. The molecular bases and dynamics of cell adhesion in embryogenesis. In: Molecular Determinants of Animal Form, UCLA Symposia on Molecular and Cellular Biology, New Series, Volume 31, pp 195-221, 1985 (Edelman GM, ed.), Alan R. Liss, Inc., New York.
7. Murray BA, **Hoffman S**, Cunningham BA. Molecular features of cell-cell adhesion molecules. *Prog Brain Res* 71:35-45, 1987.
8. **Hoffman S**, Crossin KL, Edelman GM. Coordinate expression and function of cytotactin and its proteoglycan ligand. In: Morphoregulatory Molecules (Edelman GM, Cunningham BA, Thiery J-P, eds.), pp 259-282, 1990, Wiley, New York.
9. **Hoffman S**, Crossin KL, Jones FS, Friedlander DR, Edelman GM. Cytotactin and cytotactin-binding proteoglycans: an interactive pair of extracellular matrix proteins. *Ann NY Acad Sci* 580:288-301, 1990.
10. **Hoffman S**, Crossin KL, Prediger EA, Cunningham BA, Edelman GM. Expression and function of cell adhesion molecules during the early development of the heart. *Ann NY Acad Sci* 588:73-86, 1990.
11. **Hoffman S**, Crossin KL. Adhesion molecules in embryogenesis and histogenesis. In: The Extracellular Matrix and Liver Disease (Zern M, Reid L, eds.), pp. 67-90, 1992, Marcel Dekker, New York.
12. **Hoffman S**. Assays of cell adhesion: In: Practical Methods in Cell-Cell Interactions (Stevenson, B., Gallin, W.J., and Paul, D., eds.), pp. 1-30, 1992, Oxford University Press, Oxford.
13. **Hoffman S**, Dutton SL, Ernst H, Boackle MK, Everman D, Tourkin A, Loike JD. Functional characterization of anti-adhesion molecules. *Perspectives in Dev Neurobiol*, 2:101-110, 1994.
14. Lilien J, **Hoffman S**, Eisenberg C, Balsamo J.  $\beta$ -catenin is a target for extracellular signals controlling cadherin function: The neurocan-GalNAcPTase connection. *Current Topics in Development* 35:161-189, 1997.

15. **Hoffman S**, Mishima N, Krug EL. An Improved Model for Evaluating Trichloroethylene and its Metabolites as Cardiac-Specific Teratogens, pp. 69-79. In "Trichloroethylene: The Scientific Basis of Risk Assessment". Editors: Lawrence C. Mohr, M.D., David G. Hoel, Ph.D., and David Jollow, Ph.D. Medical University of South Carolina Press, 2004.