

CURRICULUM VITAE

Deborah E. Sullivan, PhD

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EDUCATION AND TRAINING:

Academic Degrees:

1981-1984	B.S. Microbiology, Southeastern Louisiana University Hammond, LA
1985 -1988	M.S. Microbiology, Southeastern Louisiana University Hammond, LA
1994 -1999	Ph.D. Molecular and Cellular Biology, Tulane University New Orleans, LA

Postgraduate:

1999 – 2000	Post-Doctoral Fellow, Clinical Laboratory Sciences, Louisiana State University Health Sciences Center, New Orleans, LA.
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APPOINTMENTS AND POSITIONS:

2008 – present	Associate Professor, Department of Microbiology and Immunology. Tulane University Health Sciences Center, New Orleans, LA.
2006 – 2008	Assistant Professor, Department of Microbiology and Immunology. Tulane University Health Sciences Center, New Orleans, LA.
2002 – 2006	Research Assistant Professor, Department of Pathology. Tulane University Health Sciences Center, New Orleans, LA.
2001 – 2002	Research Assistant Professor, Department of Microbiology and Immunology. Tulane University Health Sciences Center, New Orleans, LA.
2000 – 2001	Instructor and Research Associate, Clinical Laboratory Sciences, Louisiana State University Health Sciences Center, New Orleans, LA.
1994 – 1999	Associate Scientist, Department of Pathology, Tulane Medical School, New Orleans, LA.
1988 – 1994	Medical Research Specialist, Department of Pathology, Tulane Medical School, New Orleans, LA.
1986 – 1988	Research Associate, Department of Biological Sciences, Southeastern Louisiana University, Hammond, LA.
1985 – 1986	Research Associate, Department of Biochemistry, Louisiana State University Medical Center, New Orleans, LA.
1980 – 1985	Research Assistant, Department of Biological Sciences, Southeastern Louisiana University, Hammond, LA.

PROFESSIONAL SOCIETIES AND HONORS:

American Thoracic Society
American Association for the Advancement of Science
Louisiana Cancer Research Consortium
Tulane Cancer Center
Tulane Gene Therapy Center

Research Scholarship, Southeastern Louisiana University, 1985
Louisiana Land and Exploration Scholarship, 1986
Chancellor's Award for Outstanding Research, Tulane University Medical School, 1997
Student Research Grant, Cancer Association of Greater New Orleans, 1998

PROFESSIONAL SERVICE:

2005	Reviewer for British Lung Foundation Fellowship Program
2005	Sixteenth Annual Tulane Health Sciences Research Day Poster Review Group (, 2006, 2007)
2006	Seventeenth Annual Tulane Health Sciences Research Day Poster Review Group (, 2006, 2007)
2006 – date	Tulane Health Sciences Center Institutional Animal Care and Use Committee

2006 – date	Tulane Health Sciences Center Nominating Committee
2007	Eighteenth Annual Tulane Health Sciences Research Day Poster Review Group
2007 – date	Tulane University Senate Physical Facilities Committee
2007 – date	Diboll Laboratory Advisory Committee
2007 – date	Tulane Research Days Steering Committee
2007	Committee to explore the expansion of genetics and gene therapy at Tulane University
2008	Task Force to \$300 Million, Regenerative and Restorative Medicine. Tulane University
2008	Project 300 Working Group, Tulane University
2008	Search Committee for Director of Gene Therapy
2009	Nineteenth Annual Tulane Health Sciences Research Day Poster Review Group

Ad hoc Journal Reviewer:

American Journal of Respiratory Cell and Molecular Biology
Experimental Lung Research
Journal of Hepatology
Journal of Laboratory Investigation
Proceedings of the National Academy of Sciences

FUNDING:

Active Research Support:

NIH 1R01 CA132603-01, “Molecular mechanisms of lung cancer induced by cigarette smoke and asbestos” 05/01/2008 – 04/30/2013 Total direct costs = \$959,424; Co-Principal Investigators: D.E. Sullivan, G.F. Morris, B. Shan. 1.92 months/calendar year effort.

NIH RO1 HD051998-01A1 “Human Cytomegalovirus-Induced Inhibition of Cytotrophoblast Invasion.” 04/01/2008 – 03/31/2013 Total direct costs \$1,033,012; Principal Investigator, Cindy Morris; Co-investigator, Deborah E. Sullivan. 0.9 months/calendar year effort.

NIH, PO1 HL075161-01A1, “Homing and Differentiation of Adult Stem Cells to Lung”, 07/18/05 – 05/31/10, Total direct cost = \$7,307,966; Principal Investigator, D. Prockop; Project 2 “Bone-Marrow Derived Stromal Cells in Rat Models of Lung Injury, Project Leader, J.A. Lasky; Co-Investigator, D. E. Sullivan, 3 months/calendar year effort.

NIH, R01 HL083901-01, “Role of EBV Gene Products in Lung Fibrogenesis”, 05/28/06 – 04/30/10, Total direct cost = \$1,000,000; Principal Investigator, J.A. Lasky; Co-Investigator, D. E. Sullivan, 2.4 months/calendar year effort.

State of Louisiana, BORSF – Research Competitiveness Program, “Adult Stem Cells in Lung Cancer Therapy”, 07/01/05 – 06/30/08, total costs = \$ 198,260; Principal Investigator, G.F. Morris, Co-Investigator, D. E. Sullivan, 1.2 months/calendar year effort.

Previous Research Support:

Tulane Research Enhancement Fund, Phase II. “Lung Cancer and Stem Cells”, 04/01/2007 – 03/31/2009 Total direct costs = \$85,000; Principal Investigator, D.E. Sullivan

NIH, R01-HL73252, “Culture and Lung Engraftment of Mesenchymal Stem Cells”, 9/30/2003 - 7/31/2008, Total direct cost = \$1,243,150; Principal Investigator, Darwin J. Prockop; Co-Investigator, D.E. Sullivan, 2.4 months/calendar year effort.

NIH, R01 HL60532-6, “TGF-beta in Interstitial Lung Disease”, 09/01/02 – 08/31/06, direct cost = \$1,125,000, total costs = \$1,452,954 ; Principal Investigator, A.R. Brody, Research Assistant, D. E. Sullivan, 20% effort.

NIH, RO1 ES06766-11, “TNF-alpha to TGF-beta₁ Signal Transduction”, 07/01/04-06/30/08, direct cost = \$1,000,000, total costs = \$1,230,000 ; Principal Investigator, A.R. Brody, Co-Investigator, D. E. Sullivan, 25% effort.

Cancer Association of Greater New Orleans, Research Grant, “The Role of Integrin-Linked Kinase in Neovascularization and Tumor Progression”, 02/01/02 – 2/29/03, Direct Costs = \$13,636, Total Costs = \$15,000; Principal Investigator, Deborah Sullivan.

LSUHSC School of Allied Health Research Seed Funds, “Antiviral activity of anti-HCV single-chain antibodies”, 10/01/99 - 06/30/00, Direct Costs=\$5,000 (No indirect costs); Principal Investigator, Deborah E. Sullivan.

Cancer Association of Greater New Orleans, Student Research Grant, “Adenoviral mediated expression of a single chain antibody to hepatitis C virus nonstructural protein NS4A”, 07/01/98 – 10/01/98, Direct Costs = \$1,500 (No indirect costs); P.I., Deborah E. Sullivan

MENTORING AND TEACHING ACTIVITIES:

Post-Doctoral Fellows:

2007 – present	Elizabeth Abboud, Ph.D., Department of Microbiology and Immunology, Tulane University School of Medicine, NRSA T32 Training Grant
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Graduate Students (Primary Thesis Advisor):

2008 – present Magdalena Angelova, Biomedical Sciences Graduate Program,
Tulane University School of Medicine

Graduate Student Thesis Committees:

2002 – 2005 Heather Lamarca, Molecular and Cellular Biology Graduate
Program, Tulane University School of Medicine

2002 – 2007 Elizabeth Abboud, Molecular and Cellular Biology Graduate
Program, Tulane University School of Medicine

2002 – 2007 Tai-Cheng Lai, Department of Environmental Health Sciences,
School of Public Health and Tropical Medicine, Tulane University

2003 – 2006 Bryan Shelby, Molecular and Cellular Biology program, Tulane
University School of Medicine

2004 – 2008 Joni Ylostalo, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2004 – 2008 Mandolin Whitney, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2005 – 2008 Thaidra Gaufin, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2006 – present Suzanne Tomchuck, Biomedical Sciences Graduate Program,
Tulane University School of Medicine

2006 – present Julie Semon, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2006 – present Gregory Block, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2007 – present Wen-Tzu Lai, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2008 – present Carolyn Marsden, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2008 – present Elizabeth Norton, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2008 – present David Nielson, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2008 – present Becky Brocato, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2008 – present Lilia Melnik, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2008 – present Mark Sides, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

2008 – present Jessica Warner, Physician Scientist Program, Biomedical Sciences
Graduate Program, Tulane University School of Medicine

2009 – present Christine Gagliardi, Biomedical Sciences Graduate Program,
Tulane University School of Medicine

2009 – present Hong Nguyen, Biomedical Sciences Graduate Program, Tulane
University School of Medicine

Undergraduate Students:

2003	Brian Hannah, Louisiana Alliance for Minority Participation, Xavier University
2004	Jennifer Dye, Louisiana Alliance for Minority Participation, Xavier University

EDUCATIONAL LECTURES:

2004 – present	Advanced Cell Biology (MCBP 607): Lecturer, Tulane University Graduate program in Biomedical Sciences
2006 – present	Medical Microbiology: Lecturer and Lab Instructor, T2, Tulane School of Medicine
2007 – present	Biomedical Sciences Research Methods (MCBP 712-01): Lecturer, Tulane University Graduate program in Biomedical Sciences
1999 – 2000	Introduction to Molecular Diagnostic Techniques (MTEC 4119): Course Co-Coordinator and Instructor, Louisiana State University Health Sciences Center
1985 – 1988	General Microbiology Lab (Micro 107): Instructor, Southeastern Louisiana University
1985 – 1988	Medical Microbiology Lab (Micro 224): Instructor, Southeastern Louisiana University

PUBLICATIONS:

1. Sheiness DE, Sullivan D, Quick staining of RNA in formaldehyde gels. *Focus*. 1986;8:4.
2. Sullivan DE, Storch, TG. Tissue- and development-specific expression of HBGF-1 mRNA. *Biochimica et Biophysica Acta*. 1991;1090:17.
3. Sullivan DE, Malter, JS. A rapid and inexpensive method for the addition of poly A coding tracts to transcription vectors. *BioTechniques*. 1991;11:614.
4. Wu J, Sullivan D, Gerber, MA. Quantitative polymerase chain reaction for hepatitis B virus DNA. *J. Virol. Methods*. 1994;49:331-342.
5. Sullivan, DE and Gerber, MA. Conservation of hepatitis C virus 5' untranslated sequences in hepatocellular carcinoma and the surrounding liver. *Hepatology*. 1994;19:551-553.
6. Lei D, Wu J, Sullivan DE, Dash S, Gerber MA. Detection of hepatitis B virus sequences in liver tissues of seronegative organ-donors. *International Hepatology Communications*. 1995;3:154-160.
7. Saito K, Sullivan DE, Haruna Y, Thung SN, and Gerber MA. Detection of hepatitis C virus RNA sequences in hepatocellular carcinoma and its precursors by microdissection PCR. *Arch. Path. & Lab. Med*. 1997;121:400-403.

8. Sullivan DE, Dash S, Du H, Hiramatsu N, Aydin F, Kolls J, Blanchard J, Baskin G, and Gerber MA. Liver directed gene transfer in non-human primates. *Hum. Gene Ther.* 1997;8:1195-1206.
9. Shean MK, Baskin G, Sullivan DE, Cavender D, Shellito JE, Schwarzenberger PO, and Kolls JK. Immunomodulation and adenoviral gene transfer to the lungs of non-human primates. *Hum. Gene Ther.* 2000;11:1047-1055.
10. Lu H, Sullivan D, Dash S. Adenovirus induced acute hepatitis in non-human primates after liver-directed gene therapy. *Zhonghua Gan Zang Bing Za Zhi* 2001;9:291-293.
11. Morris CB, Thanawastain A, Sullivan DE, and Clements JD. Identification of a peptide capable of inducing an HIV-1 Tat-specific CTL response. *Vaccine* 2002;20:12-15.
12. Sullivan DE, Mondelli M, Curiel D, Krasnykh V, Mikheeva, G, Gaglio P, Morris C, Dash S, and Gerber MA. Construction and characterization of an intracellular single-chain human antibody to hepatitis C virus nonstructural 3 protein. *J. Hepatol.* 2002;37:660-668.
13. Sullivan DE, Ferris MB, Pociask D, and Brody, AR. TNF-alpha Induces TGF-beta1 Expression in Lung Fibroblasts Through the ERK Pathway. *Am J Respir Cell Mol Biol.* 2005;32(4):342-349.
14. Hazari S, Patil A, Joshi V, Sullivan DE, Fermin CD, Garry RF, Elliot R and Dash S. IFN-a inhibits translation mediated by the internal ribosome entry site of six different hepatitis C virus genotypes. *J Gen Virol.* 2005;86(Pt 11):3047-53.
15. Abboud ER, Coffelt SB, Figueroa YG, Zvezdaryk KJ, Nelson AB, Sullivan DE, Morris CB, Tang Y, Beckman BS, Scandurro AB. Integrin-linked kinase: A hypoxia-induced anti-apoptotic factor exploited by cancer cells. *Int J Oncol.* 2007;30(1):113-22.
16. Spees J, Pociask D, Sullivan D, Whitney M, Lasky J, Prockop D and Brody AR. Adult Rat Bone Marrow Progenitor Cells Migrate and Undergo Site-Specific Differentiation During Asbestos-Induced Pulmonary Fibrosis. *Am J Respir Crit Care Med.* 2007;176:385-394.
17. Shelby BD, LaMarca HL, McFerrin HE, Nelson AB, Lasky JA, Sun G, Myatt L, Offermann MK, Morris CA and Sullivan DE. Kaposi's sarcoma associated herpesvirus G-protein coupled receptor activation of cyclooxygenase-2 in vascular endothelial cells. *Virology J.* 2007;4(1):87.
18. Qi Y, Brody AR and Sullivan DE. Laser Capture Microdissection reveals dose-response of gene expression in situ consequent to asbestos exposure. *Int J Exp Path.* 2007;88(6):415-425.

19. Spees JL, Lasky JA, Whitney MJ, Laboy M, Ylostalo J, Sullivan DE and Prockop DJ. Non-hematopoietic bone marrow progenitors contribute to repair and remodeling of the lung and heart in a rat model of progressive pulmonary hypertension. *FASEB J.* 2007;22(4):1226-1236.
20. Sullivan DE, Pociask D, Ferris MB and Brody AR. The Latent Form of TGF-beta₁ is Induced by TNF-alpha Through an ERK Specific Pathway and is Activated by Asbestos-Derived Reactive Oxygen Species *in vitro* and *in vivo*. *J Immunotox.* 2008;5:145-149.
21. Uddin MN, Horvat D, Glaser SS, Danchuk S, Mitchell BM, Sullivan DE, Morris CA, Puschett JB. Marinobufagenin Inhibits Proliferation and Migration of Cytotrophoblast and CHO cells. *Placenta.* 2008;29:266-73.
22. Yue X, Li X, Nguyen HT, Chin DR, Sullivan DE, Lasky JA. Transforming growth factor-beta1 induces heparan sulfate 6-O-endosulfatase 1 expression *in vitro* and *in vivo*. *J Biol Chem.* 2008;283(29):20397-407.
23. Sullivan DE, Ferris MB and Brody AR. Tumor necrosis factor-alpha induction of transforming growth factor-beta₁ is mediated by AP-1 in lung fibroblasts. *J Cell Mol Med.* 2009; Jan 14 [Epub ahead of print].
24. Block GJ, Ohkouchi S, Fung F, Frenkel J, Gregory C, Pochampally R, DiMattia G, Sullivan DE, Prockop DJ. Multipotent Stromal Cells (MSCs) are Activated to Reduce Apoptosis in Part by Upregulation and Secretion of Stanniocalcin-1 (STC-1). *Stem Cells.* 2009;27:670-681.
25. Lai T-C, Pociask DA, Ferris MB, Nguyen HT, Brody AR, Miller CA, and Sullivan DE. Small interfering RNAs (siRNAs) targeting TGF-β₁ mRNA suppress asbestos-induced expression of TGF-β₁ and CTGF in fibroblasts. *J Environ Path Tox Oncol.* 2009 (in press).
26. Pociask DA, Ferris MB, Sullivan DE and Brody AR. TGF-beta₁ Activated on Alveolar Surfaces by Reactive Oxygen Species from Inhaled Chrysotile Asbestos Fibers Induces Fibroproliferative Lesions at Sites of Fiber Deposition. *Int J Exp Pathol.* 2009 (submitted).

Book Chapters:

1. McFerrin HE, Sullivan DE, Nelson AB, Shelby BD, LaMarca HL and Morris CA. Tat-Induced Angiogenesis. Watson RR, ed. *AIDS and Heart Disease.* New York: Marcel Dekker, Inc. 2004.
2. Sullivan DE and Brody AR. The asbestos model of interstitial fibrosis. Donaldson K and Borm P, ed. *Particle Toxicology.* Boca Raton: Taylor & Francis. 2006:227-244.

PAPERS PRESENTED AT PROFESSIONAL MEETINGS WHILE IN CURRENT POSITION (2001-2008):

National Presentations:

Keystone Symposia, HIV Pathogenesis and AIDS Vaccines in the New Millennium. Keystone, Colorado from March 28 – April 3, 2001: (Poster). "Identification of an H-2d CTL Epitope in HIV-1 Tat." Cindy B. Morris, Ann Thanawastien, Deborah E. Sullivan, John D. Clements.

2002 Grantees Meeting for the HIV RFA Program on Endothelial Dysfunction in HIV Infection in Bethesda, MD. from May 2-3: (Poster). "Molecular Mechanism of Tat-Induced Angiogenesis." D.E. Sullivan, A.B Nelson, A.P. Rice, H. McFerrin, H.L.LaMarca, B. Ensoli and C. A. Morris.

American Thoracic Society 99th International Conference in Seattle, WA. May 2003 (Poster). "TNF-alpha Regulation of TGF-beta in Interstitial Pulmonary Fibrosis." D.E. Sullivan, D.A. Pociask, O. David, J. Dye and A.R. Brody.

Keystone Symposia, siRNAs and miRNAs. Keystone, Colorado. April 14-19, 2004: (Poster). "Use of Small Interfering RNAs to Block Expression of TNF-alpha and TGF-beta1 in Lung in Response to Fibrogenic Agents." D.E. Sullivan, E.K. Flemington, M. Ferris, W.C. Leung and A.R. Brody.

American Thoracic Society 100th International Conference in Orlando, FL. May 2004 (Poster discussion). "Introduction of Small Interfering RNAs Block Endogenous Expression of TNF-alpha." D.E. Sullivan, E.K. Flemington, M. Ferris, D.A. Pociask, W.C. Leung and A.R. Brody.

American Thoracic Society 100th International Conference in Orlando, FL. May 2004. "TNF-alpha Stimulates TGF-beta1 Gene Expression in Mouse Lung Cells through Activation of the MEK/ERK Signaling Pathway." M. Ferris, A.R. Brody and D.E. Sullivan.

American Thoracic Society 100th International Conference in Orlando, FL. May 2004. (Poster Discussion). "Transcriptional Activation of TGF-beta1 by TNF-alpha in Mouse Lung Fibroblasts." D.E. Sullivan, M. Ferris, D.A. Pociask, and A.R. Brody.

World College of Bronchology in Barcelona, Spain. June 20-23, 2004 : (Poster). "PTEN Inactivation in Non-Small Cell Lung Cancer. O. David, D.E. Sullivan and A.R. Brody.

13th International Colloquium on Lung Fibrosis in Banff Canada. Oct 17-20, 2004 (Talk). "TNF-alpha mediates expression of latent TGF-beta through a MEK/ERK signaling pathway, and the latent form is activated by asbestos-derived oxygen radicals in vitro and in vivo." A.R. Brody, D.A. Pociask, M. Ferris and D.E. Sullivan.

American Thoracic Society 101st International Conference in San Diego, CA. May 2005 (Poster). "Use of siRNAs to Understand the Role of TNF-alpha and TGF-beta₁ in Pulmonary Fibrosis." D.E. Sullivan, M. Ferris, D. Pociask, T.C. Lai and A.R. Brody.

American Thoracic Society 101st International Conference in San Diego, CA. May 2005 (Poster Discussion). "TNF-alpha Induction of TGF-beta₁ Requires *de novo* Transcription and Involves TGF-beta₁ mRNA Stabilization." D.E. Sullivan, M. Ferris, D. Pociask and A.R. Brody.

American Thoracic Society 101st International Conference in San Diego, CA. May 2005 (Poster Discussion). "Rat Bone Marrow-Derived Cells Migrate to the Lung and Differentiate in Asbestos-Induced Fibroproliferative Lesions." A.R. Brody, D.A. Pociask, D.E. Sullivan, M.J. Whitney, J.A. Lasky, D.J. Prockop, and J.L. Spees.

American Thoracic Society 101st International Conference in San Diego, CA. May 2005 (Poster). "Overexpression of TNF-alpha Using an Adenoviral Vector Stimulates ERK Phosphorylation and TGF-beta₁ Expression in Mice." D.A. Pociask, M.B. Ferris, A.R. Brody and D.E. Sullivan.

American Thoracic Society 101st International Conference in San Diego, CA. May 2005 (Poster). Reactive Oxygen Species (ROS) in the Induction of TGF-beta by TNF-alpha. D.A. Pociask, M.B. Ferris, D.E. Sullivan and A.R. Brody.

American Thoracic Society 101st International Conference in San Diego, CA. May 2005 (Poster). "PTEN Inactivation in Non-Small Cell Lung Cancer." O. David, D.E. Sullivan, K.L. Kovitz and A.R. Brody.

University of Montana, Missoula, MT July 28 & 29, 2005. (Invited lecture). The Latent Form of TGF-beta₁ is Induced by TNF-alpha Through an ERK Specific Pathway and is Activated by Asbestos-Derived Reactive Oxygen Species *in vitro* and *in vivo*. D.E. Sullivan, D.A. Pociask and A.R. Brody

American Thoracic Society 102nd International Conference in San Diego, CA. May 2006 (Poster). "Transcriptional Regulation of Transforming Growth Factor-beta₁ by Tumor Necrosis Factor-alpha in Fibroblasts." D.E. Sullivan, M. Ferris, D. Pociask and A.R. Brody.

American Thoracic Society 102nd International Conference in San Diego, CA. May 2006 (Talk). *In vivo* activation of TGF-beta by asbestos-induced reactive oxygen species." D.A. Pociask, T.-C. Lai, M. Ferris, D.E. Sullivan and A.R. Brody.

American Thoracic Society 102nd International Conference in San Diego, CA. May 2006 (Talk). "Laser Capture Microdissection (LCM) Reveals Patterns of Growth Factor Expression in Asbestos-Induced Fibrogenic Lesions, Adjacent Lung Tissue and Pleura." Y. Qi, D. Pociask, D.E. Sullivan, A. R. Brody.

North Carolina State University, Nov. 13, 2006 (Invited Lecture). Tumor Necrosis Factor-alpha: A Master Cytokine in Lung Fibrogenesis. D.E. Sullivan.

American Thoracic Society 103rd International Conference in San Francisco, CA. May 2007 (Poster). TNF-alpha Induction of TGF-beta₁ is mediated by AP-1 in Lung Fibroblasts. D.E. Sullivan, M. Ferris and A.R. Brody.

American Thoracic Society 104th International Conference in Toronto, Canada. May 2008 (Poster). Bronchioalveolar stem cells proliferate in response to asbestos-induced injury. K. Honer zu Bentrup, M. B. Ferris, M. Whitney, S. Danchuk, B. Shan, G. F. Morris, A. R. Brody and D. E. Sullivan.

American Thoracic Society 104th International Conference in Toronto, Canada. May 2008 (Poster). Regulation of inflammation by the Epstein-Barr Virus Zta protein. James F. Guenther, Hong T. Nguyen, Svitlana D. Danchuk, Deborah E. Sullivan, Joseph A. Lasky, Erik K. Flemington, Gilbert F. Morris.

American Thoracic Society 104th International Conference in Toronto, Canada. May 2008 (Poster). Modulation of Interstitial Lung Disease Initiated by Transforming Growth Factor- β -Expressing Adenovirus by Mutant p53 Expression in the Lung Epithelium. G.F. Morris, J.F. Guenther, D.A. Pociask, D.E. Sullivan and A.R. Brody.

Regional Presentations:

Southeastern Louisiana University, Hammond, LA, April 8, 2005. (Invited lecture). TNF-alpha regulation of TGF-beta in Interstitial Pulmonary Fibrosis. Deborah E. Sullivan

Local Presentations:

Fourteenth Annual Tulane Health Sciences Research Days, May 1, 2002: (Poster). "The Role of Integrin-Linked Kinase in Neovascularization and Tumor Progression." Deborah E. Sullivan, Anne B. Nelson, Heather LaMarca, Amy Green, Jamie L. Dominique, and Cindy A Morris.

Fifteenth Annual Tulane Health Sciences Research Days. New Orleans, LA, April 24-25, 2004: (Poster Discussion). "TNF-alpha Regulation of TGF-beta1 in Interstitial Pulmonary Fibrosis. J. Dye, M. Ferris, D.A. Pociask, A.R. Brody and D.E. Sullivan.

Fifteenth Annual Tulane Health Sciences Research Days. New Orleans, LA, April 24-25, 2004: (Poster Discussion). "Adenovirus-Mediated Expression of TGF-beta1 Antisense RNA Reduces Cellular TGF-beta1 Transcripts in Mouse Fibroblasts. J. Liu, D.E. Sullivan G.S. Warshamana, A.R. Brody and W.-C. Leung.

Sixteenth Annual Tulane Health Sciences Research Days. New Orleans, LA, April 28-29, 2004: (Poster Discussion). "TNF-alpha Stimulates TGF-beta1 Gene Expression in Mouse Lung Cells Through Activation of the MEK/ERK Signaling Pathway. M. Ferris, D.A. Pociask, A.R. Brody and D.E. Sullivan.

Seventeenth Annual Tulane Health Sciences Research Days. New Orleans, LA, March 9-10, 2005 (Poster). Asbestos Derived ROS Activate Latent TGF-beta In-Vivo at Sites of Fiber Deposition. DA Pociask, TC Lai, MB Ferris, DE Sullivan and AR Brody.

Seventeenth Annual Tulane Health Sciences Research Days. New Orleans, LA (2005).

Seventeenth Annual Tulane Health Sciences Research Days. New Orleans, LA, March 9-10, 2005 (Poster). Tumor Necrosis Factor-alpha Induction of Transforming Growth

Factor-beta1 mRNA Stabilization. M. Ferris, D. Pociask, H Nguyen, A.R. Brody and D.E. Sullivan.

Seventeenth Annual Tulane Health Sciences Research Days. New Orleans, LA, March 9-10, 2005 (Poster). Transforming Growth Factor-beta1 and Collagen Expression are Increased in Developing Fibrotic Lesions Isolated by Laser Capture Microdissection. Qi Yin, DE Sullivan. DA Pociask, MB Ferris, and AR Brody.

Tulane Health Sciences Center, Department of Pathology Grand Rounds, February 25, 2005 (Invited Lecture). Tumor Necrosis Factor-alpha: A Master Cytokine in Lung Fibrogenesis.

Tulane Health Sciences Center, Department of Pathology Grand Rounds, January 4, 2008 (Invited Lecture). A Role for Bronchioalveolar Stem Cells in Asbestos-Induced Lung Carcinogenesis.

Nineteenth Annual Tulane Health Sciences Research Days. New Orleans, LA, March 26 & 27, 2008 (Poster). Kaposi's Sarcoma-Associated Herpesvirus (KSHV) vGPCR Promotes Survival and Induces Expression of Bcl-2 in Endothelial Cells. ER Abboud, BD Shelby, MB Ferris, AB Nelson, CA Morris and DE Sullivan.

MAJOR AREAS OF RESEARCH INTERESTS:

Lung injury and repair, lung carcinogenesis, KSHV-induced angiogenesis and tumorigenesis

Current projects:

1. Determine the molecular mechanisms through which chronic inflammation promotes lung cancer. Chronic inflammation in the lung is a known risk factor for lung cancer, a virtually fatal disease with no effective therapy. However, the molecular mechanisms underlying tumor-promoting effects of chronic inflammation remain enigmatic. The asbestos model of lung injury is well established in our laboratory and it serves as a paradigm for inducing the initial events that lead to carcinogenesis. Although regulated use has reduced the risk of asbestos to human health, the asbestos model is appropriate for other bio-persistent particles that cause chronic inflammation and deposit in a similar pattern, such as nanoparticles, an emerging pollutant stream. Cigarette smoke is a potent inducer of inflammation in the lung and increases the oncogenic potential of asbestos by unknown mechanisms. Although the synergy between asbestos and smoke is well established, no animal model describing lung tumorigenesis associated with asbestos and cigarette smoke has been described. One goal is to establish lung tumorigenesis in mice exposed to asbestos or cigarette smoke or the two toxins combined. A second goal is to correlate the activation of pro-inflammatory transcription factors, levels of pro-inflammatory cytokines and markers of cell proliferation at sites of lesion development in mice exposed to asbestos and cigarette smoke.

2. Determine the role of Bronchiolaveolar stem cells in asbestos-induced carcinogenesis. The pattern of asbestos deposition establishes a microenvironment of chronic inflammation at the end of the terminal bronchioles at the bifurcation to the alveolar ducts, the bronchiolar-alveolar duct (BAD) junction. Asbestos deposition at the BAD junction causes epithelial injury followed by cell proliferation mediated by sustained inflammatory cytokine production and prolonged transcription factor activation. Bronchioalveolar stem cells (BASCs), a progenitor cell of lung adenocarcinoma, are located in the BAD junctions, the sites of asbestos-induced inflammatory lesions. The goal of this project is to determine if asbestos induces characteristics of transformation in Bronchioalveolar stem cells (BASCs). We are currently examining the BAD junctions in mice from unexposed and asbestos-smoke exposed mice for differences in expression of proliferation markers. We are also establishing methods to culture BASCs. We will then establish the growth response of BASC cultures from mice after exposure to inflammatory mediators. Next we will test the hypothesis that activation of BASCs by inflammatory mediators proceeds via cellular signal transduction pathways activated that have been implicated in asbestos and cigarette smoke-induced carcinogenesis.

3. Determine if adult progenitor cells isolated from adult bone marrow facilitate lung repair. Currently, there is a great deal of excitement over the ability of administered marrow stromal cells (MSCs) to reduce inflammation and participate in the repair of injured tissues. We recently showed that MSCs home to asbestos-lesions and differentiate into mesenchymal and epithelial cells. We are now testing the ability of MSCs to facilitate the repair of lung tissue after injury by a variety of agents including asbestos, radiation and endotoxin.

4. Elucidate the molecular signaling pathways and downstream effectors involved in pathological angiogenesis. Angiogenesis, the formation of new blood microvessels from existing vasculature, is a critical step in tumor formation and metastasis. It is mediated by tumor-secreted growth factors in endothelial cells. Kaposi's sarcoma (KS), the most common cancer associated with AIDS (AIDS-KS), presents as lesions on the skin, GI and lungs that are characterized by proliferation of spindle cells and intense angiogenesis. The etiological agent of KS is the human herpes virus – 8 (HHV-8 also known as KSHV). Expression of the virally encoded g-protein coupled receptor (ORF74) is sufficient to induce angiogenesis. We are trying to determine how vGPCR induces angiogenesis. If we understand how tumors recruit new blood vessels, we may be able to devise a therapeutic strategy to prevent this critical phase of tumorigenesis.