January 3, 2011

## 1. Curriculum Vitae of George Alexander Truskey

Duke University
Department of Biomedical Engineering
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Birthdate: February 14, 1957

**RESEARCH INTERESTS**
Cardiovascular tissue engineering
Effect of physical forces on vascular and skeletal muscle cells
Transport processes in the cardiovascular system
Cell adhesion to natural and synthetic surface; Cell-cell adhesion

**EDUCATION**

1979-1985 Massachusetts Institute of Technology, Cambridge, MA
Ph.D. in Chemical Engineering, September, 1985.

1975-1979 University of Pennsylvania, Philadelphia, PA
B.S.E. in Bioengineering, *magna cum laude*, May, 1979.

**PROFESSIONAL EXPERIENCE**

2003- Chair, Department of Biomedical Engineering Duke University, Durham, NC
2000- Professor, Department of Biomedical Engineering Duke University, Durham, NC
2000-2001 Interim Chair, Department of Biomedical Engineering Duke University, Durham, NC
1999-2006 Adjunct Associate Professor, Department of Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC
1994-2000 Associate Professor, Department of Biomedical Engineering Duke University, Durham, NC
1987-1994 Assistant Professor, Department of Biomedical Engineering, Duke University, Durham, NC
1985-1987 Assistant Professor, Department of Chemical Engineering, Tufts University, Medford, MA
1986-1987 Visiting Research Fellow in Experimental Pathology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA
1985-1986 Research Fellow in Experimental Pathology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA

**PROFESSIONAL SOCIETIES**

American Institute for Medical and Biological Engineering, Fellow
American Heart Association, Fellow
Biomedical Engineering Society, Fellow
American Association for the Advancement of Science
Tissue Engineering and Regenerative Medicine International Society
American Physiological Society

**HONORS AND AWARDS**

Whitaker Health Sciences Predoctoral Fellow at M.I.T.; 1982-1984

Tau Beta Pi
Sigma Xi
Parenteral Drug Association, Outstanding Scientific Paper in the Journal of Parenteral Science and Technology, 1987
Invited speaker, 1993 Gordon Conference on Biorheology of Cell Adhesion
Tau Beta Pi, North Carolina Gamma Chapter, Excellence in Teaching Award, 1998
Fellow, American Institute for Medical and Biological Engineering, 1999
Fellow, Council on Arteriosclerosis, Thrombosis and Vascular Biology, American Heart Association, 1999
Fellow, Biomedical Engineering Society, 2006
Capers and Marion McDonald Award for Excellence in Mentoring and Advising, 2007
NIH CSR College of Reviewers, 2010

**REVIEWER for the FOLLOWING JOURNALS**

American Journal of Pathology
American Journal of Physiology
Annals of Biomedical Engineering
Arteriosclerosis, Thrombosis and Vascular Biology
Atherosclerosis
ASME Journal of Biomechanical Engineering
Biomaterials
Biophysical Journal
Biorheology
Biotechnology Progress
Biotechnology and Bioengineering
Circulation
Circulation Research
IEEE Transactions in Biomedical Engineering
Journal of Biomechanics
Journal of Biomedical Materials Research
Journal of Colloid and Interface Science
J. Pharmaceutical Science
J. Theoretical Biology
Microcirculation
Microvascular Research
Nature Methods
Proceedings of the National Academy of Sciences

**Other Relevant Experience**

| | |
|---|---|
| 2010- | Chair, Bioengineering Study Section, American Heart Association |
| 2010-2011 | Past-President, Biomedical Engineering Society |
| 2008-2010 | President, Biomedical Engineering Society |
| 2007-2008 | President-elect, Biomedical Engineering Society |
| 2008-2009 | Co-Chair, Bioengineering Study Section, American Heart Association |
| 2007-2008 | Vice-President at Large, American Institute for Medical and Biological Engineering (AIMBE) |
| 2007-2009 | Chair, Musculoskeletal Tissue Engineering Study Section, NIH |
| 2007-2009 | Member, Advisory Board, Hong Kong University |
| 2006-2007 | Chair, Academic Council, AIMBE |
| 2005-2009 | Member, Musculoskeletal Tissue Engineering Study Section, NIH |
| 2005-2006 | Chair, Vascular Cell Biology Study Section, American Heart Association |
| 2002-2004 | Finance Committee Chair, Biomedical Engineering Society |
| 2004-2005 | Treasurer, Biomedical Engineering Society |
| 2003-2007 | Member, Scientific Advisory Board, Living Microsystems, Boston, MA |
| 2001-2006 | Member, Vascular Cell Biology Study Section, American Heart Association |
| 2001 | Chair, Fall Annual Meeting of the Biomedical Engineering Society |
| 1999 | Chair, Symposium on Mechanotransduction, Experimental Biology, April 17-21 |
| 1999 | Member, National Program Committee, Biomedical Engineering Society |
| 1999 | Spring 2000 Meeting Chair, Biomedical Engineering Society |

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|---|---|
| 1998-2001; | |
| 2002-2005 | Board of Directors, Biomedical Engineering Society |
| 1995-1997, 1999- | Ad Hoc Reviewer, National Institutes of Health |
| 1995 | Co-Chair, Scientific Session on Cell Adhesion at the Annual Meeting of the American Institute of Chemical Engineers |
| 1995 | Co-Chair, Scientific Session on Biological Mass Transport, Whole Artery Studies, 1995 Bioengineering Conference |
| 1995 | Co-Chair, Scientific Session on Cell and Tissue Engineering, Kinetic and Transport Issues, 1995 Bioengineering Conference |
| 1993 | Mentor, Pew-COSEN Scholars Program |
| 1993, 1997 | Reviewer for Texas Higher Education Coordinating Board |
| 1992-1996 | Mentor, North Carolina School of Science and Math, Senior Research Program |
| 1993 | North Carolina School of Science and Math, Consultant for calculus program |
| 1990-1994,1998 | Mentor, Howard Hughes Precollege Program |
| 1990 | Reviewer for North Carolina Biotechnology Center Development Grants |
| 1986- | Ad Hoc reviewer for the National Science Foundation, Biotechnology Division |
| 1986-1989 | Consultant, Millipore Corporation, Bedford, MA |

**Other Professional and Volunteer Activities**

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| 2010- | Department Advisory Board, Department of Biomedical Engineering, Columbia University, New York, NY |
| 2010 | Program Reviewer, School of Engineering and Applied Science, Washington University, St. Louis |
| 2010 | Program Reviewer, Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA |
| 2006- | Whitaker Internal Fellowship Program Review Committee, Institute for International Education |
| 2003- | Chair, Undergraduate Advisory Board, Department of Biomedical Engineering, North Carolina State University, Raleigh, NC |
| 2002- | Member, Department Advisory Board, Department of Biomedical Engineering, University of Rochester, Rochester, NY |
| 2002-2005 | External Examiner, Hong Kong University |
| 1995-2001 | Member, Board of Trustees, Duke School for Children |
| 1999-2001 | President, Board of Trustees, Duke School for Children |

**Courses Taught at Duke University 1987-2010**

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|---|---|
| Biol 93S | Biotechnology: From Science to Industry FOCUS Program in Biotechnology and Social Change (developed and taught Fall 2001, 2002 and 2003) |
| BME 100L | Modeling Cellular and Molecular Systems (developed and taught Spring 2000, 2001, 2002, Fall 2002, 2003, 2004, 2005) |
| BME 145. | Chemical Thermodynamics (Spring 1992, 1993, Fall 1996, Fall 1997) |
| BME 207. | Introduction to Transport Phenomena (Fall 1988-1995, Fall 2000, Spring 2003, spring 2005, Fall 2006-10) |
| BME 216. | Transport in Cells and Organs (Spring 1991, 1994, 1997, 2004) |
| BME 228. | Laboratory in Cellular and Biosurface Engineering (Spring 1995, 1996, 1997(with D. Katz), 1998) |
| BME 265. | Transport in Cells and Organs (Spring 1988, 1989) |
| BME 265. | Physicochemical Hydrodynamics (Spring 1990) |

BME 265. Laboratory in Cellular and Biosurface Engineering (Spring terms 1995 and 1996)
BME 265. Cell Mechanics and Mechanotransduction (Spring 2007, 2008, 2009)
BME 265. Quantitative Physiology (Spring 2010, Spring 2011)
BME 301. &
BME 302 Seminar in Cellular and Biosurface Engineering (1996-2003 with W.M. Reichert)

**Service to University and Department**
Pratt School of Engineering Strategic Planning Committee, (2005)
Engineering Administrative Council (2003-)
Pratt School of Engineering Curriculum Review Committee (2002-2003)
Faculty Scholars Committee (2000-2009)
Committee on Admissions and Financial Aid (1998-99)
Department of Biomedical Engineering, Director of Undergraduate Studies (July 1996-June 1998; July 1999-June 2000, June 2001-2003)
School of Engineering Investment Task Force (1997-98)
Academic Council (1996-1998)
Steering Committee for Accreditation Review by the Southern Association of Colleges and Schools (1996-1998)
Center for Cellular and Biosurface Engineering, Steering Committee (1993-2003)
Center for Cellular and Biosurface Engineering, Co-Director (1993-1994)
Center for Biochemical Engineering, Director of Graduate Studies, (Jan. 1992-June 1993)
Mentor, Howard Hughes Precollege Program (1990-1994, 2000, 2004)
Project CALC University Advisory Panel (1989-1995)
University Judicial Board (1988-2008) Chair (1992-2008)

**PEER-REVIEWED PUBLICATIONS**

1. Truskey, GA, Colton CK, and Davies PF. 1985. Kinetic analysis of receptor-mediated endocytosis and lysosomal degradation in cultured cells. *Ann. NY Acad. Sci.* **435**:349-51.

2. Truskey GA, and Davies PF. 1985. Effects of ammonium ion derived from bovine endothelial cells upon low density lipoprotein degradation in cultured vascular smooth muscle cells. *Cell Biol. Intl. Rep.* **9**: 323-330.

3. Davies, PF, Truskey GA, Warren HB, O'Connor S, and Eisenhaure B. 1985. Metabolic cooperation between vascular endothelial cells and smooth muscle cells in coculture: changes in low density lipoprotein metabolism. *J. Cell Biol.* **101**: 871-879.

4. Truskey GA, Gabler R, DiLeo A, and Manter T. 1987. The effect of membrane filtration upon protein conformation. *J. Parent. Sci. and Tech.* **41**: 180-193.

5. Truskey GA, Nicolakis DP, DiMasi D, Haberman A, and Swartz RW. 1990. Kinetic studies of lymphocyte metabolism in a fed-batch bioreactor. *Biotech. Bioeng.* **36**: 797-807.

6. Truskey GA, and Pirone JS. 1990. The effect of fluid shear stress upon cell adhesion to fibronectin-treated surfaces. *J. Biomed. Mat. Res.* **24**: 1333-1353.

7. Grapa E, Truskey GA, and Reichert WM. 1990. Digitized total internal reflection fluorescence video microscopy; analysis of scatter and cell-glass contacts, *Trans. Soc. Biomat.*, **13**, 160.

8. Truskey GA, and Proulx TL. 1990. Quantitation of cell spreading on glass and fibronectin-coated surfaces by digital image analysis. *Biotechnol. Prog.* **6**: 513-519.

9. Reichert WM, and Truskey GA. 1990. Total internal reflection fluorescence (TIRF) microscopy: I. Modelling cell contact region fluorescence. *J. Cell Sci*. **96**: 219-230.

10. Garrison MD, Iuliano DJ, Saavedra SS, Truskey GA, and Reichert WM. 1992. Post-adsorption changes in the emission maximum of acrylodan-labelled bovine serum albumin using TIRF. *J. Coll. Int. Sci.* **148**: 415-422.

11. DuLaney TV, Cherry RS, Coppinger JA, and Truskey GA. 1992. Altered distribution of mitochondria and actin fibers in 3T3 cells cultured on microcarriers. *Biotechnol. Prog.* **8**: 572-575.

12. Truskey GA, Burmeister JS, Grapa E, and Reichert WM. 1992. Total internal reflection fluorescence microscopy (TIRFM) II. Topographical mapping of relative cell/substrate separation distances. *J. Cell Sci.* **103**: 491-499.

13. Truskey GA, Roberts WL, Herrmann RA, and Malinauskas RA. 1992. Measurement of endothelial permeability to $^{125}$I-low density lipoproteins in en face preparations of rabbit arteries, *Circ Res* **71**:883-897.

14. Olivier LA, and Truskey GA. 1993. A numerical analysis of forces exerted by laminar flow on spreading cells in a parallel plate flow chamber assay. *Biotechnol. Bioeng.* **42** 963-974.

15. Iuliano DJ, Saavedra SS, and Truskey GA. 1993. The effect of the conformation and orientation of adsorbed fibronectin on endothelial cell spreading and the strength of adhesion. *J. Biomed. Mater. Res.* **27** 1103-1113.

16. Truskey GA, and Proulx TL. 1993. Relationship between 3T3 cell spreading and the strength of adhesion on glass and silane surfaces. *Biomaterials* **14**: 243-254.

17. Banovac F, Saavedra SS, and Truskey GA. 1994. Conformation changes to vitronectin upon adsorption to glass and silane surfaces. *J. Colloid Interface Sci.* **165**: 31-40.

18. Herrmann RA, Malinauskas RA, and Truskey GA. 1994. Characterization of sites with elevated LDL permeability at intercostal, celiac, and iliac branches of the normal rabbit aorta. *Arteriosclerosis and Thrombosis* **14**: 313-323.

19. Burmeister JS, Truskey GA, Yarbrough JL, Reichert WM. 1994. Imaging of cell/substrate contacts on polymers using total internal reflection fluorescence microscopy. *Biotechnol. Prog.* **10**: 26-31.

20. Burmeister JS, Truskey GA, and Reichert WM. 1994. Total internal reflection fluorescence microscopy (TIRFM) III. Variable angle imaging of cell/substrate contacts. *J. Microscop*y **173:** 39-51.

21. Lei M, Kleinstreuer C, Truskey, G. 1995. Numerical investigation and the prediction of atherogenic sites in branching arteries. *ASME J. Biomech. Eng.* **117** 350-357.

22. Malinauskas RA, Herrmann RA, and Truskey GA. 1995. The distribution of intimal white blood cells in the normal rabbit aorta. *Atherosclerosis* 115: 147-163.

23. Truskey GA, Barber, KM, Robey TC, Olivier LA, and Combs MS. 1995. Characterization of a sudden expansion flow chamber to study the response of endothelium to flow recirculation. *J. Biomechan. Engr*. 117: 203-210.

24. Kanai, AJ, Strauss, HC, Truskey, GA, Crews, AL, Grunfeld, S, and Malinski, T. 1995. Shear stress induces ATP independent transient nitric oxide release from vascular endothelial cells, measured directly with a porphyrinic microsensor. *Circ. Res.* **77**: 284-293.

25. Burmeister, JS, Vrany, JD, Reichert, WM, and Truskey, GA. 1996. Effect of fibronectin amount and conformation on the strength of endothelial cell adhesion to HEMA/EMA copolymers. *J. Biomed. Mater. Res.* **30**:13-22.

26. Lei M, Kleinstreuer C, Truskey GA. 1996. A focal stress gradient-dependent mass transfer mechanism for atherogenesis in branching arteries. *Med. Eng. Phys.* **18**: 326-332.

27. Xiao, Y, and Truskey, GA. 1996. The effect of receptor-ligand affinity on the strength of adhesion of endothelial cells to immobilized RGD peptides and adsorbed fibronectin. *Biophys. J.* **71**: 2869-2884.

28. Truskey GA, and Reichert WM. 1996. Endothelial cell seeding of vascular grafts: factors influencing endothelial cell adhesion. *Biomedical Engineering Society Bulletin*, 20:35-41.

29. Sharkaway AA, Klitzman B, Truskey GA, and Reichert WM. 1997. Engineering the diffusion properties of tissue which encapsulates subcutaneous implants. *J. Biomed. Mater. Res.* **37**: 401-412.

30. Bhat, V.D., Truskey, G.A., and Reichert, W.M. 1998. Avidin-biotin as a receptor-ligand system to enhance initial cell attachment and spreading. *J. Biomed. Mater. Res.* **40**: 57-65.

31. Burmeister, J.S., Olivier, L.A. Reichert, W.M., Truskey, G.A. 1998. Application of total internal reflection fluorescence microscopy to study cell adhesion to biomaterials. *Biomaterials* **19** 307-325.

32. Sharkawy, AA, Klitzman, B, Truskey, GA, and Reichert, WM. 1998. Engineering the tissue which encapsulates subcutaneous implants II: plasma-tissue exchange properties. *J. Biomed. Mater. Res.*, **40**: 586-597.

33. Sharkawy, AA, Klitzman, B, Truskey, GA, and Reichert, WM. 1998. Engineering the tissue which encapsulates subcutaneous implants III: overall transport properties. *J. Biomed. Mater. Res.*, **40**: 598-605.

34. Udani, M, Zen, Q, Cottman, M, Leonard, N, Jefferson, S, Daymont, C, Truskey, G, and Telen, M. 1998. Basal cell adhesion molecule/Lutheran protein: the receptor critical for sickle cell adhesion to laminin. *J. Clin. Invest.* **101**: 2550-2558.

35. Bhat, VB, Truskey, G.A., and Reichert, W.M. 1998. Fibronectin and avidin-biotin as a heterogeneous ligand system for enhanced endothelial cell adhesion. *J. Biomed. Mater. Res.* **41**: 377-385.

36. Malinauskas RA, Sarraf P, Barber KM, and Truskey GA. 1998. Steady and pulsatile flow visualization at the rabbit aorto-celiac junction. *Atherosclerosis* **140**: 121-134.

37. Barber, KM. Pinero, A., and Truskey. 1998. Monocyte adhesion to endothelium in a region of flow recirculation. *Am. J. Physiol.* 275: H591-599.

38. Bhat, VD, Klitzman, B, Koger K, Truskey, GA, and Reichert WM. 1998. Improving endothelial cell adhesion to vascular graft surfaces: clinical needs and strategies. *J. Biomater. Sci., Polymer Ed.* **9**: 1117-1136.

39. Zen, Q, Cottman, M, Truskey, G, Fraser, R, and Telen, M. 1999. Critical factors in basal cell adhesion molecule/Lutheran-mediated adhesion to laminin. *J. Biol. Chem.* **274**: 728-734.

40. Truskey, GA, Herrmann, RA, Kait, J, and Barber, KM. 1999. Focal increases in VCAM-1 and intimal macrophages at atherosclerosis-susceptible sites in the rabbit aorta after short-term cholesterol feeding. *Arterioscler. Thromb. Vasc. Biol.* **19**: 393-401.

41. Olivier, LA, Yen, J., Reichert, WM, and Truskey, GA. 1999. Short-term cell/substrate contact dynamics of subconfluent endothelial cells following exposure to laminar flow. *Biotechnol. Prog.* **15**. 33-42.

42. Buchanan JR, Kleinstreuer CK, Truskey GA, and Lei M. 1999. Relation between non-uniform hemodynamics and sites of altered permeability and lesion growth at the rabbit aorto-celiac junction. *Atherosclerosis* **143**: 27-40.

43. Burmeister, JS, McKinney, VZ, Reichert, WM, and Truskey GA. 1999. Role of endothelial cell-substrate contact area and fibronectin-receptor affinity on cell adhesion to HEMA/EMA copolymers. *J. Biomed. Mater. Res.* 47: 577-584.

44. Chan, BP, Bhat, VD, Yegnasubramanian, S, Reichert, WM and Truskey, GA. 1999. An equilibrium model of endothelial cell adhesion via integrin-dependent and integrin-independent ligands. *Biomaterials* 20; 2395-2403.

45. Mathur, A., Truskey, GA. and Reichert, WM. 2000. Combining atomic force and total internal reflection fluorescence microscopy (ATM-TIRFM) to study apical to basal force transmission in endothelial cells. *Biophys.* J. 78: 1725-1735.

46. Collinsworth, A.M., Torgan, C.E., Nagda, S., Rajalingam, R.J., Kraus, W.E., and Truskey, G.A. 2000. The orientation of mammalian skeletal muscle in response to a unidirectional stretch. *Cell and Tissue Research.* 302: 243-251.

47. Torgan, CE, Burge, SS, Collinsworth, AM, Truskey, GA, and Kraus, WE. 2000. Differentiation of mammalian skeletal muscle cells cultured on microcarrier beads in a rotating wall vessel *Molecular and Biological Engineering and Computing 38 (Cell. Eng.):* 583-590.

48. Mathur AB. Truskey GA. Reichert WM. 2000. Total internal reflection microscopy and atomic force microscopy (TIRFM-AFM) to study stress transduction mechanisms in endothelial cells. *Crit. Rev. Biomed. Eng.* 28:197-202

49. Rinker, KD, Prabhakar, V, and Truskey, GA. 2001. Effect of contact time and force on monocyte adhesion to vascular endothelium. *Biophys. J.* 80 1722-1732

50. Slentz, DH, Truskey, GA, and Kraus, WE. 2001. Effects of chronic exposure to simulated microgravity on skeletal muscle cell proliferation and differentiation. *In Vitro* 37: 148-156.

51. Mathur, AB, Collinsworth, AM, Kraus, WE, Reichert, WM, and Truskey, GA. 2001. Endothelial, cardiac muscle and skeletal muscle exhibit different viscous and elastic properties as determined by atomic force microscopy. *J. Biomechanics* 34:1545-1553.

52. Kleinstreuer, C., Hyun, S, Buchanan, J.R., Longest, P.W., Archie, J.P., and Truskey, G.A. 2001. Hemodynamic parameters and early intimal thickening in branching blood vessels. *Crit Rev. Biomed. Eng.* 29: 1-64.

53. Truskey, G.A., Barber, K.M., and Rinker, K.D. 2002. Factors influencing the nonuniform localization of monocytes in the arterial wall. *Biorheology* 39: 325-329.

54. Ogunrinade, O., Kameya, G.T., and Truskey, G.A. 2002. Effect of fluid shear stress on the permeability of the arterial endothelium. Ann. Biomed. Eng. 30:430-446.

55. Mathur, A.B., Truskey, G.A., and Reichert, W.M. 2003. Synergistic effect of high affinity binding and flow preconditioning on endothelial cell adhesion. J. Biomed. Mater. Res. 64: 155-163.

56. Chan, BP, Chilkoti, A, Reichert, WM, and Truskey, GA. 2003. Effect of streptavidin affinity mutants on the integrin-independent adhesion of biotinylated endothelial cells. *Biomaterials* 24: 559-570.

57. Collinsworth, A.M., Zhang, S., Kraus, W.E., and Truskey, G.A. 2002. Apparent elastic modulus and hysteresis of skeletal muscle cells throughout differentiation. Am J Physiol Cell Physiol 283: C1219-C1227.

58. Longest, P.W., Kleinstreuer, C., Truskey, G.A., and Buchanan, J.R. 2003. Relation between near-wall residence times of monocytes and early lesion growth in the rabbit aorto-celiac junction. *Ann. Biomed. Eng.* 31: 53-64

59. Mathur, AB, Chan, B.P., Truskey, GA, and Reichert, WE. 2003. High affinity augmentation of endothelial cell attachment: long term effects of avidin-biotin upon focal contacts and actin filaments in endothelial cells. J. Biomed. Mater. Res. 66A: 729-737.

60. Buchanan, J.R., Kleinstreuer, C., Hyun, S., and Truskey, G.A. 2003. Hemodynamics simulation and identification of susceptible sites of atherosclerotic lesion formation in a model abdominal aorta. *J. Biomechanics.* 36: 1185-1196.

61. Chan, B.P., Reichert, W.M., and Truskey, G.A. 2004. Effect of streptavidin-biotin on endothelial vasoregulation and leukocyte adhesion. Biomaterials 25: 3951-3961.

62. Chan, B.P., Reichert, W.M., and Truskey, G.A. 2004. Effect of stretpavidin RGD mutant on the adhesion of endothelial cells. Biotechnol. Prog. 20: 566-575.

63. Zhang, J.S., Kraus, W.E., and Truskey, G.A. 2004. Stretch-induced endogenous nitric oxide modulates mechanical properties of skeletal muscle cells. Am. J. Physiol. 287: C292-C299; 10.1152/ajpcell.00018.2004.

64. Khismatullin, D.B. and Truskey, G.A. 2004. A 3D numerical study of the effect of channel height on leukocyte deformation and adhesion in parallel-plate flow chambers. Microvasc. Res. 68: 188-202

65. Rinker, K.D., Kirkpatrick, A.P., Ting-Beall, P., Shepherd, R. D., Levin, J. D. and Truskey, G.A. 2004. Linoleic acid increases monocyte deformation and adhesion to vascular endothelium. Atherosclerosis. 117: 275-285.

66. Chan, B.P., Reichert, W.M., and Truskey, G.A. 2004. Synergistic effect of shear stress and streptavidin-biotin on the expression of endothelial vasodilator and cytoskeletal genes. Biotechnol. Bioeng. 88: 750-758.

67. Chan, B.P., Liu, W., Klitzman, B., Reichert, W.M., and Truskey, G.A. 2005. In vivo performance of dual ligand augmented endothelialized expanded polyterafluoroethylene vascular grafts. *J. Biomed. Mater. Res. Part B Appl Biomater.* 72B: 52-63.

68. Khismatullin, D.B. and Truskey, G.A. 2005. 3D numerical simulation of receptor-mediated leukocyte adhesion to surfaces: effects of cell deformability and viscoelasticity. *Physics of Fluids* 17: 020503.

69. Lavender, M.D., Pang, Z., Wallace, C.S., Niklason, L.E., and Truskey, G.A. 2005. A system for the direct co-culture of endothelium on smooth muscle cells. *Biomaterials* 26: 4642–4653.

70. Choi, M.G., Koh, H.S., Kluess, D., O'Connor, D., Mathur, A., Truskey, G., Rubin, J., Zhou, D.X.F. and Sung. K.L.P. 2005. Effects of titanium particle size on osteoblast functions *in vitro* and *in vivo. Proc. Natl. Acad. Sci. USA 102*: 4578-4583.

71. Anamelechi, C.C., Truskey, G.A. and Reichert, W.M. 2005. Thin transparent films of Mylar and Teflon-AF as model surfaces for studying endothelial cell adhesion to model vascular graft materials. *Biomaterials* 26: 6887-6896.

72. McKinney, V.Z., Rinker, K.D., and Truskey, G.A. 2006. Spatial distribution of intracellular adhesion molecule-1 expression in human umbilical vein endothelial cells exposed to sudden expansion flow. *J. Biomechanics.* 39: 806-817

73. Brown, M., Wallace, C.S., Truskey, G.A. 2006. Vascular Endothelium In Encyclopedia of Biomedical Engineering. Akay, M. (ed.) John Wiley and Sons, dx.doi.org: 10.1002/9780471740360.ebs0436.

74. Wallace, C.S., Champion, J.C. and Truskey, G.A. 2007. Adhesion and function of human endothelial cells co-cultured on smooth muscle cells. *Ann. Biomed. Eng.* 35: 375-386.

75. Rhim, C., Lowell, D.A., Reedy, M.C., Slentz, D.H., Zhang, S.J., Kraus, W.E., George A. Truskey, G.A. 2007. Morphology and ultrastructure of differentiating three-dimensional mammalian skeletal muscle in a collagen gel. Muscle and Nerve 36: 71-80.

76. Zhang, S.J., Truskey, G.A., and Kraus, W.E. 2007. Effect of Cyclic Stretch on Beta1D Integrin Expression and Activation of FAK and RhoA *Am. J. Physiol.* 292: C2057-C2069.

77. Mathur, A.B., Reichert, W.M., Truskey, G.A. 2007. Flow and high affinity binding affect the elastic modulus of the nucleus, cell body and the stress fibers of endothelial cells. *Ann. Biomed. Eng.* 35: 1120-1130.

78. Brown, M.A., Wallace, C.S., Anamelechi, C.C., Clermont, E., Reichert, W.M., and Truskey. G.A. 2007. The use of mild trypsinization conditions in the detachment of endothelial cells to promote subsequent endothelialization on synthetic surfaces. *Biomaterials* 28: 3928-3935. PMCID: PMC2025691.

79. Wallace, C.S., Strike, S.A., Truskey, G.A. 2007. Smooth muscle cell rigidity and extracellular matrix organization influence endothelial cell spreading and adhesion formation in co-culture. *Am. J. Physiol.* 293: H1978-H1986.

80. Anamelechi, C.C., Clermont, E., Truskey, G.A., Brown, M.A., Reichert, W.M. 2007. Streptavidin binding and endothelial cell adhesion to biotinylated fibronectin. *Langmuir* 23: 12583-12588.

81. Stiber, JA, Zhang, Z-S, Burch, J, Eu, JP, Zhang, S, Truskey, GA, Seth, M, Yamaguchi, N, Meissner, G, Shah, R, Worley, PF, Williams, RS, Rosenberg, PB. 2008. Mice Lacking Homer 1Exhibit a Skeletal Myopathy 1 Characterized by Abnormal TRP Channel Activity. *Mol. Cell. Biol.* 28: 2637-2647. PMCID: PMC2293116

82. Brown, MA, Wallace, CS, Angelos, MA, and Truskey, G.A. 2009. Characterization of Umbilical Cord Blood Derived Late Outgrowth Endothelial Progenitor Cells Exposed to Laminar Shear Stress. *Tissue Engineering* 15: 3575-3587. doi:10.1089/ten.TEA.2008.0444. PMC2792062.

83. Stroncek, J, Grant, B, Brown, M, Povsic, T, Truskey, GA, and Reichert, W. 2009. Comparison of endothelial cell phenotypic markers of late outgrowth EPCs isolated from coronary artery disease patients and healthy volunteers. *Tissue Engineering* 15: 3473-3486. doi:10.1089/ten.TEA.2008.0673. PMC2792057.

84. Pang, Z, Niklason, LE, and Truskey, GA. 2010. Porcine Endothelial Cells Co-Cultured with Smooth Muscle Cells Became Pro-coagulant *in Vitro*. *Tissue Engineering* 36: 1835-1844. doi:10.1089/ten.tea.2009.0448. PMID: 20055662. PMCID: PMC2949264 [Available on 2011/6/1]

85. Huang X, Zauscher S, Klitzman B, Truskey GA, Reichert WM, Kenan DJ, Grinstaff MW. 2010. Peptide Interfacial Biomaterials Improve Endothelial Cell Adhesion and Spreading on Synthetic Polyglycolic Acid Materials. *Ann Biomed Eng*. 38: 1965-1976 PMID: 20300848

86. Wallace, C.S., and Truskey, G.A. 2010. Quiescent Smooth Muscle Cells in Direct-contact Co-culture with Endothelial Cells Inhibit TNF-alpha Mediated Endothelial Cell Activation *Am. J. Physiol.* 299: H338-346; doi:10.1152/ajpheart.01029.2009 PMID: 20495148. PMCID: PMC2930383 [Available on 2011/8/1]

87. Rhim, C., Cheng, C.S. Kraus, W.E., and Truskey, G.A. 2010. Effect of MicroRNA Modulation on Bioartificial Muscle Function. *Tissue Engineering* 16: 3589-3597. PMID: 20670163. PMCID: PMC2991195 [Available on 2011/12/1]

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92. Shaked, N., Satterwhite, L.L., Telen, M.J., Truskey, G.A. and wax, A.P. 2011. Quantitative microscopy and nanoscopy of sickle red blood cells performed by wide field digital interferometry. J. Biomed. Opt. (In Press)

93. Cao., Li., and Truskey, G.A. 2011. Biomechanical Effects Of Flow And Coculture Environment On Endothelial Progenitor Cells, J. Biomechanics (Submitted)

**BOOKS**

Truskey, G.A. Yuan, F., and Katz, D. 2004. Transport Phenomena in Biological Systems. Prentice Hall 811 pp.

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**BOOK CHAPTERS**

1. Truskey GA, Colton CK, and Smith KA. 1981. Quantitative Analysis of Protein Transport in the Arterial Wall. **In** Structure and Function of the Circulation, Vol. 3, C.J. Schwartz, N.T. Werthessen, and S. Wolf, eds., Plenum Press, NY: 287-355.

2. Davies PF, and Truskey GA. 1987. Vascular cell interactions in vitro: altered smooth muscle cell LDL metabolism induced by coculture with endothelial cells. **In** Vascular Smooth Muscle in Culture, Vol. 2, J.H. Campbell and G.R. Campbell, eds., CRC Press, Boca Raton. Fl: 81-103.

3. Swartz RW, Haberman A, DiMasi D, Jacobson B, Lages A, Grise M, Nicolakis D, and Truskey GA. 1988. Activation and expansion of cells for adoptive immunotherapy. In Tissue Engineering, R.S. Skalak and C.F. Fox, editors, Alan R. Liss, Inc., NY: 299-312.

4. Kleinstreuer C, Buchanan JR, Lei M, and Truskey GA. 2001. Computational analysis of particle-hemodynamics and prediction of the onset of arterial diseases. In *Biomechanic Systems, Techniques, and Applications*, Volume II Cardiovascular Techniques CT Leondes, ed., CRC Press, Boca Raton: 1-1 to 1-69.

5. Brown, M.A. Cheng, C.S., and Truskey, G.A. 2010. Endothelial Progenitor Cells for Vascular Repair. In Stem Cell Engineering P. Kayser, ed. 293-316 (In Press)

**EDITED MEETING PROCEEDINGS**

1. Abstract Supplement, Biomedical Engineering Society 2001 Fall Annual Meeting. Hochmuth, R.M., Reichert, W.M., and Truskey, G.A, editors. *Ann. Biomed. Eng*. **29 Supplement 1**.

**INVITED LECTURES/PRESENTATIONS (Presenter's name is underlined)**

**1.** Cao, L., and Truskey, G.A. 2010. Biomechanical effect of flow on endothelial progenitor cells in coculture with smooth muscle cells. Sixth World Congress on Biomechanics, Singapore, August 1-6. Abstr . SPKA00158-00259

2. Irick, J.P., and Truskey, G.A. 2010. Effects of Fatty Acid Exchange on U937 Cortical Tension Sixth World Congress on Biomechanics, Singapore, August 1-6. Abstr SPKA00158-00573.

3. Truskey, G.A. Engineering Endothelial Progenitor Cells for Vascular Repair, Department of Biomedical Engineering, University of Texas, Austin, March 11, 2010.

4. Truskey, G.A. Repair of blood vessels with umbilical cord blood-derived endothelial progenitor cells. University of California, Davis, Department of Biomedical Engineering, February 25, 2010

5. Truskey, G.A. Effect of Mechanical Stimulation on the Differentiation of Skeletal Muscle Myoblasts, Department of Biomedical Engineering, University of California, Irvine, February 26, 2010.

6. Truskey, G.A. Effect Of Mechanical Stimulation On MicroRNA Expression In Skeletal Muscle Myoblasts, Annual Meeting of the Society for Physical Regulation in Biology and Medicine, Tucson, AZ, January 13, 2010.

7. Truskey, G.A. Repair of blood vessels with umbilical cord blood-derived endothelial progenitor cells, University of Minnesota, Department of Biomedical Engineering, November 2, 2009

8. Khismatullin, D.B., Truskey, G.A. 2008. Leukocyte rolling on P-selectin: A 3D numerical study of the effects of cell viscosity and microvillar density Biorehology: 45 Pages: 63-63

9. Truskey, G.A. 2007. Endothelial Cell Smooth Muscle Cell Interactions In Vitro and Tissue Engineered Blood Vessels, Cornell University, Department of Biomedical Engineering April 3.

10. Truskey, G.A. 2007. Endothelial Cell Smooth Muscle Cell Interactions In Vitro and Implications for Tissue Engineered Blood Vessels. Rice University, Department of Bioengineering February 1.

11. Truskey, G.A. 2007 Endothelial Cell Adhesion to Synthetic and Biological Surfaces: Application to Vascular Grafts Boston Scientific, January 19, 2007, Maple Grove, MN

12. Truskey, G.A. 2006. Engineering Endothelial Adhesion And Function For Cardiovascular Applications Department of Biomedical Engineering. Boston University

13. Truskey, G.A. 2006. The Effect of Mechanical Stimulation on Skeletal Myoblast Differentiation. McGowan Center for Regenerative Medicine McGowan Center for Regenerative Medicine, January, 2006.

14. Truskey, G.A. 2005. Effect of Mechanical Stimulation on the Differentiation of Skeletal Myoblasts. Department of Bioengineering, University of Pennsylvania, December 8.

15. Truskey, G.A. 2005. Effect of Mechanical Stimulation on Muscle Fiber Formation. Illinois Institute of Technology, Department of Biomedical Engineering. November 17.

16. Khismatullin, D.B. and G. Truskey, G.A. 2005. How Cytoplasmic And Nuclear Viscosities Affect Leukocyte Rolling: A 3-D Numerical Study. Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD September 28 -0ctober 1; Abstract #16.

17. Anamelechi, C.C. , Lee-Houghton, L. , Truskey, G.A. and W.M. Reichert. 2005.Teflon-AF As A Model Material For Studying Endothelial Cell Adhesion. Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD September 28 -0ctober 1; Abstract # 66.

18. Khismatullin, D.B. and Truskey, G.A. 2005. The Role Of Flow Divergence In Monocyte Recruitment To Atherosclerotic Lesions: A 3D Numerical Study. Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD September 28 -0ctober 1; Abstract # 365.

19. Ogunrinade, O., and Truskey, G.A. 2005. Long-Term Exposure To Shear Stress Modulates EC Tight Junctions And Macromolecular Permeability. Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD September 28 -0ctober 1; Abstract # 550.

20. Wallace, C.S., Casto, G., Niklason, L., and Truskey, G.A. 2005. Smooth Muscle Cell Responses When Exposed To Flow And Co-Cultured With Endothelial Cells. Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD September 28 -0ctober 1; Abstract # 1043.

21. Pang, Z. Chan, I., Fang, J. Niklason, L. and Truskey, G.A. 2005. Thrombogenic Property Of Endothelial Cells Co-Cultured With Smooth Muscle Cells. Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD September 28 -0ctober 1; Abstract # 1047.

22. Zhang, S.J., Kraus, W.E., and Truskey, G.A. 2005. Integrin Beta 1D Mediated Signal Transduction In Skeletal Myocytes Studied By Stable siRNA. Annual Fall Meeting of the Biomedical Engineering Society, Baltimore, MD September 28 -0ctober 1; Abstract # 1210.

23. Truskey, G.A. 2004. The Effect of Direct Co-culture on Endothelial Cell and Smooth Muscle Cell Function. University of Virginia, Department of Biomedical Engineering, Distinguished Speakers Seminar Series, September 9, 2004.

24. Truskey, G.A., Zhang, S., and Kraus, W.E. Mechanical Stimulation of 2- and 3-D Myoblast Culture First Annual NIBIB Bioengineering Grantees Meeting Bethesda, MD, October 28-29, 2004.

25. Pang, Z., Truskey, G.A., Wallace, C.S., and Niklason, L.E. Endothelial Cell-Smooth Muscle Cell Coculture. Grantees Meeting Bethesda, MD, Research in Innovative Tissue Engineering, Grantees Meeting Bethesda, MD, September 9 and 10, 2004.

26. Truskey, G.A. 2004. Molecular Changes Underlying Skeletal Muscle Mechanical Properties During Differentiation. Department of Biomedical Engineering, Technical University of Eindhoven, Eindhoven, NL June 10, 2004.

27. Truskey, G.A. Invited speaker, Biomedical Engineering. Workshop on the *Research Profile* of Technische Universiteit Eindhoven, Eindhoven, NL and Corsedonk, BE June 10-12, 2004

28. Truskey, G.A. Cardiovascular Transport Processes: Biological Influences upon Interactions Among Transport, Reaction and Mechanics; NSF Transport Processes in BioMedical Systems Workshop, May 6 and 7, 2004, Bethesda, MD

29. Truskey, G.A. Necessary Core ChE Components and Important Applications of Biochemical Systems. The Integration of Chemical and Biological Engineering, NSF Grant 0343135 Workshop, Tufts University, Medford, MA April 16 and 17, 2004.

30. Truskey, G.A. 2004. Rational Design of Endothelium to Synthetic and tissue-Engineered Grafts. Department of Chemical Engineering, Colorado State University, March 11, 2004, Ft. Collins, CO.

31. Truskey, G.A. Invited speaker, Educational Workshop, Technical University of Eindhoven, Eindhoven and Maastricht, NL February 18, 2004

32. Truskey, G.A. 2003. Rational Design of Endothelium for Seeding of Synthetic and Tissue-Engineered Vascular Grafts, Department of Biomedical Engineering, University of Texas at Austin, December 4, 2003.

33. Truskey, G.A. 2003. Rational Design of Endothelium for Seeding of Synthetic and Tissue-Engineered Vascular Grafts, Walter Coulter Lectureship, Department of Biomedical Engineering, University of North Carolina at Chapel Hill, November 14, 2003.

34. Truskey, G.A. 2003. Application of total internal reflection fluorescence microscopy (TIRFM) and atomic force microscopy (AFM) to characterize endothelial cell adhesion to biomaterials. Third ELMI Symposium, Barcelona, Spain, June 13, 2003.

35. Truskey, G.A. 2003. Effect of flow on monocyte-endothelial cell interactions. Department of Biomedical Engineering, University of California at Davis, January 27, 2003.

36. Truskey, G.A. 2002. Effect of Flow on Monocyte-Endothelial Cell Interactions Department of Chemical Engineering, City University of New York. March 11, 2002.

37. Truskey, G.A. 2001. Force-Mediated Focal Contact Movement in Endothelium. Department of Chemical Engineering, Johns Hopkins University, Baltimore, MD, December 6, 2001.

38. Truskey, G.A. 2001. Force-Mediated Focal Contact Dynamics. Department of Medical Physiology, Texas A&M University, College Station, TX, February 22, 2001.

39. Truskey, GA, Li, H, Kait, J, and Irick, J. 2001. Relationship Between LDL Residence Time and Macrophage Accumulation in the Rabbit Aorta. BED-Vol. 50, 2001 Bioengineering Conference. 679-680.

40. Truskey, GA. 2001. Factors influencing the nonuniform localization of monocytes in the arterial wall. British Heart Fund Symposium on Breaking Symmetry in Hemodynamcis, Imperial College, London, April 23-24, 2001.

41. Truskey, GA. 2000. Relationship between local mechanical properties and focal contact movement. Experimental Biology 2000, San Diego, CA. April 17.

42. Truskey, GA. 2000. Vascular endothelium tissue engineering. North Carolina tissue engineering research interest group meeting. North Carolina Biotechnology Center. April 7.

43. Truskey, GA. 1999. Effect of Flow on Monocyte-Endothelial Cell Interactions, Virginia Polytechnic Institute, Seminar Series in Biomedical Engineering, September 20, 1999.

44. Truskey, GA. 1999. Characterization of Cell Adhesion by Total Internal Reflection Fluorescence Microscopy, Society for Biomaterials, Academic Workshop, April 28, 1999.

45. Truskey, GA. 1998. Monocyte-Endothelial Cell Interaction in Early Atherosclerosis. Institute of Medicine and Engineering, University of Pennsylvania, December 12, 1998.

46. Truskey, GA. 1997. Endothelial cell adhesion to biomaterials. Featured speaker at the Workshop on Biomaterials Science and Tissue Engineering sponsored by the University of Minnesota Biomedical Engineering Institute and the Center for Interfacial Engineering. September 23, 1997.

47. Barber, KM and Truskey GA. 1997. A kinetic analysis of U937 cell arrest to activated endothelium under shear flow. Abstr. #196. *Ann Biomed. Eng.* 25: S1: S-33.

48. Herrmann, RA, Kait, J., and Truskey, GA. 1997. Spatial distribution of VCAM-1 positive endothelium and intimal macrophages during early hypercholesterolemia. Proc. Summer Bioeng. Conf. ASME BED Div. 35: 23-24.

49. Barber, KM, Pinero A, and Truskey GA. 1997. U937 cell adhesion to human umbilical vein endothelial cells in recirculating flow. First International Interdisciplinary Conference on Cardiovascular Medicine, Surgery, Science and Mechanics. June 6-9, Washington, DC.

50. Truskey, GA, Diggs, J., Bhat, V, Reichert., WM, and Massoud, HZ. 1996.Endothelial cell shape and adhesion on micropatterned surfaces. Ann. Biomed. Eng. 24, Suppl. 1, Abstr. # 286.

51. Arken, K., Barber, K.M., Greenberg, C.S. and Truskey, G.A. Adhesion of normal and sickle red blood cells to adsorbed fibrinogen. Ann. Biomed. Eng. 24, Suppl. 1, Abstr. # 199.

52. Olivier, L.A., Xiao, Y., Yen, J., Reichert, W.M., and Truskey, G.A. 1995. Changes in endothelial cell contact area and tyrosine phosphorylation following exposure to flow. Annual Fall Meeting of the Biomedical Engineering Society, Abstr #240.

53. Truskey, G.A., Herrmann, R.A., and Malinauskas, R.A. 1995. Low density lipoprotein transport in the arterial wall of normal and hypercholesterolemic rabbits. Proc. of the 1995 Bioengineering Conference.

54. Truskey, G.A., Barber, K.M., and Xiao, Y. 1994. The effect of flow recirculation upon endothelial cells. *Ann. Biomed. Eng.* 22, S1 #101; 25.

55. Malinauskas, R.A., Herrmann, R.A., and Truskey, G.A. 1994. Association of sites of elevated LDL permeability with intimal white blood cells in the rabbit aorta. Second World Congress of Biomechanics. Amsterdam, July 10-15. Abst. II-24b.

56. Truskey, G.A. 1994. Transport phenomena and atherosclerosis. Department of Chemical Engineering, The Pennsylvania State University, State College, PA; February 8, 1994.

57. Truskey, G.A. 1993. Cell spreading and the strength of adhesion in flow. Gordon Research Conference on the Biorheology of Cell Adhesion. New England College, Henniker, NH, June 14-18.

58. Burmeister, J.S., Reichert, W.M., and Truskey, G.A. 1992. Measurement of cell contact area on fibronectin-coated surfaces by variable angle total internal reflection fluorescence microscopy (TIRFM). Symposium on Biopolymers at Interfaces, 204th Annual ACS National Meeting, Washington, DC, August 23-28, 1992.

59. Iuliano, D.J., Proulx, T. L. Saavedra, S. S., and Truskey, G.A. 1991. Role of Adhesion Proteins and Cytoskeleton in the Short-Term Response of Fibroblasts and Endothelial Cells to Steady Laminar Flow. *Proc. 5th ASME Bioprocess Engineering Symp. BED* **21**: 23-25.

60. Truskey, G.A., Herrmann, R.A., Roberts, W.L., and Malinauskas, R.A. 1991. Regional variations in endothelial permeability to $^{125}$I-low density lipoproteins in the rabbit. *Euromech Colloquium 286*: Three dimensional blood flow in bifurcations; Kerkrade, Netherlands, Oct. 20-23.

61. Truskey, G.A. 1990. The effect of hydrodynamic forces on cellular metabolism and adhesion, School of Chemical Engineering and Biotechnology Program, Cornell University, March 27.

**ABSTRACTS/PRESENTATIONS**

1. Cao, L., and Truskey, G.A. 2010. Biomechanical Effect of Flow and Coculture Environment on Endothelial Progenitor Cells. BMES Annual Meeting, October 6-9, Austin, TX, Abstr PS-7A-9-108.
2. Cheng, C.S., Harbuck, R., El-Abd, Y., Kraus, W.E., and Truskey, G.A. 2010. Comparison of C2C12 Myoblast Line and Primary human Skeletal Myoblasts for Muscle Tissue Engineering. BMES Annual Meeting, October 6-9, Austin, TX, Abstr OP-7-I-17D
3. Brown, M.A., Zhang, L., Brian, L., Freedman, N.J., and Truskey, G.A. 2009. " Cord blood-derived endothelial progenitor cells prevent thrombus formation in immunodeficient mice." Annual Meeting of the Biomedical Engineering Society, Pittsburgh, PA, October 7-10, 2009. Abstr. OP 9-3-8E.
4. Stroncek, J., Truskey, G., and Reichert, W.M. 2009. "Adenovirus-mediated overexpression of thrombomodulin in late outgrowth endothelial progenitor cells isolated from patients with coronary artery disease." Annual Meeting of the Biomedical Engineering Society, Pittsburgh, PA, October 7-10, 2009. Abstr. PS 9A-226.
5. Rhim, C. Kraus, W.E., and Truskey, G.A., 2009. "Transient microRNA delivery enhances bioartificial skeletal muscle function in vitro." Annual Meeting of the Biomedical Engineering Society, Pittsburgh, PA, October 7-10, 2009. Abstr. OP 8-2-12B
6. Brown, M.A., Zhang, L., Brian, L., Freedman, N.J., and Truskey, G.A. 2009. " Cord blood-derived endothelial progenitor cells prevent thrombus formation in immunodeficient mice." Annual Meeting of the Biomedical Engineering Society, Pittsburgh, PA, October 7-10, 2009. Abstr. OP 9-3-8E.
7. Angelos, M.G., Brown, M.A., and Truskey, G.A. 2009. "Dynamic adhesion mechanisms of endothelial progenitor cells derived from umbilical cord blood to fibronectin under laminar shear stress." Annual Meeting of the Biomedical Engineering Society, Pittsburgh, PA, October 7-10, 2009. Abstr. OP 9-1-12B.
8. Khismatullin, D., Chen, C., and Truskey, G.A. 2009. Quantitative models of monocyte-endothelial cell interactions in atherosclerosis Society of Rheology 81st Annual Meeting in Madison, Wisconsin on October 18-22, 2009
9. Brown, M.A., Angelos, M., Stroncek, J., Reichert, W.M., and Truskey, G.A. 2008. In Vitro Evaluation of Endothelial Progenitor Cells Dynamic Adherence to Smooth Muscle Cells. Annual Fall Meeting of the Biomedical Engineering Society, St. Louis, MO. Abstract 247
10. Truskey, G.A., Irick, J.P. 2008. Effect of fatty acid exchange on leukocyte mechanical properties and adhesion to endothelium. Biorehology. 45: 32
11. Angelos, M., Brown, M., and Truskey, G.A. 2008. Cord blood endothelial progenitor cell adhesion to fibronectin under laminar shear stress. Annual Fall Meeting of the Biomedical Engineering Society, St. Louis, MO. Abstract P.265.
12. Brown, M.A., Angelos, M.A. and Truskey, G.A. 2008. Cord blood derived endothelial progenitor cell adherence and proliferation under laminar flow. TERMIS-NA Conference, San Diego
13. Rhim,C., Cheng, C.S., Kraus, W.E. Truskey, G.A. 2007. Biomechanical Effects on MicroRNA Expression in Skeletal Muscle Differentiation. Annual Fall Meeting of the Biomedical Engineering Society, Los Angeles, CA September 26-29, 2007 Abstract #P4.70
14. Stroncek, J., Olbrich, K.C. Brown, M., Truskey, G.A., Klitzman, B., Reichert, W.M. 2007. Effect of trypsin concentration on endothelialization of small diameter vascular grafts Annual Fall Meeting of the Biomedical Engineering Society, Los Angeles, CA September 26-29, 2007 Abstract #P2.185

15. Wallace, C.S., Sun, D., Truskey, G.A. 2007 Endothelial cell responses to TNF-alpha; stimulation when attached to smooth muscle cells Annual Fall Meeting of the Biomedical Engineering Society, Los Angeles, CA September 26-29, 2007 Abstract #P2.200.
16. Wallace, C., Champion, J., and Truskey, G. 2006. Endothelial cell adhesion to smooth muscle cells. Annual Fall Meeting of the Biomedical Engineering Society Chicago, IL, October 12-14. Abstract #431.
17. Irick, J., and Truskey, G. 2006. Linoleic acid increases tether formation between monocytes and endothelial cells. Annual Fall Meeting of the Biomedical Engineering Society Chicago, IL, October 12-14. Abstract #1186.
18. Khismatullin, D.B., Irick, J. and Truskey, G. 2006. Modeling leukocyte dynamics in a micropipette adhesion assay. Annual Fall Meeting of the Biomedical Engineering Society Chicago, IL, October 12-14. Abstract #1413.
19. Brown, M.A. Reichert, W.M. and Truskey, G.A. 2006. Improved Endothelial Cell Adhesion to Synthetic Surfaces. Annual Fall Meeting of the Biomedical Engineering Society Chicago, IL, October 12-14. Abstract #1403.
20. Rhim, C., Lowell, D.A., Reedy, M.C., Zhang, S.J., Kraus, W.E. and Truskey, G.A. 2006. Morphology and ultrastructure of tissue engineered skeletal muscle. Annual Fall Meeting of the Biomedical Engineering Society Chicago, IL, October 12-14. Abstract #781.
21. Zhang SJY, Kraus W, Truskey G. 2006. Integrin beta 1D regulates skeletal myogenesis and mechanotransduction. FASEB J. 20 (4): A391.
22. Ogunrinade, O., Wallace, C.S., and Truskey, G.A. 2006. Albumin transport across human endothelium co-cultured with vascular smooth muscle cells. J. Biomechanics, 39: S1, Abstr #6177, p. S377.
23. Ogunrinade, O., Wong, K., Truskey, G.A. 2004. Human Serum Modulates Paracellular Protein Pathway In HUVEC and HUAEC. Abstract 736, Fall Annual meeting of the Biomedical Engineering Society, Philadelphia, PA, October 13-16, 2004
24. Irick, J., Li, H., and Truskey, G.A. 2004. Effects of Beta-Carotene on the Early Development of Atherosclerosis. Abstract 205, Fall Annual meeting of the Biomedical Engineering Society, Philadelphia, PA, October 13-16, 2004
25. McKinney, V.Z., Rinker, K.D. and Truskey, G.A. 2004. Normal and Shear Stresses Influence ICAM-1 Spatial Expression in HUVEC Exposed to Disturbed Flow. Abstract 410, Fall Annual meeting of the Biomedical Engineering Society, Philadelphia, PA, October 13-16, 2004
26. Khismatullin, D.B. and Truskey, G.A. 2004. 3D numerical simulation of leukocyte adhesion in flow chambers: Effect of channel height. Abstract 650, Fall Annual meeting of the Biomedical Engineering Society, Philadelphia, PA, October 13-16, 2004
27. Khismatullin, D.B. and Truskey, G.A. 2004. 3D numerical simulation of leukocyte adhesion in flow chambers: Effect of wall shear stress. Abstract 654, Fall Annual meeting of the Biomedical Engineering Society, Philadelphia, PA, October 13-16, 2004
28. Pang, Z., Wallace, S. Niklason, L., and Truskey, G. 2004 Surface Tissue Factor Activity on Porcine Aortic Endothelial Cells and Smooth Muscle Cells Cultured *in vitro.* Abstract 205, Fall Annual meeting of the Biomedical Engineering Society, Philadelphia, PA, October 13-16, 2004
29. Wallace, S., Feaver, R., Pang, Z., Niklason, L.E., and Truskey, G.A. 2004. Mechanically stimulated nitric oxide production of a direct contact EC-SMC coculture Abstract 730, Fall Annual meeting of the Biomedical Engineering Society, Philadelphia, PA, October 13-16, 2004
30. Truskey, G.A., Niklason, L.e., Setton, L.A., Beijiens, F. 2004. Graduate Student Internship Opportunity: The Duke-Technical University of Eindhoven Experience Abstract 758, Fall Annual meeting of the Biomedical Engineering Society, Philadelphia, PA, October 13-16, 2004

31. Zhang, S, Kraus, W.E. and Truskey, G.A. 2004. Mechanical stimulation induced hyperplastic and hypertrophic responses in skeletal myocytes Abstract 770, Fall Annual meeting of the Biomedical Engineering Society, Philadelphia, PA, October 13-16, 2004
32. Zhang, J, Kraus, WE, and Truskey, GA. 2003. Stretch-induced endogenous nitric oxide modulates mechanical properties of skeletal muscle cells Abstract 2.P1.28. 2003 Annual Meeting of the Biomedical Engineering Society, Nashville, TN
33. Lavender, MD, Wallace, .S, Robertson, ZM, Niklason, LE, and Truskey, GA. 2003. A system to culture endothelial cells on smooth muscle cells. Abstract 6.9.6. 2003 Annual Meeting of the Biomedical Engineering Society, Nashville, TN
34. Levin, JD, and Truskey, GA. 2002. The effect of ligand density on tether formation between endothelium and monocytes. IV World Congress of Biomechanics, Calgary August 4-9.
35. Collinsworth, A, Kraus, WE, and Truskey, GA. 2001. Mechanical properties of myocytes throughout differentiation and in response to stretch using AFM. Annual Meeting of the Biomedical Engineering Society, Oct 4-7, Durham, NC. *Ann. Biomed. Eng.* 29: P3.40, S-40.
36. Chan, BP, Reichert, W.M. and Truskey, GA. 2002. The effect of streptavidin-biotin exogenous ligands on the endothelium-derived nitric oxide synthase activity. Second Joint EMBS-BMES Conference 23-26 October, Houston, TX
37. Zhang, J, Kraus, W, Truskey, G.A. 2002. The effects of the actin cytoskeleton on the transverse mechanical properties of skeletal muscle. Second Joint EMBS-BMES Conference 23-26 October, Houston, TX
38. Cao, B., Hyun, S., Longest, P.W., Kleinstreuer, C., and Truskey, G.A. 2001. The aorto-celiac junction as an atherosclerotic model: identification of susceptible sites. Annual Meeting of the Biomedical Engineering Society, Oct 4-7, Durham, NC. *Ann. Biomed. Eng.* 29: P5.31: S-77.
39. Irick, JP, Li, H, and Truskey, GA. 2001. Relationship between macrophage and LDL accumulation in the aorta during early atherosclerosis. Annual Meeting of the Biomedical Engineering Society, Oct 4-7, Durham, NC. *Ann. Biomed. Eng.* 29: P5.43: S-79.
40. Chan, BP, Truskey, GA, and Reichert, WM. 2001.Engineering an RGD sequence into streptavidin enhances endothelial cell adhesion. Annual Meeting of the Biomedical Engineering Society, Oct 4-7, Durham, NC. *Ann. Biomed. Eng.* 29: P6.23: s-90.
41. Levin, JD, Kleinstreuer, NC, and Truskey, GA. 2001. Effect of contact force on adhesion between monocytes and endothelium. Annual Meeting of the Biomedical Engineering Society, Oct 4-7, Durham, NC. *Ann. Biomed. Eng.* 29: 5.13.2: S-70.
42. Mathur, AB, Reichert, WM, and Truskey, GA. 2001. Effect of dual ligand binding and flow preconditioning on the elastic modulus of endothelial cells. Annual Meeting of the Biomedical Engineering Society, Oct 4-7, Durham, NC. *Ann. Biomed. Eng.* 29: 3.14.5: S-32.
43. Buchanan, JR, Kleinstreuer, C. and Truskey, GA. 2001. The Lagrangian characterization of resting flow in the rabbit abdominal aorta BED-Vol. 50, 2001 Bioengineering Conference, 127-128
44. Buchanan, JR, Kleinstreuer, C, and Truskey, GA. 2001. Influence of non-planar curvature at the rabbit aorto-celiac junction, BED-Vol. 50, 2001 Bioengineering Conference, 471-472.
45. Mathur, AB, Kwon, SY, Truskey, G A; Sung, K L P. 2001. Atomic force and total internal reflection fluorescence microscope methods reveal the mechanism of osteoblast adhesiveness changes under titanium particle loading. Trans. Orthopaedic Research Society, p. 223.
46. Mathur; AB, Reichert, WM, Truskey, GA. 2000. Atomic force and total internal reflection fluorescence microscopy for the study of force transmission in endothelial cells. Annual Meeting of the Biomedical Engineering Society. October 12-14, Seattle, WA
47. Chan, BP, Reichert, WM, Truskey, GA. 2000. Reducing Endothelial Cell Detachment via Cohesive Failure by Stiffening Cell Membrane with Cholesterol. Annual Meeting of the Biomedical Engineering Society. October 12-14, Seattle, WA

48. Rinker, KD, Ping-Beall, H, Hochmuth, RM, and Truskey, GA. 2000. Mechanism of Shear Force-Dependent Monocyte Adhesion to Vascular Endothelium. Annual Meeting of the Biomedical Engineering Society. October 12-14, Seattle, WA
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50. Rinker, KD, Prabhakar, V, Osborn, EA, and Truskey, GA. 1999. Effect Of fluid viscosity and erythrocytes on monocyte adhesion. Annual Meeting of the Biomedical Engineering Society. October 12-16.1999.
51. Mathur, AB, Truskey, GA, Reichert, WM. 1999. Integration of total internal reflection and atomic force microscopy (TIRFM-AFM) to study stress transduction mechanisms in endothelial cells. Annual Meeting of the Biomedical Engineering Society. October 12-16.1999.
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71. Truskey, GA, Barber, KM, Combs, MP, Olivier, LA, and Xiao, Y, 1994. Response of endothelial cells within a region of flow recirculation. Second World Congress of Biomechanics. Amsterdam, July 10-15. Abst. II-203a.
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81. Burmeister, JS, Truskey, GA, and Reichert, WM. 1992. Total internal reflection fluorescence microscopy (TIRFM): topographical mapping of relative cell/substrate separation distances.Asbtr.G2.5 Third Annual Meeting of the Biomedical Engineering Society. Abstr. E7.3 Salt Lake City, UT, Oct 16-18.
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83. Truskey, GA, Herrmann, RA, Roberts, WL, and Malinauskas, RA. 1991. En face measurement of endothelial permeability to $^{125}$I-low density lipoproteins. Annual meeting of the AIChE, Nov. 17-22, Los Angeles, CA, Abstr. 188b.
84. Herrmann, RA, Malinauskas, RA, and Truskey, GA. 1991. Regional variations in endothelial permeability to $^{125}$I-low density lipoproteins in rabbit arteries. *Ann. Biomed. Eng.* 19, 606: Abstr. 91-158.
85. Olivier, LA, and Truskey, GA. 1991. Numerical simulation of forces on a spreading cell exposed to flow. *Ann. Biomed. Eng.* 19, 607: Abstr. 91-160.
86. Burmeister, J, Truskey, GA, and Reichert, WM. 1991. Variable angle total internal reflection fluorescence (TIRF) microscopy of fluorescently labelled lipid films and cells at the glass-liquid interface. *Ann. Biomed. Eng.* 19, 614: Abstr. 91-180.
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88. Truskey, GA, Iuliano, DJ, and Saavedra, SS. 1991. The Effect of the Conformation of Adsorbed Fibronectin (FN) on Endothelial Cell Adhesion. *FASEB J.* **5**:A372.
89. Truskey, GA, Proulx, T.L., Reichert, WM, and Grapa, E. 1990. Mechanisms of Cell Adhesion to Fibronectin-Coated Surfaces. 82nd Meeting of the American Institute of Chemical Engineers (AIChE), Chicago, IL
90. Truskey, GA, Reichert, WM, and Grapa, E. 1990. A method to measure cell-separation distances using total internal reflection fluorescence, 200th ACS National Meeting, Aug. 26-31, Washington, D.C.
91. Truskey, GA, Proulx, TL, and Seay, PV. 1990. Relationship between cell spreading and adhesion onto fibronectin-coated surfaces, 64th ACS Colloid and Surface Science Symposium, Lehigh University, June18-20, 1990.
92. Truskey, GA, Reichert, WM, and Winakur, EF. 1989. Analysis of cell-surface contacts by total internal reflection video microscopy. 81st Annual Meeting of the AIChE, San Francisco, CA
93. Truskey, GA, and Pirone, JS. 1989. Effect of fluid shear stress on cell adhesion to fibronectin coated surfaces. 81st Annual Meeting of the AIChE, San Francisco, CA
94. Truskey, GA, Reichert, WM, and Pirone, JS. 1989. Effect of fluid shear forces on cell adhesion. 63rd Colloid and Surface Scinece Symposium, June 18-21, 1989, Seattle, WA.
95. Truskey, GA, Nicolakis, DP, Swartz, RW, and Haberman, A. 1988. Metabolic studies of lymphocytes in fed-batch bioreactors. 80th Annual Meeting of the AIChE, Washington, DC
96. Truskey, GA, Nicolakis, DP, Haberman, A. and Swartz, RW. 1988. Kinetics of hybridoma growth in fed-batch bioreactors.196th ACS National Meeting, Los Angeles, CA

97. Truskey, GA, Colton, CK, Navarro, MC, and Smith, KA. 1987. Receptor-mediated and receptor-independent LDL transport and metabolism in the rabbit aorta in vivo. 20th Hugh Lofland Conference on Arterial Wall Metabolism. Winston-Salem, NC
98. Truskey, GA, Colton, CK, and Smith, KA. 1986.A mathematical model of low density lipoprotein transport and metabolism in the arterial wall in vivo. 78th Annual Meeting of the American Institute of Chemical Engineers, Miami, FL
99. Davies, PF, Warren, HB, Diehl, TS, Ganz, P, Truskey, GA, and Morrel, EM. 1986. Vascular endothelial and smooth muscle cell communication in vitro. 4th Intl. Symposium on the Biology of the Vascular Endothelial Cell, Noordwijkerhout, Netherlands
100. Truskey, GA, Navarro, MC, Colton, CK, Smith, KA, and Davies, PF. 1984. Low density lipoprotein metabolism by arterial smooth muscle cells in vitro and in vivo. 76th Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA
101. Truskey, GA., Davies, PF, and Colton, CK. 1984. Co-culture of vascular endothelium and smooth muscle cells: effect on low density lipoprotein metabolism by smooth muscle cells. 3rd Intl.Symposium on the Biology of the Vascular Endothelial Cell. Cambridge, MA
102. Truskey, GA, Deutsch, CJ, and Forster, RE. 1979. Determination of energy of activation for acetic acid and acetate ion transport in the human erythrocyte. Abstr. #4750. Fed Proc. 38:1127.

**Dissertations and Theses Supervised**

**A. Current Graduate Students**

1. Cindy Cheng

2. Vrad Levering

3. Alexandra Jantzen

4. Erica Brown

5. Tracy Cheung

6. Aswati Aravind, MS student

**B. Current Post-doctoral Fellows**

Li Cao — Biomechanics of Endothelial Cells

**C. PhD Dissertations Supervised**

1. Richard A. Malinauskas — The spatial association of hemodynamics with altered endothelial cells and increased arterial permeability
   Dissertation Defense: December, 1993

2. Lauri A. Olivier — Changes in endothelial cell membrane/substratum separation distances in response to flow
   Dissertation Defense: April, 1996

3. Robert A. Herrmann — Low density lipoprotein transport in the arterial wall of hypercholesterolemic rabbits
   Dissertation Defense: September, 1996

4. Kevin M. Barber — Monocyte adhesion to oxidized LDL-activated endothelium in recirculating flow
Dissertation Defense: February, 1997

5. Yao Xiao — Focal contact organization and adhesion of endothelial cells in a region of flow recirculation
Dissertation Defense: April, 1997

6. Amy Collinsworth — Effect of differentiation and mechanical stimulation on the morphology, protein expression and mechanical properties of mammalian myocytes.
Dissertation Defense: May, 2001

7. Bernard Chan — Mechanism of endothelial cell detachment under flow
Dissertation Defense: November, 2003

8. Sarah Zhang — Role of Integrin Beta 1D in skeletal muscle mechanotransduction and differentiation
Dissertation Defense: April, 2007

9. Charles S. Wallace — Effect of flow on endothelial cell function in co-culture
Dissertation Defense: April, 2008

10. Joel P. Irick — Effect of Linoleic Acid on Monocyte-Endothelial Cell Adhesion
Dissertation Defense: December, 2008

11. Melissa A. Brown — Umbilical Cord Blood Derived Endothelial Progenitor Cells: Isolation, Characterization, and Adhesion Potential In Vitro and In Vivo
Dissertation Defense: July, 2009

12. Caroline Rhim — Stretch-Induced Effects on MicroRNA Expression and Exogenous MicroRNA Delivery in Differentiating Skeletal Myoblasts
Dissertation Defense: June, 2009

**D. Doctoral Students Co-Advised with W.M. Reichert**

1. Jeffrey S. Burmeister — A TIRFM investigation of endothelial cell adhesion to hydrophilic and hydrophobic polymers
April, 1995

2. Vinayak D. Bhat — A heterogeneous receptor-ligand system to enhance endothelialization of small diameter synthetic vascular grafts
May, 1998

3. Anshu Mathur — Improvement of vascular graft cell adhesion by studying the mechanisms of actin-focal contact dynamics with the AFM-TIRF system
Dissertation Defense: September, 2001

4. Adam Sharkaway — Engineering the transport properties of tissue encapsulating long term subcutaneous implants
Dissertation Defense: May, 1997

**E. MS Theses Supervised**

| | |
|---|---|
| 1. Christopher Logothetis | Mathematical modeling of hollow fiber reactors for enzymatic catalysis and cultivation of mammalian cells<br>June, 1987 (Tufts University) |
| 2. Dimitri P. Nicolakis | Metabolic and kinetic studies of lymphocytes in vitro<br>February, 1988 (Tufts University) |
| 3. Wendy L. Roberts | Application of an en face technique to measure regional variations in endothelial permeability to low density lipoprotein in the rabbit aorta<br>December, 1990 |
| 4. Lauri A. Olivier | A numerical simulation of flow over a spreading cell<br>July, 1992 |
| 5. Robert A. Herrmann | Quantitation and mapping of focal increases of low density lipoprotein permeability at branch sites along the rabbit aorta<br>August, 1992 |
| 6. Ashish Malik | Purification of a lipoprotein complex by continuous flow centrifugation<br>April, 1994 |
| 7. Geri Kamaya | Non-thesis M.S., December, 1996. |
| 8. Jason Kait | Development of a method to measure the accumulation of fluorescently labeled monocytes in the aorta of hypercholesterolemic rabbits<br>May, 2001 |
| 9. Valerie McKinney | Dependence of the spatial distribution of intracellular adhesion molecule-1 expression in human umbilical vein endothelial cells on shear and normal stresses induced by sudden expansion flow<br>August 2002 |
| 10. Mark Lavender | Developing a system of endothelial cell-smooth muscle cell co-culture<br>July, 2003 |
| 11. Sarah Zhang | Effect of mechanical stimulation on skeletal muscle function<br>May 2003 |
| 12. Joel Irick | Effect of beta carotene on LDL and monocyte dynamics in the rabbit arterial wall<br>December, 2004 |
| 13. Olakunle Ogunrinade | Factors affecting endothelial permeability in vitro<br>September, 2005. |
| 14. Darshin Patel | Non-thesis masters 2010 |
| 15. Brian Selgrade | Fluid Dynamics of a Centrifugal Left Ventricular Assist Device |

July 2010

**F. Postdoctoral Fellows/ Research Faculty**

| | |
|---|---|
| 1. Dr. Scott Saavedra | 1989-1991<br>Currently Professor of Chemistry, University of Arizona |
| 2. Dr. Jin-Yu Shao | 1998<br>Currently Associate Professor of Biomedical Engineering, Washington University |
| 3. Dr. Kristina Rinker | 1998-2000<br>Currently Associate Professor of Chemical Engineering, University of Alberta |
| 4. Dr. Dora Levin | Factors influencing multiple bond formation during leukocyte-endothelium contact under flow<br>2000-2003<br>Currently: Assistant Professor of Physics, Bridgewater State College, Bridgewater, MA |
| 5. Dr. Zhengyu Pang | Endothelial-Cell smooth muscle cell co-culture<br>Currently: Research Scientist, GE Global Research Niskayuna, NY |
| 6. Dr. Damir Khismatullin | Modeling leukocyte adhesion to endothelial cells under flow<br>2003-2006<br>Currently: Associate Professor, Department of Biomedical Engineering, Tulane University |
| 7. Dr. Li Cao | Endothelial cell biomechanics<br>2008-present |

**RESEARCH SUPPORT**

**Truskey, George A.**

ACTIVE (Direct Costs Only)
Coulter Foundation Translational Research Partnership (P.I. Truskey) 1/01/06-3/31/11
$4,580,000 in total costs

RO1 HL88825-02 G. Truskey (P.I.) 3/1/07-2/28/12
$700,000 in total direct costs
Endothelial Cell Adhesion & Function on Smooth Muscle

1 R21 AR55195-01A2 (G.A. Truskey, P.I.) 4/1/2009 – 2/28/2011
$267,000 in total direct costs
MicroRNA Mediation of Stretch-Induced Myoblast Function for Engineered Tissues

1R01AR055226-01 N. Bursac (P.I.) 8/1/08-7/31/13
NIH/NIAMS $220,000 in direct costs for current year
Engineering a Functional Skeletal Muscle

1T32 GM08555-01 (P.I. Reichert; Investigator) 7/1/99 - 6/30/12
NIH/NIGMS $1,300,000
Research Training in Cellular and Biosurface Engineering

2R01 HL044972-18A2 (P.I. Reichert; Co-Investigator) 5/1/2009–4/30/2013
NIH/NHLBI $150,000 in direct costs for current year
EPC Adhesion to Teflon-AF and ePTFE Vascular Grafts

1RC1 HL099863-01 (Lawson, PI) 9/30/2009–8/31/2011
NIH $321,449 in direct costs for first year
Autologous EPC lining to improve biocompatibility of circulatory assist devices

PREVIOUS SUPPORT

NIH RO1-HL-44972 years 1-17 (P.I. Reichert) 7/1/90 - 6/30/09
Endothelial Cell Adhesion to Polymers Studied by TIRF
~$2,125,000 in total costs

1 R01 EB002408-01 (P.I. Truskey) 9/30/03-8/31/07
NIH $450,000 in total direct costs
Mechanical Stimulation of 2- and 3-D Myoblast Culture

2 RO1-HL-57446 (P.I. Truskey) 7/1/03-6/30/07
NIH/NHLBI $600,000 in total direct costs
Effect of Flow on Monocyte-Endothelial Cell Interactions

Whitaker Foundation(W.M. Reichert/G.A. Truskey, co-PIs) 7/1/03-6/30/06
$979,000 in total project costs

Educational and Research Programs in Genomic Technology and Biomolecular Modeling

R21HL72189-01 (P.I. Truskey) 9/30/02-3/31/06
NIH $450,000 in total direct costs
Endothelial-Smooth Muscle Cell Interactions

1 RO1 EB000501(Grinstaff) 7/1/03-6/30/05
NIH $999,283 in direct costs for current year
Interfacial Biomaterials

2 RO1-HL-41372-11 (Truskey) 7/1/2000-6/30/2003
NIH $600,000 in total direct costs
Monocyte and LDL dynamics during Early Atherogenesis

NIH DK54932(P.I. Reichert) 12/01/98-11/30/03 (Collaborator)
NIH $161,033
Biosensor Biocompatability

NASA (P.I. Kraus) 4/1/99 - 11/30/02 (Collaborator)
National Aeronautics and Space Administration $111,346
Differentiation and Maintenance of Skeletal and Cardiac Muscle in Simulated Microgravity

No number (P.I. Goldschmidt) 11/1/01-10/30/02
Medtronic $53,000 in total direct costs
Strategic Alliance for Heart Failure; Subproject on Cellular Therapeutics

1R13-RR-16867 (P.I. Truskey) 9/24/01-9/23/02
NIH/NIBIB $8,000
2001 Meeting of the Biomedical Engineering Society

2002-BMG-3001 (P.I. Truskey) 9/02/01-10/24/01
North Carolina Biotechnology Center $2,500
2001 Meeting of the Biomedical Engineering Society

G.A. Truskey (PI) 6/1/00-5/30/02
Whitaker Foundation Textbook Program $133,484 total project cost
Transport Phenomena in Biological Systems: A Textbook for Biomedical Engineers

1 RO1-HL-57446- (P.I. Truskey) 1/1/98-6/30/0120%
NIH/NHLBI $382,403 in direct costs
Effect of Flow on Monocyte-Endothelial Cell Interactions

NASA NGT5-50266 (P.I. Truskey) 07/01/99-06/30/01
NASA $41,359 in direct costs
Graduate Student Traineeship for Amy Collinsworth

BES DUE-9851346 (P.I. Truskey) 7/1/98-6/30/00 0% effort
NSF $75,000 (total project costs)

Laboratories in Biomolecular and Cellular Engineering

Lord Foundation (P.I. Truskey) 7/1/98-6/30/00 0% effort
$75,000 (total project costs)
Matching funds for NSF proposal "Laboratories in Biomolecular and Cellular Engineering".

RO1 HL58939(P.I. Telen) 9/1/97-6/30/01
NIH/NHLBI $258,000
Sickle Cell Adhesion
The objective of this award is to identify the receptors for laminin on sickle cells and to determine the contribution of laminin to sickle cell adhesion.

1T32 GM08555-01 (P.I. Hochmuth) 7/1/94 - 6/30/99
NIH/NIGMS $797,353
Research Training in Cellular and Biosurface Engineering

North Carolina Biotech Center (2000-IDG-1004) (F. Yuan, PI) A laser scanning confocal microscopy for biotechnology research
Period: 07/01/2000 - 1/31/2001 Total Award: $125,000 Total Direct Cost: $125,000

RO1-HL-41372 (P.I.Truskey) 7/1/96 - 6/30/99
NIH/NHLBI $175,909
LDL Transport in Arteries Following Endothelial Injury

NRA-94-OLMSA-02 (P.I. Kraus) 9/1/95 - 8/31/99
National Aeronautics and Space Administration $399,615
Role: in Project: Co-Investigator
Regulation of Skeletal Muscle Development and Differentiation In Vitro by Mechanical and Chemical Factors

Lord Foundation (P.I. Truskey) 7/1/98-6/30/99
$ 24,647 (total project costs)
Department of Biomedical Engineering Laboratory Upgrade BME 101, 163 and 164.

Whitaker Foundation (P.I. Katz) 7/1/95-6/30/98
Special Opportunity Award in Cellular and Biosurface Engineering $642,263

BDI-9604785 (Chilkoti) 2/15/97-1/31/99
NSF $132,227
Combined atomic force microscope and total internal reflection fluorescence microscopy for biological research

9703-IDG-1002 (Chilkoti) 2/15/97-2/15/98
North Carolina Biotechnology Center $66,114
Combined atomic force microscope and total internal reflection fluorescence microscopy for biological research

NIH F32 HL09072 (Sponsor G.A.Truskey) 5/31/95-5/30/98 $84,600
Shear Stress and Calcium and Endothelial NO Release. Individual National Research Service Award to Dr. Anthony Kanai.

NSF BES-9421425 (P.I. Truskey) 6/15/95 - 5/27/98 $103,912
Cell Shape and Growth Regulation by Micropatterned Surfaces

Duke University Provost Commons Fund (P.I. Truskey) 7/1/93-6/30/95 $80,000
Establishment of the Center for Cellular and Biosurface Engineering

American Heart Association 93012390 (P.I. Truskey) 7/1/93 - 6/30/96 $80,000
In Vitro Response of Endothelium in a Region of Flow Recirculation

Organon Teknika (P.I. Truskey) 9/1/93-5/1/94 $4,000
Support of graduate student A. Malik

NSF BSC-8906307 (P.I. J.D. Bryers) 8/1/89-1/31/91 $70,000
Engineering Research Equipment Grant: Attenuated Total Reflectance/Fourier Transform Infrared Spectrometer Purchase.

North Carolina Biotechnology Center (P.I. J.D. Bryers) 7/1/90-6/30/91 $25,000
Purchase and Initial Start-up of a Attenuated Total Reflectance/Fourier Transform Infrared Spectrometer.

Whitaker Foundation (P.I. Truskey) 7/1/89-6/30/92 $179,908
Adhesion of Endothelial Cells in Simple and Complex Flows

R29-HL-41372-01-05 (P.I.Truskey) 7/1/88 - 6/30/93 $331,255
Hemodynamics and LDL Permeability in the Arterial Wall

NSF ECE8613128 (Tufts University) (P.I. R.S. Swartz) 9/1/86-8/31/89 $202,944
In Vitro Cultivation of Human T-Lymphocytes (5% effort)

NSF CBT-8612586 and CBT-8746074 (P.I. Truskey) 9/1/86-3/31/89 $53,194
Response of Anchorage-Dependent Animal Cells to Fluid Shear Stress

NIH F32 HL07223 (P.I. Truskey) 1985 Declined
National Research Service Award: Response of Endothelial LDL Metabolism to Shear Stresses (Sponsor P.F. Davies).