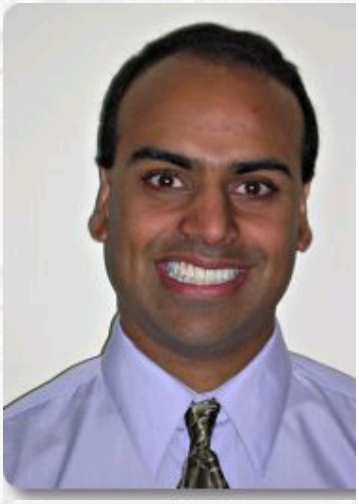
Samir N. Ghadiali, Ph.D.
Associate Professor



Education and Work Experience:

1990 - 1994: BS Chemical Engineering, Cornell University, Ithaca NY

1994 - 2000: MS and PhD Biomedical Engineering, Tulane University, New Orleans LA

2000 - 2001: Post-doctoral Fellow, University of Pittsburgh, Department of Surgery and Bioengineering

2002 - 2003: Research Assistant Professor, Children's Hospital of Pittsburgh, Department of Pediatric Otolaryngology

2003 - 2008: Frank Hook Assistant Professor of Bioengineering, Lehigh University, Department of Mechanical Engineering and Mechanics

2008 - present: Associate Professor, The Ohio State University, Department of Biomedical Engineering

Affliations:

Dorothy M. Davis Heart and Lung Research Institute, Ohio State University Medical Center

Division of Pulmonary and Critical Care Medicine, Ohio State University Medical Center

Research Interests:

The goal of Dr. Ghadiali's laboratory is to understand how biomechanical forces at multiple length scales, including the molecular, cellular and organ levels, contribute to the pathophysiology of various respiratory and lung disorders. Dr. Ghadiali's lab utilizes a sophisticated combination of techniques from biology, engineering and mathematics to elucidate how these multi-scale forces influence respiratory function and to develop novel therapies for respiratory disorders. In addition to conducting in-vitro and in-vivo experiments, Dr. Ghadiali's laboratory also develops multi-scale, imaged-based computational models of the respiratory system. These quantitative models of respiratory physiology are being used to interpret counter-intuitive experimental data, suggest new avenues of investigation and develop novel patient-specific

therapies.

Description of Research Projects:

1. Mechanobiology of Acute Lung Injury
2. Eustachian Tube Mechanics and Otitis Media
3. Multi-scale Modeling of Cell Mechanics
4. Focal Adhesion Dynamics / Cell Adhesion

Lab Members:

Xiaodong Chen, PhD graduate student, Mechanical Engineering, Ohio State University

Francis Sheer, PhD graduate student, Mechanical Engineering, Ohio State University

Honors/Awards:

1. NSF CAREER Award, 2008-2013
2. NIH RO1 New Investigator Award, 2006-2011
3. Parker B. Francis Fellowship in Pulmonary Research, 2005-2008
4. Frank Hook Assistant Professorship in Bioengineering, 2005-2007
6. US National Committee on Biomechanics New Faculty Award, 2005
7. Louisiana Board of Regents Graduate Study Scholarship, 1994

Recent Selected Publications:

Ghadiali, S.N., “Making-time for Alveolar Recruitment”, Journal of Applied Physiology, J Appl Physiol 106: 751-752, 2009

Dailey, H.L., Ricles, L.M., Yalcin, H.C., Ghadiali, S.N., “Image-Based Finite Element Modeling of Alveolar Epithelial Cell Injury during Airway Reopening”, Journal of Applied Physiology, J Appl Physiol 106: 221-232, 2009

Ghadiali, S.N. “Computer Modeling in Otitis Media: Perspectives and Limits” Kugler Publishing, Amsterdam, NL. 2008.

Ghadiali, S.N. & Gaver, D.P., “Biomechanics of Liquid-Epithelium Interactions in Pulmonary Airways”, Respiratory Physiology and Neurobiology, Respiratory Physiology & Neurobiology 163 (2008), pp. 232-243

Wei, M.T., Zaorski, A., Yalcin, H.C., Wang, J., Hallow, M., Ghadiali, S.N., Chiou, A., Ou-Yang, H.D., “A Comparative Study of Living Cell Micromechanical Properties by Oscillatory Optical Tweezers”, Optics Express, 16: 8594-8603, 2008.

Yalcin, H.C., Perry, S.F., Ghadiali, S.N., “Influence of Airway Diameter and Cell Confluence on Epithelial Cell Injury in an In-Vitro Model of Airway Reopening”, Journal of Applied Physiology,

103:1796-1807, 2007.

Dailey, H.L. & Ghadiali, S.N., “Fluid-Structure Analysis of Microparticle Transport in Deformable Pulmonary Alveoli”, Journal of Aerosol Science, 38: 269-288, 2007.

Dailey, H.L., Yalcin, H.C., Ghadiali, S.N., “Fluid-Structure Modeling of Flow-Induced Alveolar Epithelial Cell Deformation”, Computers and Structures, 85: 1066-1071, 2007.

Kanick, S.C., Doyle, W.J., Ghadiali, S.N., Federspiel, W.J., “ Differences Between Two Methods of Measuring Diffusion Length in the Predicted Oxygen Diffusing Capacity of the Middle Ear Mucosa”, Journal of Applied Physiology, 98: 114-119, 2005.

Ghadiali, S.N., J. Banks, J.D. Swarts, “Finite Element Analysis of Active Eustachian Tube Function”, Journal of Applied Physiology, 97: 648-654, 2004

Ghadiali, S.N., J. D. Swarts, W. J. Doyle, “Effect of Tensor Veli Palatini Muscle Paralysis on Eustachian Tube Mechanics”, Annals of Otology, Rhinology and Laryngology, 112(8): 704-711, 2003.

Ghadiali, S.N., Gaver, D.P. III. “The Influence of Non Equilibrium Surfactant Dynamics on the Flow of a Semi Infinite Bubble in a Rigid Cylindrical Capillary Tube” Journal of Fluid Mechanics, 478: 165-196, 2003.

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