

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel in the order listed on Form Page 2.

Follow the sample format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Scott H. Randell		POSITION TITLE Assistant Professor	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(S)	FIELD OF STUDY
State University of N.Y. College @ New Paltz	BS	1979	Biology
Johns Hopkins University, Baltimore, MD	Ph.D.	1985	Toxicology /Experimental Pa- thology

**A. Positions and Honors****1) Research and Professional Experience**

1979-1981: Laboratory Associate, The Johns Hopkins University  
 1981-1984: Medical Technologist, The Johns Hopkins Hospital  
 1985-1989: Postdoctoral Fellow, Respiratory Medicine, Duke University Medical Center  
 1989-1991: Staff Fellow, NIH/NIEHS  
 1991-1994: Senior Staff Fellow, NIH/NIEHS  
 1994-present: Asst. Professor, Dept. of Medicine, University of North Carolina, Chapel Hill, NC  
 2000-present: Joint Appointment, Department of Cell and Molecular Physiology, UNC Chapel Hill

**2) Honors and Awards**

1974 - New York State Regents Scholarship  
 1979 - Graduate Cum Laude (B.S. Degree)  
 1980 - Scholarship from The Johns Hopkins University  
 1981 - Predoctoral Training Grant Recipient  
 1985 - Postdoctoral Training Grant Recipient

**B. Selected Peer-Reviewed Publications (From greater than 40).**

Randell SH, C Comment, FCS Ramaekers and P Nettesheim. Properties of rat tracheal epithelial cells separated based on expression of cell surface a-galactosyl end groups. *Am J Respir Cell Mol Biol* 4:544-554,1991.  
 Randell SH, R Silbajoris and SL Young. Ontogeny of rat lung type II cells correlated with surfactant lipid and apoprotein expression. *Am J Physiol Lung Cell Biol* 4:562-L570,1991.  
 Shimizu T, P Nettesheim, and SH Randell. Monoclonal antibody (mAb) markers for subpopulations of rat tracheal epithelial (RTE) cells. *Exper Lung Res*, 18:323-342,1992.  
 Shimizu T, P Nettesheim, FCS Ramaekers and SH Randell. Expression of "cell-type-specific" markers during rat tracheal epithelial regeneration. *Am J Respir Cell Mol Biol*, 7: 30-41,1992.  
 Kaartinen L, P Nettesheim, KB Adler and SH Randell. Differentiation of rat tracheal epithelial cells in vitro. *In Vitro*, 29A:481-492, 1993.  
 Randell SH, Shimizu T, FCS Ramaekers and P Nettesheim. Expression of phenotypic markers during fetal and neonatal differentiation of rat tracheal epithelial cells. *Am J Respir Cell Mol Biol*, 8:546-555, 1993  
 Liu JY, Nettesheim P and SH Randell. Growth and differentiation of tracheal progenitor cells. *Am J Physiol (Lung Cell Mol Physiol 10):* L296-L307, 1994.  
 Clark AB, Randell SH, Nettesheim P, Gray TE, and LE Ostrowski. Ciliogenesis of rat tracheal epithelial cells in vitro. *Am J Respir Cell Mol Biol*, 12:329-338, 1995.  
 Randell SH, JY Liu, PC Ferriola, L. Kaartinen, M.M. Doherty, CW Davis and P. Nettesheim. Mucin production by SPOC1 cells- An immortalized rat tracheal epithelial cell line. *Am J Respir Cell Mol Biol*, 14:146-154, 1996.

- Abdullah LH, SW Davis, L Burch, M. Yamauchi, SH Randell, P Nettesheim and CW Davis. P2u purinoreceptor regulation of mucin secretion in SPOC1 cells, a goblet cell line from the airways. *Biochem J*, 316:943-51, 1996.
- Matsui H, Johnson LG, Randell SH, and Boucher RC. Loss of binding and entry of liposome-DNA complexes decreases transfection efficiency in differentiated airway epithelial cells. *J of Biol Chem*, 272:1117-1126, 1997.
- Rose AS, Prazma J, Randell SH, Baggett HC, and HC Pillsbury. Nitric oxide mediates mucin secretion in endotoxin-induced otitis media with effusion. *Otolaryngology- Head Neck Surg*; 116(3):308-316, 1997.
- Pickles RJ, McCarty D, Randell SH and RC Boucher. Limited entry of adenovirus vectors into well differentiated airway epithelium is responsible for inefficient gene transfer to differentiated airway epithelium. *J Virology*; 72(7):6014-6023, 1998.
- Matsui H, Randell SH, Perritti, SW, Davis CWD, and Boucher RC. Coordinated clearance of periciliary liquid and mucus from airway surfaces. *J Clin Invest*, 102(6):1125-1131, 1998.
- Shannon JM, Nielsen LD, Gebb SA and SH Randell. Mesenchyme specifies epithelial phenotype in reciprocal recombinants of fetal distal lung and trachea. *Developmental Dynamics*; 121:482-494, 1998.
- Matsui H, Grubb BR, Tarran R, Randell SH, Gatzky JT, Davis CW and RC Boucher. Evidence for periciliary liquid layer depletion, not abnormal ion composition, in the pathogenesis of cystic fibrosis airways disease. *Cell*. 23;95(7):1005-15, 1998.
- Bernacki SH, Nelson AL, Abdullah L, Sheehan JK, Harris A, Davis CW, and SH Randell. Mucin gene expression during differentiation of human airway epithelia in vitro: MUC4 and MUC5B are strongly induced. *Am J Respir Cell Mol Biol*, 20:595-604, 1999.
- Hunter SE, Singla AK, Prazma J, Jewett BS, Randell SH, Pillsbury HC 3rd. Mucin production in the middle ear in response to lipopolysaccharides. *Otolaryngol Head Neck Surg*. Jun;120(6):884-8, 1999.
- Davidson DJ, Kilanowski FM, Randell SH, Sheppard DN and JR Dorin. A primary culture model of differentiated mouse tracheal epithelium. *Am J Physiol (Lung Cell Mol Physiol)*: *Am J Physiol Lung Cell Mol Physiol*. Oct;279(4):L766-78. 2000.
- Ressler B, Lee RT, Randell SH, Drazen JM and RD Kamm. Molecular responses of rat tracheal epithelial cells to transmembrane pressure. *Am J Physiol Lung Cell Mol Physiol*. Jun;278(6):L1264-72, 2000.
- Becker MN, Diamond G, Verghese MW and SH Randell. CD14-dependent lipopolysaccharide-induced  $\beta$ defensin 2 expression in human tracheobronchial epithelium. *J Biol Chem*. Sep 22;275(38):29731-6. 2000.
- Borthwick DW, Shahbazian M, Krantz QT, Dorin JR, and SH Randell. Evidence for Stem Cell Niches in the Murine Tracheal Epithelium. *Am J Respir Cell Mol Biol*: Jun 24(6):662-70. 2001.
- Randell SH, Walstad DL and JR Yankaskas. Isolation and culture of airway epithelial cells from chronically infected human lungs. *In Vitro Cellular and Developmental Biology*. 37:480-489, 2001.
- Neuringer IP, Aris RM, Burns KA, Bartolotta TL, Chalermkulrat W, Randell SH. Epithelial kinetics in mouse heterotopic tracheal allografts. *Am J Transplant*. 2002 May;2 (5):410-9.
- Lundberg AS, Randell SH, Stewart SA, Elenbaas B, Hartwell KA, Brooks MW, Fleming MD, Olsen JC, Miller SW, Weinberg RA, Hahn WC. Immortalization and transformation of primary human airway epithelial cells by gene transfer. *Oncogene*. 2002 Jul 4;21(29):4577-86.
- Saavedra M, Vasil M, Randell S, West J, Rodman D. Pseudomonas aeruginosa-human airway epithelial cell interaction: effects of iron on inflammation and apoptosis. *Chest*. 2002 Mar;121(3 Suppl):40S-41S.
- Zhang YJ, O'Neal WK, Randell SH, Blackburn K, Moyer MB, Boucher RC, Ostrowski LE. Identification of dynein heavy chain 7 as an inner arm component of human cilia that is synthesized but not assembled in a case of primary ciliary dyskinesia. *J Biol Chem*. 2002 May 17;277(20):17906-15.
- MN Becker, MS Sauer, MS. Muhlebach, AJ Hirsh, Qi Wu, MW Verghese and SH Randell. Cytokine Secretion by CF versus non-CF Human Airway Epithelial Cells, In Revision, 2003
- KG Schoch, A Lori, KA Burns, T Eldred, JC Olsen and SH Randell. A Subset of Mouse Tracheal Epithelial Basal Cells with Progenitor Cell Properties, In Revision, 2003

### C. Research Support in Last 3 Years

#### Ongoing

**Title:** Identification of Airway Epithelial Stem Cells; **Principal Investigator:** Scott H. Randell; **Agency:**

NIH/NHLBI; **Type:** 5R01 HL58345-06; **Period:** 2/15/01-11/30/04; **Objective:** Identify airway epithelial stem cells.

**Title:** Epithelial Function in Cystic Fibrosis, Core C: Tissue Culture Core (Boucher, Program Director); **Core Director:** Scott H. Randell; **Agency:** Cystic Fibrosis Foundation; **Type:** R026; **Period:** 7/1/02-6/30/06; **Objective:** Provide

tissue procurement services, airway epithelial cell isolation and culture, and cell culture technical services to CFF RDP investigators.

**Title:** SCOR in Airway Biology/Pathogenesis of Cystic Fibrosis, Core B: Tissue Culture Core (Boucher, Program Director); **Core Director:** Scott H. Randell; **Agency:** NIH/NHLBI; **Type:** 5 P50 HL 60280-04; **Period:** 9/1/98-8/31/03; **Objective:** Provide tissue procurement services, airway epithelial cell isolation and culture, and cell culture technical services to SCOR investigators.

**Title:** Gene Therapy for Cystic Fibrosis, Core B: Cell Culture Core (Boucher, Program Director); **Core Director:** Scott H. Randell; **Agency:** NIH/NHLBI; **Type:** 5 P01 HL 51818-09; **Period:** 4/1/99-3/31/04; **Objective:** The major goal of this core is to provide tissue procurement, cell isolation and culture, and cell culture technical development.

**Title:** The TLR-NF- $\kappa$ B Pathway in CF Airway Epithelium; **Principal Investigator:** Scott H. Randell; **Agency:** Cystic Fibrosis Foundation; **Type:** 5 P01 HL 51818-09; **Period:** 11/15/00-11/14/03; **Objective:** The major goals of this project is to define the receptors and signal transduction pathways determining airway epithelial cell responsiveness to bacterial products and any differences in CF cells.

**Title:** CF Therapeutic Targets Revealed by Expression Arrays, Project 2: Differential Expression of Inflammation Related Genes (O'Neal, Program Director); **Principal Investigator:** Scott H. Randell; **Agency:** Cystic Fibrosis Foundation; **Type:** ONEAL00V0; **Period:** 3/1/01-2/29/04; **Objective:** The studies use gene array technology to define patterns of gene expression to identify therapeutic targets that regulate airway inflammation characteristic of CF lung disease

**Title:** Pulmonary Epithelia in Health and Disease, Core C: Cell Culture Core (Richard Boucher, Program Director); **Core Director:** Scott H. Randell; **Agency:** NIH/NHLBI; **Type:** 5 P01 HL 34322-17; **Period:** 4/1/01-3/31/06; **Objective:** Core for tissue procurement services, cell isolation and culture, and genetic manipulation of cell cultures.

**Title:** Ischemic Injury in Cadaver Donors for Lung Transplant; **Co-Investigator:** Scott H. Randell (PI: Thomas Egan); **Agency:** NIH/NHLBI; **Type:** 1 R01 HL 63159-01A2; **Period:** 9/20/01-7/31/04; **Objective:** Characterize the biochemical events in the non-heart-beating donor lung and during a period of normothermic ischemia after circulatory arrest but prior to reperfusion, and ischemia reperfusion injury after circulatory arrest in the non-heart-beating-donor rat lung.

**Pending - None**

#### **Ended**

**Title:** Human Airway Antimicrobials: Identification and Regulation **Principal Investigator:** Scott H. Randell; **Agency:** Cystic Fibrosis Foundation; **Type:** RANDEL97Z0; **Period:** 7/1/97-6/30/01; **Objective:** Characterization of mechanisms responsible for antimicrobial functions of the airway, thereby elucidating novel approaches for effective treatment of CF and other lung diseases.

**Title:** Gene Therapy Center; **Co-Principal Investigator:** Scott H. Randell (PI, Richard Boucher); **Agency:** Cystic Fibrosis Foundation; **Type:** S880; **Period:** 9/30/97-9/29/99; **Objective:** Gene Therapy to Prevent Post-transplant Obliterative Bronchiolitis

**Title:** Gene Therapy Center, Core B: Cell Culture Core; **Co-Principal Investigator:** Scott H. Randell (PI, Richard Boucher); **Agency:** Cystic Fibrosis Foundation; **Type:** S880 Bridge; **Period:** 9/1/98-3/31/99; **Objective:** Core to supply Gene Therapy for Cystic Fibrosis investigators with cultured epithelial cells and cell lines from humans and animals in conditions appropriate to the planned experiments.

**Title:** Gene Therapy Center, Proj. II: Overcoming the Glycocalyx Barrier to Gene Therapy Vectors; **Co-Investigator:** Scott H. Randell (Grant transferred to Raymond Pickles) (PI, Richard Boucher); **Agency:** Cystic Fibrosis Foundation;

**Type:** S880; **Period:** 12/1/99-11/30/01; **Objective:** Determination of the relative contributions of mucins, proteoglycans and glycolipids to the apical plasma membrane of human tracheobronchial epithelial (hTBE) cells *in vitro* and *in vivo*.

**Title:** Neutrophil Functions in Mucus; **Principal Investigator:** Scott H. Randell (Grant Transferred to Hiro Matsui); **Agency:** Cystic Fibrosis Foundation; **Type:** RANDEL00G0; **Period:** 4/1/00-3/31/02; **Objective:** Characterization of the function of neutrophils in model systems that simulate the abnormalities in the properties of the mucus that lines the lungs of patients with cystic fibrosis.