

University of California, San Francisco
CURRICULUM VITAE

Name: Walter E Finkbeiner, MD, PhD

Position: Recalled HCOP, Step 8
Pathology
School of Medicine

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EDUCATION

1970 - 1974	Northwestern University, Evanston, IL	B.A.	Biology
1974 - 1978	University of Illinois, Chicago, IL	M.D.	Medicine
1978 - 1979	University of Illinois Hospital, Chicago, IL	Intern	Surgery
1979 - 1980	University of California, San Francisco	Resident	Pathology
1981 - 1982	University of California, San Francisco	Chief Resident	Pathology
1982 - 1984	University of California, San Francisco, CVRI	Research Fellow	Lung Cell Biology
1983 - 1989	University of California, San Francisco	Ph.D.	Experimental Pathology
2000 - 2001	University of California, Davis	Fellow	Forensic Pathology

LICENSES, CERTIFICATION

1979	Diplomate, National Board of Medical Examiners
1980	Medical licensure, California #G41479
1982	Certification, American Board of Pathology (Anatomic Pathology)

PRINCIPAL POSITIONS HELD

1984 - 1990	University of California, San Francisco	Assistant Professor	Pathology
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1990 - 1996	University of California, San Francisco	Associate Professor	Pathology
1996 - 1998	University of California, San Francisco	Professor	Pathology
1998 - 2001	University of California, Davis	Professor	Medical Pathology
2001 - 2002	University of California, Davis	Professor and Vice Chair	Medical Pathology
2002 - 2017	University of California, San Francisco	Professor and Vice Chair	Pathology
2017 - present	University of California, San Francisco	Professor Emeritus	Pathology

OTHER POSITIONS HELD CONCURRENTLY

1986 - 1991	Fort Miley VA Medical Center	Consultant Pathologist
1990 - 1998	University of California, San Francisco	Associate Staff, Cardiovascular Research Institute
1990 - 1997	Moffitt-Long Hospital, UCSF	Director, Autopsy Service
1994 - 1998	Mount Zion Hospital, UCSF	Medical Staff and Director Autopsy Service
1998 - 2002	University of California Davis Medical Center	Director of Anatomic Pathology
2002 - 2017	San Francisco General Hospital	Chief, Department of Anatomic Pathology
2002 - 2017	University of California, Davis	Member, Forensic Sciences Graduate Program
2002 - 2016	University of California, Davis	Research Associate, California National Primate Center
2002 - 2016	UCSF	Chief of Pathology at ZSFG Endowed Chair
2004 - 2016	University of California, Davis	Research Associate, California National Primate Center
2017 - present	Zuckerberg San Francisco General Hospital and Trauma Center	Medical Staff, Department of Anatomic Pathology

HONORS AND AWARDS

1970	Phi Eta Sigma	Northwestern University
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1974	James Scholar Program for Independent Study	University of Illinois School of Medicine
1983	Cystic Fibrosis Research Fellowship	UCSF
1984	Strobel Medical Education Research Award	UCSF
1984	Clinical Investigator Award	NIH-HLBI
1988	Nomination for "Excellence in Small Group Instruction," School of Medicine, Class of 1990	UCSF
1989	Distinction in Teaching Award for "Excellence in Small Group Instruction," School of Medicine, Class of 1991	UCSF
1991	Teaching Award, Pathology Residents and Fellows	UCSF
2012-2017	Chief of Pathology at the ZSFG Endowed Chair	UCSF

KEYWORDS/AREAS OF INTEREST

Anatomic pathology, experimental pathology, autopsy pathology, respiratory cell biology, lung pathology, airways, chronic obstructive pulmonary diseases, cystic fibrosis, asthma, mucus, fetal pathology, cardiovascular pathology, cell culture, airway cell models.

CLINICAL ACTIVITIES

Throughout my career, I have specialized in autopsy, cardiovascular, pulmonary and fetal congenital disease pathology and have taught these disciplines to pathology residents.

PROFESSIONAL ACTIVITIES

MEMBERSHIPS

- 1984 - 1992 American Association for the Advancement of Science
- 1985 - present Society for In Vitro Biology
- 1986 - 1991 Society for Cardiovascular Pathology
- 1986 - present U.S. and Canadian Academy of Pathology
- 1987 - 1996 American Society for Cell Biology
- 1988 - present American Society of Investigative Pathology
- 1988 - 2008 American Thoracic Society
- 1994 - 1996 Society for Quantitative Morphology
- 1994 - 2011 American Physiological Society

- 1998 - 2018 College of American Pathologists
- 1998 - 2002 Association of Directors of Anatomic and Surgical Pathology
- 1998 - 2008 Pulmonary Pathology Society
- 2002 - 2013 American Academy of Forensic Sciences

RESEARCH AND CREATIVE ACTIVITIES

My basic scientific research focuses on the conducting airways of the respiratory tract and the major diseases that affect them, including chronic bronchitis, asthma and cystic fibrosis (CF). One of my major research interests includes developing human cell models for use in studying the regulation of airway mucus, water and ion secretion, particularly as it relates to CF. We have been successful in developing cultures derived from nasal, tracheal and bronchial epithelium and have identified methods to either induce or preserve differentiated features of these cells that make them desirable for the study of ion transport processes and mucus secretion. These various cell models of the airway have been used extensively to extend our knowledge of the regulation of ion transport, mucus secretion and regulation of the airway surface liquid. We have also used our model systems in a number of collaborative studies related to cancer biology, particularly squamous metaplasia and malignant transformation of the airway epithelium. We continue to explore new ways to generate cell models of the airway epithelial cells or the airway with improved differentiation and function. Currently, we are using conditional reprogramming and 3-D organoid cultures to develop cell models for use in high-throughput screening assays (HTS) for CF drug discovery.

Another area of research that my laboratory is currently pursuing relates to airway remodeling, a pathological feature of the airway diseases. Specifically, we are interested in determining the molecular controls involved in hyperplasia of the airway glands. Gland cell hyperplasia is associated with the mucus hypersecretion common to chronic bronchitis, asthma and bronchiectasis. We are using laser microdissection and gene expression analysis to identify the specific roles of the human airway cells during gland hyperplasia. As a secondary approach, we are also determining important genes that initiate and control development of glands during gestation.

Finally, I try to undertake some clinically-oriented pathology studies. We recently completed and published a correlative study comparing pathology diagnoses with prenatal diagnoses in a large series of second trimester D&E specimens performed for congenital structural or karyotype abnormalities. This work showed that pathology examination of fragmented specimens corrected diagnoses in 37% of cases and yielded additional diagnostic findings in 33% of cases.

RESEARCH AWARDS – CURRENT

5P30DK072517-12 (Verkman, PI/PD)

07/15/2015-6/30/2020

NIH/NIDDK

Cystic Fibrosis Research and Translational Core Center

Novel small-molecule therapies for CF

Small-molecule drug discovery of new treatments for cystic fibrosis.

Role: Co-associate program director

Core B: Cell & Tissue Models

Develop and provide cell models of the respiratory mucosa to CF investigators.

Role: Core Leader

VERKMA15R0 (Verkman, PD) 08/01/2015-07/31/2019
Cystic Fibrosis Foundation Research Development Program
CF pathologies and new therapies
Central infrastructure for CF research at UCSF
Role: Co-Associate Director
Core 2: Cell Models Core
Role: Core Leader
Provide cell models of the respiratory mucosa and morphology technical support to CF investigators.

UM1CA181255 (McGrath, MPI) 09/01/2013-08/31/2019
NIH/NCI
AIDS and Cancer Specimen Resource (ACSR)
(1) Develop and maintain an ACSR infrastructure; (2) Provide scientific leadership, implement organizational function and expand utilization and relevance of the ACSR; (3) Acquire, maintain and distribute a diverse collection of high quality well-annotated biospecimens; (4) Support NCI funded initiatives, international collections, collaborative projects and affiliated programs.
Role: Co-Investigator.

P0523002 (Verkman, PI) 07/01/2017-06/30/2019
Emily's Entourage
Advancing small molecules to restore W1282X-CFTR function
The major goal of this project is to perform a high-throughput screening for CFTR to identify small molecule correctors of the $\Delta F508/\Delta F508$ CF mutation.
Role: Co-Investigator.

NIH 1R01HL138424-01 (Erle, PI) 08/01/2017 – 06/30/2021
NIH/HLBI
Airway epithelium reprogramming in asthma
The major goals of this project are to define the cell specific regulatory events occurring during airway remodeling in asthma. Aim 1 utilizes vitro human airway cell models to define the effects of cytokines on the cell-specific airway gene expression. Aim 2 compares cell-specific relevant gene expression in cells isolated from bronchial brushings of healthy control subjects with those obtained from asthmatic patients. Aim 3 studies the role of gene enhancers in the airway gene regulation.
Role: Co-Investigator.

NIH 1R01HL138424-01 (Erle, PI) 08/01/2017 – 06/30/2021
NIH/HLBI
Airway epithelium reprogramming in asthma
The major goals of this project are to define the cell specific regulatory events occurring during airway remodeling in asthma. Aim 1 utilizes vitro human airway cell models to define the effects of cytokines on the cell-specific airway gene expression. Aim 2 compares cell-specific relevant gene expression in cells isolated from bronchial brushings of healthy control subjects with those

obtained from asthmatic patients. Aim 3 studies the role of gene enhancers in the airway gene regulation.

Role: Co-Investigator

2U19AI077439-11 (Erle, PI)

04/01/2018 – 03/31/2023

Understanding Asthma Endotypes

The major goals of these cooperative projects are to identify novel pathophysiologic mechanisms including the roles of miRNA and other modulators of gene transcription that are involved in asthma with the ultimate objective of discovering novel therapeutic targets.

Role: Co-Investigator

PEER REVIEWED PUBLICATIONS

1. Finkbeiner WE, Egbert BM, Groundwater JR, Sagebiel RW. Kaposi's sarcoma in young homosexual men: a histopathologic study with particular reference to lymph node involvement. *Arch Pathol Lab Med.* 1982 Jun; 106(6):261-4.
2. Kereiakes DJ, Ports TA, Finkbeiner W. Endomyocardial biopsy in Henoch-Schönlein purpura. *Am Heart J.* 1984 Feb; 107(2):382-5.
3. Alpers CE, Rosenau W, Finkbeiner WE, de Lorimier AA, Kronish D. Congenital (infantile) hemangiopericytoma of the tongue and sublingual region. *Am J Clin Pathol.* 1984 Mar; 81(3):377-82.
4. Basbaum CB, Mann JK, Chow AW, Finkbeiner WE. Monoclonal antibodies as probes for unique antigens in secretory cells of mixed exocrine organs. *Proc Natl Acad Sci U S A.* 1984 Jul; 81(14):4419-23.
5. Welch K, Finkbeiner W, Alpers CE, Blumenfeld W, Davis RL, Smuckler EA, Beckstead JH. Autopsy findings in the acquired immune deficiency syndrome. *JAMA.* 1984 Sep 7; 252(9):1152-9.
6. Adzick NS, Harrison MR, Glick PL, Villa RL, Finkbeiner W. Experimental pulmonary hypoplasia and oligohydramnios: relative contributions of lung fluid and fetal breathing movements. *J Pediatr Surg.* 1984 Dec; 19(6):658-65.
7. Widdicombe JH, Coleman DL, Finkbeiner WE, Tuet IK. Electrical properties of monolayers cultured from cells of human tracheal mucosa. *J Appl Physiol.* 1985 May; 58(5):1729-35.
8. Hunter JA, Finkbeiner WE, Nadel JA, Goetzi EJ, Holtzman MJ. Predominant generation of 15-lipoxygenase metabolites of arachidonic acid by epithelial cells from human trachea. *Proc Natl Acad Sci U S A.* 1985 Jul; 82(14):4633-7.
9. Widdicombe JH, Welsh MJ, Finkbeiner WE. Cystic fibrosis decreases the apical membrane chloride permeability of monolayers cultured from cells of tracheal epithelium. *Proc Natl Acad Sci U S A.* 1985 Sep; 82(18):6167-71.
10. Bernstein D, Finkbeiner WE, Soifer S, Teitel D. Perinatal myocardial infarction: a case report and review of the literature. *Pediatr Cardiol.* 1986; 6(6):313-7.
11. Aherne T, Tscholakoff D, Finkbeiner W, Sechtem U, Derugin N, Yee E, Higgins CB. Magnetic resonance imaging of cardiac transplants: the evaluation of rejection of cardiac allografts with and without immunosuppression. *Circulation.* 1986 Jul; 74(1):145-56.

12. Gashi AA, Borson DB, Finkbeiner WE, Nadel JA, Basbaum CB. Neuropeptides degranulate serous cells of ferret tracheal glands. *Am J Physiol.* 1986 Aug; 251(2 Pt 1):C223-9.
13. Davis JC, Finkbeiner WE, Ruder MA, DiCarlo L Jr, Matsubara T, Chu W, Winston SA, Bharati S, Scheinman MM, Lev M. Histologic changes and arrhythmogenicity after discharge through transeptal catheter electrode. *Circulation.* 1986 Sep. 74(3):637-44.
14. Basbaum CB, Chow A, Macher BA, Finkbeiner WE, Veissiere D, Forsberg LS. Tracheal carbohydrate antigens identified by monoclonal antibodies. *Arch Biochem Biophys.* 1986 Sep; 249(2):363-73.
15. Davis J, Scheinman MM, Ruder MA, Griffin JC, Herre JM, Finkbeiner WE, Chin MC, Eldar M. Ablation of cardiac tissues by an electrode catheter technique for treatment of ectopic supraventricular tachycardia in adults. *Circulation.* 1986 Nov; 74(5):1044-53.
16. Lazarus SC, DeVinney R, McCabe LJ, Finkbeiner WE, Elias DJ, Gold WM. Isolated canine mastocytoma cells: propagation and characterization of two cell lines. *Am J Physiol.* 1986 Dec; 251(6 Pt 1):C935-44.
17. Finkbeiner WE, Nadel JA, Basbaum CB. Establishment and characterization of a cell line derived from bovine tracheal glands. *In Vitro Cell Dev Biol.* 1986 Oct; 22:561-67.
18. de Araujo LM, Schmidt KG, Silverman NH, Finkbeiner WE. Prenatal detection of truncus arteriosus by ultrasound. *Pediatr Cardiol.* 1987; 8(4):261-3.
19. Widdicombe JH, Coleman DL, Finkbeiner WE, Friend DS. Primary cultures of the dog's tracheal epithelium: fine structure, fluid, and electrolyte transport. *Cell Tissue Res.* 1987 Jan; 247(1):95-103.
20. Garrett JS, Wikman-Coffelt J, Sievers R, Finkbeiner WE, Parmley WW. Verapamil prevents the development of alcoholic dysfunction in hamster myocardium. *J Am Coll Cardiol.* 1987 Jun; 9(6):1326-31.
21. Schmiedl U, Moseley ME, Sievers R, Ogan MD, Chew WM, Engeseth H, Finkbeiner WE, Lipton MJ, Brasch RC. Magnetic resonance imaging of myocardial infarction using albumin-(Gd-DTPA), a macromolecular blood-volume contrast agent in a rat model. *Invest Radiol.* 1987 Sep; 22(9):713-21.
22. Ruder MA, Davis JC, Eldar M, Finkbeiner W, Scheinman MM. Effects of catheter-delivered electrical discharges near the tricuspid anulus in dogs. *J Am Coll Cardiol.* 1987 Sep; 10(3):693-701.
23. de Araujo LM, Silverman NH, Filly RA, Golbus MS, Finkbeiner WE, Schmidt KG. Prenatal detection of left atrial isomerism by ultrasound. *J Ultrasound Med.* 1987 Nov; 6(11):667-70.
24. Paul A, Picard J, Mergey M, Veissiere D, Finkbeiner WE, Basbaum CB. Glycoconjugates secreted by bovine tracheal serous cells in culture. *Arch Biochem Biophys.* 1988 Jan; 260(1):75-84.
25. Webb WR, Stein MG, Finkbeiner WE, Im JG, Lynch D, Gamsu G. Normal and diseased isolated lungs: high-resolution CT. *Radiology.* 1988 Jan; 166(1 Pt 1):81-7.
26. Stein MG, Demarco T, Gamsu G, Finkbeiner W, Golden JA. Computed tomography: pathologic correlation in lung disease due to tocainide. *Am Rev Respir Dis.* 1988 Feb; 137(2):458-60.

27. Finkbeiner WE, Basbaum CB. Monoclonal antibodies directed against human airway secretions. Localization and characterization of antigens. *Am J Pathol.* 1988 May; 131(2):290-7.
28. Wendland MF, White RD, Derugin N, Finkbeiner WE, McNamara MT, Moseley ME, Lipton MJ, Higgins CB. Characterization of high-energy phosphate compounds during reperfusion of the irreversibly injured myocardium using ³¹P MRS. *Magn Reson Med.* 1988 Jun; 7(2):172-83.
29. Gruenert DC, Basbaum CB, Welsh MJ, Li M, Finkbeiner WE, Nadel JA. Characterization of human tracheal epithelial cells transformed by an origin-defective simian virus 40. *Proc Natl Acad Sci U S A.* 1988 Aug; 85(16):5951-5.
30. Franklin JO, Langberg JJ, Oeff M, Finkbeiner WE, Herre JM, Griffin JC, Scheinman MM. Catheter ablation of canine myocardium with radiofrequency energy. *Pacing Clin Electrophysiol.* 1989 Jan; 12(1 Pt 2):170-6.
31. Madison JM, Basbaum CB, Brown JK, Finkbeiner WE. Characterization of beta-adrenergic receptors in cultured bovine tracheal gland cells. *Am J Physiol.* 1989 Feb; 256(2 Pt 1):C310-4.
32. Sommerhoff CP, Caughey GH, Finkbeiner WE, Lazarus SC, Basbaum CB, Nadel JA. Mast cell chymase. A potent secretagogue for airway gland serous cells. *J Immunol.* 1989 Apr 1; 142(7):2450-6.
33. Byrd BF, Finkbeiner W, Bouchard A, Silverman NH, Schiller NB. Accuracy and reproducibility of clinically acquired two-dimensional echocardiographic mass measurements. *Am Heart J.* 1989 Jul; 118(1):133-7.
34. Saeed M, Wagner S, Wendland MF, Derugin N, Finkbeiner WE, Higgins CB. Occlusive and reperfused myocardial infarcts: differentiation with Mn-DPDP--enhanced MR imaging. *Radiology.* 1989 Jul; 172(1):59-64.
35. Wolfe CL, Moseley ME, Wikstrom MG, Sievers RE, Wendland MF, Dupon JW, Finkbeiner WE, Lipton MJ, Parmley WW, Brasch RC. Assessment of myocardial salvage after ischemia and reperfusion using magnetic resonance imaging and spectroscopy. *Circulation.* 1989 Oct; 80(4):969-82.
36. Langer JC, Longaker MT, Crombleholme TM, Bond SJ, Finkbeiner WE, Rudolph CA, Verrier ED, Harrison MR. Etiology of intestinal damage in gastroschisis. I: Effects of amniotic fluid exposure and bowel constriction in a fetal lamb model. *J Pediatr Surg.* 1989 Oct; 24(10):992-7.
37. Hendin BN, Longaker MT, Finkbeiner WE, Roberts LJ, Stern R. Hyaluronic acid deposition in cardiac myxomas: localization using a hyaluronate-specific binding protein. *Am J Cardiovasc Pathol.* 1990; 3(3):209-15.
38. Amar A, Davis RL, Finkbeiner WE, Cogen PH, Feffries IP. An intracranial cause for neonatal pulmonary hypertension. *International Pediatr.* 1990.5:364-66.
39. Sommerhoff CP, Finkbeiner WE. Human tracheobronchial submucosal gland cells in culture. *Am J Respir Cell Mol Biol.* 1990 Jan; 2(1):41-50.
40. Oeff M, Langberg JJ, Franklin JO, Chin MC, Sharkey H, Finkbeiner W, Herre JM, Scheinman MM. Effects of multipolar electrode radiofrequency energy delivery on ventricular endocardium. *Am Heart J.* 1990 Mar; 119(3 Pt 1):599-607.

41. Holt WW, Wendland MF, Derugin N, Finkbeiner WE, Higgins CB. Effect of repetitive brief episodes of cardiac ischemia on ³¹P magnetic resonance spectroscopy in the cat. *Magn Reson Med*. 1990 Jul; 15(1):70-80.
42. Levine JD, Coderre TJ, White DM, Finkbeiner WE, Basbaum AI. Denervation-induced inflammation in the rat. *Neurosci Lett*. 1990 Oct 30; 119(1):37-40.
43. Glick PL, Guglielmo BJ, Winter ME, Finkbeiner W, Turley K. Iodine toxicity secondary to continuous povidone-iodine mediastinal irrigation in dogs. *J Surg Res*. 1990 Nov; 49(5):428-34.
44. Langer JC, Bell JG, Castillo RO, Crombleholme TM, Longaker MT, Duncan BW, Bradley SM, Finkbeiner WE, Verrier ED, Harrison MR. Etiology of intestinal damage in gastroschisis, II. Timing and reversibility of histological changes, mucosal function, and contractility. *J Pediatr Surg*. 1990 Nov; 25(11):1122-6.
45. Longaker MT, Chiu ES, Hendin B, Finkbeiner WE, Stern R. Hyaluronic acid in a cardiac myxoma: a biochemical and histological analysis. *Virchows Arch A Pathol Anat Histopathol*. 1991; 418(5):435-7.
46. Kondo M, Finkbeiner WE, Widdicombe JH. Simple technique for culture of highly differentiated cells from dog tracheal epithelium. *Am J Physiol*. 1991 Aug; 261(2 Pt 1):L106-17.
47. Chin MC, Schuenemeyer T, Finkbeiner WE, Stern RA, Scheinman MM, Langberg JJ. Histopathology of monopolar transcatheter radiofrequency ablation at the mitral valve annulus. *Pace. Pacing and Clinical Electrophysiology*. 1991; 14:1956-60.
48. Langberg JJ, Wonnell T, Chin MC, Finkbeiner W, Scheinman M, Stauffer P. Catheter ablation of the atrioventricular junction using a helical microwave antenna: a novel means of coupling energy to the endocardium. *Pacing Clin Electrophysiol*. 1991 Dec; 14(12):2105-13.
49. Yamaya M, Finkbeiner WE, Widdicombe JH. Altered ion transport by tracheal glands in cystic fibrosis. *Am J Physiol*. 1991 Dec; 261(6 Pt 1):L491-4.
50. Yamaya M, Finkbeiner WE, Widdicombe JH. Ion transport by cultures of human tracheobronchial submucosal glands. *Am J Physiol*. 1991 Dec; 261(6 Pt 1):L485-90.
51. Graham CM, Stern EJ, Finkbeiner WE, Webb WR. High-resolution CT appearance of diffuse alveolar septal amyloidosis. *AJR Am J Roentgenol*. 1992 Feb; 158(2):265-7.
52. Kondo M, Finkbeiner WE, Widdicombe JH. Changes in permeability of dog tracheal epithelium in response to hydrostatic pressure. *Am J Physiol*. 1992 Feb; 262(2 Pt 1):L176-82.
53. Sigal E, Dicharry S, Highland E, Finkbeiner WE. Cloning of human airway 15-lipoxygenase: identity to the reticulocyte enzyme and expression in epithelium. *Am J Physiol*. 1992 Apr; 262(4 Pt 1):L392-8.
54. Finkbeiner WE, Widdicombe JH, Hu L, Basbaum CB. Bovine tracheal serous cell secretion: role of cAMP and cAMP-dependent protein kinase. *Am J Physiol*. 1992 May; 262(5 Pt 1):L574-81.

55. Yamaya M, Finkbeiner WE, Chun SY, Widdicombe JH. Differentiated structure and function of cultures from human tracheal epithelium. *Am J Physiol*. 1992 Jun; 262(6 Pt 1):L713-24.
56. Cozens AL, Yezzi MJ, Chin L, Simon EM, Finkbeiner WE, Wagner JA, Gruenert DC. Characterization of immortal cystic fibrosis tracheobronchial gland epithelial cells. *Proc Natl Acad Sci U S A*. 1992 Jun 1; 89(11):5171-5.
57. Oeff M, Langberg JJ, Chin MC, Finkbeiner WE, Scheinman MM. Ablation of ventricular tachycardia using multiple sequential transcatheter application of radiofrequency energy. *Pacing Clin Electrophysiol*. 1992 Aug; 15(8):1167-76.
58. Gallagher DM, Mendelson T, Krupski WC, Finkbeiner WE. Primary aortoduodenal fistula caused by severe atherosclerosis, not by aneurysm. *Am J Cardiovasc Pathol*. 1993; 4(4):281-5.
59. Kondo M, Finkbeiner WE, Widdicombe JH. Cultures of bovine tracheal epithelium with differentiated ultrastructure and ion transport. *In Vitro Cell Dev Biol*. 1993 Jan; 29A(1):19-24.
60. Vartanian RK, Finkbeiner WE. Endomyocardial biopsy findings in a patient with polymyositis-dermatomyositis. *Cardiovasc Pathol*. 1993; 2:1-5.
61. Fahy JV, Steiger DJ, Liu J, Basbaum CB, Finkbeiner WE, Boushey HA. Markers of mucus secretion and DNA levels in induced sputum from asthmatic and from healthy subjects. *Am Rev Respir Dis*. 1993 May; 147(5):1132-7.
62. Yamaya M, Ohru T, Finkbeiner WE, Widdicombe JH. Calcium-dependent chloride secretion across cultures of human tracheal surface epithelium and glands. *Am J Physiol*. 1993 Aug; 265(2 Pt 1):L170-7.
63. Suman VJ, Tazelaar HD, Bailey K, Melton J, Longaker MT, Stern R, Finkbeiner WE. Are patients with neoplasia at an increased risk for cardiac myxomas? *Hum Pathol*. 1993 Sep; 24(9):1008-11.
64. Aris R, Christian D, Tager I, Ngo L, Finkbeiner WE, Balmes JR. Effects of nitric acid gas alone or in combination with ozone on healthy volunteers. *Am Rev Respir Dis*. 1993 Oct; 148(4 Pt 1):965-73.
65. Jiang C, Finkbeiner WE, Widdicombe JH, McCray PB, Miller SS. Altered fluid transport across airway epithelium in cystic fibrosis. *Science*. 1993 Oct 15; 262(5132):424-7.
66. Finkbeiner WE, Carrier SD, Teresi CE. Reverse transcription-polymerase chain reaction (RT-PCR) phenotypic analysis of cell cultures of human tracheal epithelium, tracheobronchial glands, and lung carcinomas. *Am J Respir Cell Mol Biol*. 1993 Nov; 9(5):547-56.
67. Aris RM, Christian D, Heame PQ, Kerr K, Finkbeiner WE, Balmes JR. Ozone-induced airway inflammation in human subjects as determined by airway lavage and biopsy. *Am Rev Respir Dis*. 1993 Nov; 148(5):1363-72.
68. Wine JJ, Finkbeiner WE, Haws C, Krouse ME, Moon S, Widdicombe JH, Xia Y. CFTR and other Cl⁻ channels in human airway cells. *Jpn J Physiol*. 1994; 44 Suppl 2:S199-205.

69. Cozens AL, Yezzi MJ, Kunzelmann K, Ohrui T, Chin L, Eng K, Finkbeiner WE, Widdicombe JH, Gruenert DC. CFTR expression and chloride secretion in polarized immortal human bronchial epithelial cells. *Am J Respir Cell Mol Biol*. 1994 Jan; 10(1):38-47.
70. Hasegawa H, Lian SC, Finkbeiner WE, Verkman AS. Extrarenal tissue distribution of CHIP28 water channels by in situ hybridization and antibody staining. *Am J Physiol*. 1994 Apr; 266(4 Pt 1):C893-903.
71. Haws C, Finkbeiner WE, Widdicombe JH, Wine JJ. CFTR in Calu-3 human airway cells: channel properties and role in cAMP-activated Cl⁻ conductance. *Am J Physiol*. 1994 May; 266(5 Pt 1):L502-12.
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73. Steiger D, Fahy J, Boushey H, Finkbeiner WE, Basbaum C. Use of mucin antibodies and cDNA probes to quantify hypersecretion in vivo in human airways. *Am J Respir Cell Mol Biol*. 1994 May; 10(5):538-45.
74. Lee MA, Dae MW, Langberg JJ, Griffin JC, Chin MC, Finkbeiner WE, O'Connell JW, Botvinick E, Scheinman MM, Rosenqvist M. Effects of long-term right ventricular apical pacing on left ventricular perfusion, innervation, function and histology. *J Am Coll Cardiol*. 1994 Jul; 24(1):225-32.
75. Finkbeiner WE, Shen BQ, Widdicombe JH. Chloride secretion and function of serous and mucous cells of human airway glands. *Am J Physiol*. 1994 Aug; 267(2 Pt 1):L206-10.
76. Finkbeiner WE, Widdicombe JH: Serial propagation of cells from human tracheobronchial glands. *In Vitro Cell Devel Biol*: 30A:817-818, 1994.
77. Moser KM, Fedullo PF, Finkbeiner WE, Golden J. Do patients with primary pulmonary hypertension develop extensive central thrombi? *Circulation*. 1995 Feb 1; 91(3):741-5.
78. Eisenberg SJ, Scheinman MM, Dullet NK, Finkbeiner WE, Griffin JC, Eldar M, Franz MR, Gonzalez R, Kadish AH, Lesh MD. Sudden cardiac death and polymorphous ventricular tachycardia in patients with normal QT intervals and normal systolic cardiac function. *Am J Cardiol*. 1995 Apr 1; 75(10):687-92.
79. Finkbeiner WE, Zlock LT, Carrier SD, Chun SY, Watt L, Chow A. Expression of airway secretory epithelial functions by lung carcinoma cells. *In Vitro Cell Dev Biol Anim*. 1995 May; 31(5):379-86.
80. Shen BQ, Mrsny RJ, Finkbeiner WE, Widdicombe JH. Role of CFTR in chloride secretion across human tracheal epithelium. *Am J Physiol*. 1995 Nov; 269(5 Pt 1):L561-6.
81. Cha I, Adzick NS, Harrison MR, Finkbeiner WE. Fetal congenital cystic adenomatoid malformations of the lung: a clinicopathologic study of eleven cases. *Am J Surg Pathol*. 1997 May; 21(5):537-44.
82. Balmes JR, Aris RM, Chen LL, Scannell C, Tager IB, Finkbeiner W, Christian D, Kelly T, Hearne PQ, Ferrando R, Welch B. Effects of ozone on normal and potentially sensitive human subjects. Part I: Airway inflammation and responsiveness to ozone in normal and asthmatic subjects. *Res Rep Health Eff Inst*. 1997 Jun; (78):1-37; discussion 81-99.

83. Jiang C, Finkbeiner WE, Widdicombe JH, Miller SS. Fluid transport across cultures of human tracheal glands is altered in cystic fibrosis. *J Physiol.* 1997 Jun 15; 501 (Pt 3):637-47.
84. LeDizet M, Beck JC, Finkbeiner WE. Differential regulation of centrin genes during ciliogenesis in human tracheal epithelial cells. *Am J Physiol.* 1998 Dec; 275(6 Pt 1):L1145-56.
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2. Verkman AS, Sullivan S, Salinas D, Levin M, Haggie P, Finkbeiner WE, Nielson: Submucosal gland dysfunction in CF. Ped Pulmonol (Suppl 29):177-178, 2006.

OTHER CREATIVE ACTIVITIES

1. 1982. UCSF teaching collection of congenital cardiac malformations. This collection of numerous examples of congenital heart disease that I developed (now administered by Dr. P. Ursell) is currently used for instruction of pediatric cardiology fellows, pediatric thoracic surgeons, cardiology fellows, pathology residents and medical students.
2. 1989. UCSF teaching collection of gross pathology specimens. This collection is still used extensively for teaching pathology residents, and medical, dental, pharmacy, and physical therapy students.
3. 2002. Gold, WM, Murray, JF, Nadel JA (Eds): Atlas of Procedures in Respiratory Medicine, Saunders, Philadelphia pp. 1-34, 2002. This book is designed to supplement and complement Murray and Nadel's Textbook of Respiratory Medicine by providing practicing chest physicians, internists, graduate physicians-in-training, medical students an illustrated textbook of respiratory medicine./> Contributions: I contributed first three chapters of this book: (Morphological Procedures In Respiratory Anatomy And Pathology, pp. 1-34; Respiratory Anatomy pp. 35-74 (with J. Wu); Respiratory Pathology, pp. 75-144). These chapters represent approximately 30% of the book.
4. 2004-2016. Finkbeiner WE, Ursell PC, Davis RL: Autopsy Pathology: A Manual and Atlas. Churchill Livingstone (Elsevier), 2004 and Saunders (Elsevier), 2009, 2nd edition. Connolly AJ, Finkbeiner WE, Ursell PC, Davis RL: Autopsy Pathology: A Manual and Atlas. Elsevier, 2015, 3rd edition./> Contributions: Conceived project, primary author of 11 of 14 chapters and two appendices. Edited remaining 3 chapters. A second, expanded edition was published in early 2009. In the second edition, I was primary author of 9 of 15 chapters and two appendices and edited the remaining six chapters. This is an up-to-date, best-selling reference work of postmortem technique that is used internationally for training pathology residents and pathology assistants. The first edition was translated into Portuguese. The second edition was translated into Chinese. The recently published third edition now includes a detailed atlas of autopsy microscopic findings.
5. 2012. Preparing new cardiovascular and pulmonary gross specimens for 2012-2013 Major Organs System Course, UCSF School of Medicine.
6. 2013. In this pilot project supported in part by a UCSF Interprofessional Grant from the Joint Library/IPE Instructional Grants Program, we developed safe and effective teaching aids for gross human organ pathology and neuroanatomy. Initially, we have focused on producing paper-mounted organ sections for use in teaching neuroanatomy and pulmonary pathology produced 94 sections of normal brain from various sites including normal 6 complete sets of coronal sections that progress from frontal lobe to occipital lobe

from two brain specimens. We have produced greater than 150 sections of diseased lungs. Diseases represented include but are not limited to emphysema, cystic fibrosis, idiopathic pulmonary fibrosis, bacterial pneumonia, mycobacterium infection and viral pneumonia. We have produced over 100 paper-mounted sections from other organs demonstrating various pathological processes including but not limited to: brain (Alzheimer disease, hydrocephalus); heart (myocardial infarct, myocardial hypertrophy); liver (cirrhosis); colon (adenocarcinoma); kidney (renal cell carcinoma; horseshoe kidney with polycystic disease); spleen (Mycobacterium avium complex).

7. 2016-2018. We continued our work with paper-mounted organ sections and have produced specific organ sections that were used as teaching aids in the newly designed pathology small group sessions developed for the new UCSF Bridge Medical School Curriculum. T

INVENTIONS:

1. Transformed Cystic Fibrosis Cells (UC Case No: 1988-C71)
2. Airway Mucus Secretion Assay (UCSF Case No: SF97-061).
3. Canine Mastocytoma Cells (UCSF Case No: 2005-033).