



Jeffrey J. Wine

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Psychology

CONTACT INFORMATION

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Bio

BIO

I began my career as a neuroscientist studying how neural circuits produce behavior, but changed interests in mid-career to study cystic fibrosis (CF), with the goal of ameliorating the symptoms in people who have CF. I direct the Cystic Fibrosis Research Laboratory at Stanford. We discovered that a specific kind of sweating is rate-limited by CFTR--the anion channel product of the CF gene. We demonstrated that airway glands, which produce antibiotic-rich mucus that helps protect the airways, display a profound secretory defect in cystic fibrosis. Current research uses sweat secretion as a sensitive assay of CFTR function that can be used to assess the efficacy of drugs that improve CFTR function. We also study airway mucociliary clearance, and promote a preventative approach to lung infections in people with CF.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Psychology
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Director, Program in Human Biology, Stanford, (2003-2006)

PROFESSIONAL EDUCATION

- Ph.D., UCLA , Physiological Psychology (1971)

LINKS

- Cystic Fibrosis Research Laboratory: <https://web.stanford.edu/group/CFRL/>
- Personal website: <http://web.stanford.edu/~wine/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

The goal is to understand how a defective ion channel leads to the human genetic disease cystic fibrosis. Studies of ion channels and ion transport involved in gland fluid transport. Methods include SSCP mutation detection and DNA sequencing, protein analysis, patch-clamp recording, ion-selective microelectrodes, electrophysiological analyses of transmembrane ion flows, isotopic metho

CLINICAL TRIALS

- (Study: Vertex IIS) Does Ivacaftor Alter Wild Type CFTR-Open Probability In The Sweat Gland Secretory Coil?, Not Recruiting

Publications

PUBLICATIONS

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- **Combined agonists act synergistically to increase mucociliary clearance in a cystic fibrosis airway model.** *Scientific reports*
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- **High-Efficiency, Selection-free Gene Repair in Airway Stem Cells from Cystic Fibrosis Patients Rescues CFTR Function in Differentiated Epithelia.** *Cell stem cell*
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2019
- **How to live a long and healthy life with cystic fibrosis: Lessons from the CF ferret.** *Journal of cystic fibrosis : official journal of the European Cystic Fibrosis Society*
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2018
- **Ivacaftor restores CFTR-dependent sweat gland fluid secretion in cystic fibrosis subjects with S945L alleles** *JOURNAL OF CYSTIC FIBROSIS*
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- **The magnitude of ivacaftor effects on fluid secretion via R117H-CFTR channels: Human in vivo measurements** *PLOS ONE*
Char, J. E., Dunn, C., Davies, Z., Milla, C., Moss, R. B., Wine, J. J.
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- **Inhibition of airway surface fluid absorption by cholinergic stimulation.** *Scientific reports*
Joo, N. S., Krouse, M. E., Choi, J. Y., Cho, H., Wine, J. J.
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- **Airway Gland Structure and Function.** *Physiological reviews*
Widdicombe, J. H., Wine, J. J.
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- **Mucociliary clearance and submucosal gland secretion in the ex vivo ferret trachea.** *American journal of physiology. Lung cellular and molecular physiology*
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Jeong, J. H., Hwang, P. H., Cho, D., Joo, N. S., Wine, J. J.
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