

CURRICULUM VITAE

J. KEVIN FOSKETT

BUSINESS ADDRESS: Department of Physiology
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CITIZENSHIP: U.S.

EDUCATION:

1974	B.S., Duke University
1977	M.S., University of South Carolina
1981	Ph.D., University of California, Berkeley

AWARDS and HONORS:

1977-1981	National Research Service Award (NRSA), Predoctoral Fellowship, Cancer Research Laboratory, University of California, Berkeley
1980-1981	University of California Regents Fellowship
1981	First Place, University of California, Berkeley representative to Council of Graduate Schools in U.S./University Microfilms International Dissertation Award Competition; Finalist, Council of Graduate Schools in the U.S./University Microfilms International Dissertation Award
1982	NIH Postdoctoral Award, NHLB Institute, Laboratory of Kidney and Electrolyte Metabolism, Bethesda, Maryland
1989-1994	Canadian Cystic Fibrosis Foundation Scholar
1989-1994	Kinsmen Marsha Morton Scholar
1995	Designated Ion Channel Lecturer of the Physiological Society, University College, Cork, Ireland
1996	Honorary Master of Arts, University of Pennsylvania
2010	Jane M. Glick Graduate Student Teaching Award, Univ Pennsylvania

2011-2021	MERIT AWARD, National Inst. General Medical Sciences, NIH
2013	Stanley N. Cohen Biomedical Research Award, Univ Pennsylvania
2013-present	Fellow, American Association for the Advancement of Science (AAAS)

RESEARCH EXPERIENCE:

1974-1976	Master's Thesis "Osmoregulation in the larvae and adults of the grapsid crab <u>Sesarma reticulatum Say</u> " University of South Carolina. Supervisor: Dr. F. J. Vernberg
1976-1977	Research Technician, Department of Physiology-Pharmacology, University of South Carolina. Regulation of coronary blood flow using dog perfused heart-lung preparation.
1977-1981	Doctoral Dissertation "Ionic and hormonal modulation of transport across the isolated opercular membrane from the euryhaline teleost, <u>Sarotherodon mossambicus</u> ", University of California, Berkeley. Major Professors: Dr. H. A. Bern and Dr. T. E. Machen
1981-1982	Postdoctoral Fellow, Department of Zoology and Cancer Research Laboratory, University of California, Berkeley. Supervisors: Dr. T. E. Machen and Dr. H. A. Bern
1982	Postdoctoral Fellow, National Heart, Lung, and Blood Institute, Laboratory of Kidney and Electrolyte Metabolism, NIH, Bethesda. Supervisor: Dr. K. Spring
1982-1984	Staff Fellow, National Heart, Lung and Blood Institute, Laboratory of Kidney and Electrolyte Metabolism, NIH, Bethesda, Maryland. Supervisor: Dr. K. Spring
1984-1988	Principal Investigator, Physiology Department, Armed Forces Radiobiology Research Institute, Bethesda, Maryland
1988-1994	Scientist, Division of Cell Biology, Research Institute, The Hospital for Sick Children, Toronto, Ontario, Canada
1993-1995	Associate Professor, Department of Physiology, University of Toronto, Faculty of Medicine, Toronto, Ontario, Canada
1994-1995	Senior Scientist, Division of Cell Biology, Research Institute, The Hospital for Sick Children, Toronto, Ontario, Canada
1995-present	Professor, Department of Physiology, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania

1995-2003	Director, Ion Transport Core, Institute for Human Gene Therapy, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania
1996-2000	Professor, Department of Molecular and Cellular Engineering, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania
2001-present	Professor, Department of Cell and Developmental Biology, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania
2008-2013	Vice-Chair, Department of Physiology, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania
2008-present	Isaac Ott Professor of Physiology, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania
2013-present	Visiting Professor, Kyoto Prefectural University of Medicine, Kyoto, Japan
2013-present	Chair, Department of Physiology, University of Pennsylvania, Perelman School of Medicine, Philadelphia, Pennsylvania

TEACHING EXPERIENCE

1990-1995	Supervisor, Ph.D. and Masters students, Depts. Pharmacology and Physiology, University of Toronto.
1989-present	Supervisor, numerous undergraduate summer research and senior thesis students; graduate rotation students; graduate students
1990-1995	Lecturer, Dept. Physiology, Univ. Toronto
1996-2003	Course Founder and Director, CELL BIOLOGY and BIOCHEMISTRY (BIOM600), Univ. Pennsylvania
1995-2001	Lecturer, Medical Physiology: GI Physiology. Univ Pennsylvania
1996-present	Lecturer, Cell Biology and Biochemistry, Univ. Pennsylvania Lecturer, Human Physiology, Univ. Pennsylvania Lecturer, Topics in Cell Biology and Physiology, Univ. Pennsylvania
1999-2000	Biomedical Graduate School Curriculum Reform Task Force, Univ Pennsylvania
2005	Guest Instructor (6 lectures), Doctoral Program in Experimental Biology and Biomedicine course in Molecular Cell Biology, University of Coimbra, Coimbra, Portugal
2006-2012	Executive Committee, Cell and Molecular Biology Graduate Group

2007-present	Course Founder and Director, HUMAN PHYSIOLOGY (CAMB532)
2007-2008	Vice-Chair, Cell Biology and Physiology Graduate Subgroup
2008-2011	Chair, Cell Biology and Physiology Graduate Subgroup
2009-2012	Curriculum Committee, Biomedical Graduate Studies

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science
Society of General Physiologists
American Physiological Society
Biophysical Society
Society for Neuroscience
American Society for Biochemistry and Molecular Biology
Association for Chemoreception Sciences
European Calcium Society

PROFESSIONAL RESPONSIBILITIES

1. **Reviewer** for the following journals and granting agencies

National Institutes of Health	EMBO Journal
National Science Foundation	Journal of Cell Biology
Canadian Cystic Fibrosis Fndtn	Current Biology
Wellcome Foundation	Science
Cystic Fibrosis Research Institute	Science Signaling
Calif Breast Cancer Res. Initiative	Journal of Cellular Physiology
US Cystic Fibrosis Fndtn.	Journal of General Physiology
Alzheimer's Association	PLOS Journals
Universita' degli Studi di Padova	Journal of Membrane Biology
Medical Research Council	Journal of Physiology
Department of Veteran Affairs	Neurobiology of Aging
Developmental Cell	PNAS
Biophysical Journal	Cell
Cell Calcium	Molecular Cell
Journal of Immunology	Journal of Biological Chemistry
Journal of Experimental Biology	Journal of Neuroscience
Journal of Clinical Investigation	American Journal of Physiology
Nature Journals	Biochimica et Biophysica Acta
Journal of Molec Cell Cardiology	Biological Bulletin

2. **Study Sections**

Regular Member, Instrument and Instrument Development Study Section, NSF, 1988-1990.

Regular Member, Shared Instrumentation Program Study Section, NIH, 1988-1990.

Ad Hoc Review Committee member, NIH, 1991, 1994, 1995, 1997-2000, 2002-2004, 2006-2013.

Ad Hoc Review Committee member, Cystic Fibrosis Foundation, 2003.

Member, Board of Scientific Councilors of the NHLBI, 2002-2006.

Ad Hoc Review Committee Member, Dept Veteran Affairs, 2013

3. Editorial Positions

Associate Editor, American Journal of Physiology: Cell, 1995-2002.

Editorial Advisory Board, American Journal of Physiology: Cell, 2002-2012.

Associate Editor, American Journal of Kidney Diseases, 1997-2001.

Associate Editor, Pulmonary Pharmacology, 1992-2004.

Associate Editor, Experimental Physiology, 1994-2004.

Editorial Boards: American Journal of Physiology: Cell, 1990-1995.

Journal of Biological Chemistry, 2007-2012.

Physiological Reviews, 2008-present.

Journal of General Physiology, 2008-present.

4. National Committee Memberships

Councilor, Society of General Physiologists, 1999-2002.

Member, American Physiological Society Epithelial Transport Group Steering Committee, 1999-2000.

President, Society of General Physiologists, 2007-2008.

5. Meeting Organization

Co-chair and Organizer, workshop on "Fluorescence Methods to Measure Intracellular Calcium", American Society of Nephrology Annual Meeting, 1987.

Organizer, Symposium " CFTR the Link: Ion Transport and Epithelial Biology", North American Cystic Fibrosis Meeting, 2000.

Organizer, Symposium "Molecular Basis of Local Calcium Signaling", APS, FASEB Meeting, 2002.

Co-Organizer, International Workshop on Calcium Release and Cellular Calcium Signaling Domains, Marbella, CHILE 2003.

Co-Chair, Gordon Conference on Calcium Signaling, 2009.

Chair, Gordon Conference on Calcium Signaling, 2011.

6. Other

Consultant, Aurora Biosciences/Vertex Pharmaceuticals - Cystic Fibrosis Foundation Collaboration, 2000-2003 (led directly to the development of the first drug for cystic fibrosis that targets the basic defect).

Consultant, Galapagos/Biofocus - Cystic Fibrosis Foundation Collaboration, 2005-2009.

Consultant, PREDIX/Epix - Cystic Fibrosis Foundation Collaboration, 2005-2009.

External Reviewer, Department of Pharmacology & Physiology, Rutgers New Jersey Medical School, 2014

7. University of Pennsylvania Administrative Responsibilities

School of Medicine Space Committee (2014-present)

Penn Medicine Awards of Excellence Selection Committee: Stanley N. Cohen

Biomedical Research Award (2014-present).

Search Committee, Dept Physiology (2014)

Search Committee, Chair of Neuroscience (2012-2013)

Cell Biology Microscopy Core Advisory Committee (2011-present)

Jane Glick Teaching Award Committee (2013-present)

Search Committee, Director, Center for Orphan Disease Research (2011-2012)

School of Medicine Strategic Planning Committee (2011-2012)

Search Committee, Department of Developmental and Cell Biology (2011-2012)

Search Committee, Chair, Cancer Biology (2008)

Medical Faculty Senate Advisory Committee (2006-2007)

Search Committee, Cystic Fibrosis Center Director, CHOP (2005-2006)

Penn Medicine Research Space Vision Committee (2006)

BGS Curriculum Reform Task Force (1999-2000)

Search Committee, Department of Cellular and Molecular Engineering (1996)

Search Committee, Cell and Developmental Biology (1995-1996)

RESEARCH SUPPORT

ACTIVE

R37 GM56328 (Foskett) "Electrophysiology of nuclear membrane InsP₃ receptor"

Agency: NIH

Period: 04/01/2007-03/31/2021

\$250,000/yr

R01 MH059937 (Foskett) "Molecular physiology of mammalian InsP₃ receptors"

Agency: NIH

Period: 2005-2015

\$250,000/yr

R01 DC012538 (Foskett, Ma) "Role of CALHM1 ion channel in taste transduction"

Agency: NIH

Period: 4/1/13-5/31/18

\$212,500/yr

PENDING

R21 NS085328-01 (Neumar, Foskett) **“Targeting the mitochondrial calcium uniporter in neuronal reperfusion injury”**

Agency: NIH Period: 9/13-8/15 \$175,000/yr (proposed)

COMPLETED (Last 3 years)

R01 GM065830-06 (Pearson, Parker, Foskett, Mak, Shuai, co-PIs) **“Multiscale observation and modeling of IP₃/Ca signaling”**

Agency: NIH Period: 2009-2013

FOSKETT11G0 (Foskett) **“Restoration of cAMP-mediated fluid secretion in CF submucosal glands”**

Agency: Cystic Fibrosis Foundation Period: 4/1/11-3/31/13 \$90,000/yr

R21 NS072775 (Foskett, Lamitina) **“Physiological and Genetic Analysis of Calhm1 function in *C. elegans*”**

Agency: NIH Period: 9/30/10-08/31/12.

A2008-137 (Foskett) **“IP₃R-Presenilin Interaction: Calcium Dysregulation in AD”**

Agency: American Health Assistance Foundation Period: 04/08-03/11.

“CF pathophysiology and new therapies RDP-CFF II” (Wilson)

Agency: Cystic Fibrosis Foundation Period: 7/1/07-6/30/11

PUBLICATIONS

BOOKS:

Foskett, J. K. and Grinstein, S., eds., **Non-Invasive Techniques in Cell Physiology**. Modern Cell Biology Series. A. Liss, New York. 1990.

PAPERS:

1. Foskett, J. K. 1977. Osmoregulation in the larvae and adults of the grapsid crab Sesarma reticulatum Say. **Biol. Bull.** 153:505-526.

2. Bern, H. A., C. A. Bisbee, N. L. Collie, J. K. Foskett, B. Hughes, C. A. Loretz and W. S. Marshall. 1981. Failure of ovine prolactin to elicit rapid responses by osmoregulatory surfaces. **Gen. Comp. Endocr.** 44:128-130.
3. Foskett, J. K., C. D. Logsdon, T. Turner, T. E. Machen and H. A. Bern. 1981. Differentiation of the chloride extrusion mechanism during seawater adaptation of the teleost fish, the cichlid, *Sarotherodon mossambicus*. **J. Exp. Biol.** 93:209-224.
4. Loretz, C. A., H. A. Bern, J. K. Foskett and J. R. Mainoya. 1981. The caudal neurosecretory system and osmoregulation in fish. In: **Neurosecretion: Molecules, Cells, Systems**. D.S. Farner and K. Lederis, eds. Plenum Press, N.Y., pp. 319-328.
5. Foskett, J. K., G. M. Hubbard, T. E. Machen and H. A. Bern. 1982. Effects of epinephrine, glucagon and vasoactive intestinal polypeptide on chloride secretion by teleost opercular membrane. **J. Comp. Physiol.** 146:27-34.
6. Foskett, J. K., T. E. Machen and H. A. Bern. 1982. Chloride secretion and conductance of teleost opercular membranes: effects of prolactin. **Am. J. Physiol.** 242:R380-R389.
7. Foskett, J. K. and C. Scheffey. 1982. The chloride cell: definitive identification as the salt-secretory cell in teleosts. **Science** 215:164-166.
8. Scheffey, C., J. K. Foskett and T. E. Machen. 1983. Localization of ionic pathways in the teleost opercular membrane by extracellular recording with a vibrating probe. **J. Memb. Biol.** 75:193-203.
9. Foskett, J. K., T. E. Machen, H. A. Bern and M. Conner. 1983. Chloride cells and the hormonal control of teleost fish osmoregulation. **J. Exp. Biol.** 106(Review Vol. 5):255-281.
10. Foskett, J. K. and K. R. Spring. 1985. Involvement of Ca and cytoskeleton in gallbladder epithelial cell volume regulation. **Am. J. Physiol.** 248:C27-C36.
11. Foskett, J. K. and T. E. Machen. 1985. Vibrating probe analysis of steady state variability and hormone responsiveness: correlation between conductances of active transport and leak pathways associated with individual chloride cells. **J. Memb. Biol.** 85:25-35.
12. Foskett, J. K. 1985. NBD-aurine fluorescence as a probe of anion exchange in gallbladder epithelial cells. **Am. J. Physiol.** 249:C56-C62.
13. Foskett, J. K. and H. Ussing. 1986. Localization of chloride conductance to mitochondria-rich cells in frog skin epithelium. **J. Memb. Biol.** 91:251-258.
14. Foskett, J. K. 1987. The chloride cell: Multiple hormonal control of teleost gill salt secretion. In: **Comparative Physiology of Environmental Adaptations**. R. Kirsch and B. Lahlon, eds. Karger, Basel, pp. 83-91.

15. Foskett, J. K. 1988. Simultaneous Nomarski and fluorescence imaging during video microscopy of cells. **Am. J. Physiol.** 255:C566-C571.
16. Foskett, J. K. and C. Scheffey. 1989. Scanning electrode localization of transport pathways in epithelial tissues. **Methods in Enzymol.** 171:792-816.
17. Foskett, J. K., P. J. Gunter-Smith, J. E. Melvin and R. J. Turner. 1989. Physiological localization of an agonist-sensitive pool of Ca^{2+} in parotid acinar cells. **Proc. Nat. Acad. Sci.** 86:167-171.
18. Foskett, J. K. and J. E. Melvin. 1989. Activation of salivary secretion: coupling of cell volume and $[\text{Ca}^{2+}]_i$ in single cells. **Science** 244:1582-1585.
19. Grinstein, S. and J. K. Foskett. 1990. Ionic mechanisms of cell volume regulation in leukocytes. **Ann. Rev. Physiol.** 52:399-414.
20. Foskett, J. K. 1990. Optical studies of ion and water transport in single cells. In: **Non-Invasive Techniques in Cell Physiology**. J.K. Foskett and Grinstein, S. eds. **Modern Cell Biol.**, Liss: New York, pp. 237-272.
21. Foskett, J. K. 1990. $[\text{Ca}^{2+}]_i$ modulation of Cl^- content controls cell volume in single salivary acinar cells during fluid secretion. **Am. J. Physiol.** 259:C998-C1004.
22. Foskett, J. K., C. M. Roifman and D. Wong. 1991. Activation of calcium oscillations by thapsigargin in parotid acinar cells. **J. Biol. Chem.** 266:2778-2782.
23. Foskett, J. K. and D. Wong. 1991. $[\text{Ca}^{2+}]_i$ oscillations in thapsigargin-treated parotid acinar cells are caffeine- and ryanodine sensitive. **J. Biol. Chem.** 266:14535-14538.
24. Rommens, J. M., S. Dho, C. E. Bear, N. Kartner, D. Kennedy, J. R. Riordan, L.-C. Tsui and J. K. Foskett. 1991. Cyclic-AMP-inducible chloride conductance in mouse fibroblast lines stably expressing human cystic fibrosis transmembrane conductance regulator (CFTR). **Proc. Nat. Acad. Sci.** 88:7500-7504.
25. Wong, M. M. Y. and J. K. Foskett. 1991. Oscillations of cytosolic sodium during calcium oscillations in exocrine acinar cells. **Science** 254:1014-1016.
26. Dho, S., K. Stewart and J. K. Foskett. 1992. Purinergic receptor activation of Cl^- secretion in T84 cells. **Am. J. Physiol.** 262:C67-C74.
27. Foskett, J. K. and D. Wong. 1992. Calcium oscillations in parotid acinar cells induced by microsomal Ca-ATPase inhibition. **Am. J. Physiol.** 262:C656-C663.

28. Dho, S., S. Chou, X.-B. Chang, J. M. Rommens and J. K. Foskett. 1992. Right-angle light-scattering to assay basal and regulated plasma membrane Cl⁻ conductances. **Am. J. Physiol.** 263:C530-C534.
29. Foskett, J. K., M. M. Y. Wong and M. Robertson. 1992. Imaging ion and fluid secretion in single salivary acinar cells. In **Salivary Secretion - Control and Mechanisms**. Murakami, M., Y. Seo and T. Ishikawa, eds. Nat. Inst. Physiol. Sci., Okazaki, pp.73-76.
30. Foskett, J. K. 1993. Simultaneous differential interference contrast and quantitative low-light fluorescence video imaging of cell function. In **Optical Microscopy: Emerging Methods and Applications**. Herman, B and J. J. Lemasters, eds. Academic Press, New York, pp. 237-261.
31. Foskett, J.K. 1993. Optical imaging of ion transport in single living cells. **Comments Mol. Cell. Biophys.** 8:115-135.
32. Dho, S. and J. K. Foskett. 1993. Optical imaging of Cl⁻ permeabilities in normal and CFTR-expressing mouse L cells. **Biochim. Biophys. Acta** 1152:83-90.
33. Wang, X., Y. Marunaka, L. Fedorko, S. Dho, J. K. Foskett and H. O'Brodovich. 1993. Activation of Cl⁻ currents by intracellular chloride in fibroblasts stably expressing the human cystic fibrosis transmembrane conductance regulator. **Can. J. Physiol. Pharm.** 71: 645-649.
34. Dho, S., S. Grinstein and J. K. Foskett. 1993. Plasma membrane recycling in CFTR-expressing CHO cells. **Biochim. Biophys. Acta** 1225:78-82.
35. Grinstein, S., M. Woodside, T. Waddell, G. P. Downey, J. Orlowski, J. Pouyssegur, D. C. P. Wong and J. K. Foskett. 1993. Focal localization of the NHE-1 isoform of the Na⁺/H⁺ antiport. Assessment of functional consequences. **EMBO J.** 12:5209-5218.
36. Foskett, J. K., M. M. M. Wong, G. Sue-A-Quan and M. A. Robertson. 1994. Isosmotic modulation of cell volume and intracellular ion activities during stimulation of single exocrine cells. **J. Exp. Zool.** 268:104-110.
37. Tohda, H., J. K. Foskett, H. O'Brodovich and Y. Marunaka. 1994. Cl⁻ regulation of a Ca²⁺-activated nonselective cation channel in β -agonist-treated fetal distal lung epithelium. **Am. J. Physiol.** 266:C104-C109.
38. Foskett, J. K. 1994. The role of calcium in the control of volume regulatory transport pathways. In **Cellular and Molecular Physiology of Cell Volume Regulation**. Strange, K., ed. CRC Press, Boca Raton, pp. 259-277.
39. Gaisano, H. Y., L. Sheu, J. K. Foskett and W. S. Trimble. 1994. Tetanus toxin-light chain cleaves a vesicle-associated membrane protein (VAMP) isoform 2 in rat pancreatic zymogen granules and inhibits enzyme secretion. **J. Biol. Chem.** 269:17062-17066.

40. Robertson, M. A. and J. K. Foskett. 1994. Na⁺ transport pathways in secretory acinar cells: membrane cross talk mediated by [Cl⁻]_i. **Am. J. Physiol.** 267:C146-C156.
41. Gaisano, H. Y., D. Wong, L. Sheu and J. K. Foskett. 1994. Calcium release by the cholecystokinin analog, CCK-OPE, is inositol trisphosphate-dependent in single rat pancreatic acinar cells. **Am. J. Physiol.** 267:C220-C228.
42. Gaisano, H. Y., D. Wong, L. Sheu and J. K. Foskett. 1994. Suppression of CCK-OPE-induced Ca²⁺ oscillations in rat pancreatic acinar cells by low level protein kinase C activation without transition of CCK receptor from a high- to low-affinity state. **Pflugers Arch.** 427:455-462.
43. Rochwerger, L., S. Dho, L. Parker, J. K. Foskett and M. Buchwald. 1994. Estrogen-dependent expression of the cystic fibrosis transmembrane regulator gene in a novel uterine cell line. **J. Cell Sci.** 107:2439-2448.
44. Robertson, M. A. and J. K. Foskett. 1994. Membrane crosstalk in secretory epithelial cells mediated by intracellular chloride concentration. **Jap. J. Physiol.** 44, Suppl. 2:S309-S315.
45. Mak, D.-O. D. and J. K. Foskett. 1994. Single-channel inositol 1,4,5-trisphosphate receptor currents revealed by patch clamp of isolated *Xenopus* oocyte nuclei. **J. Biol. Chem.** 269:29375-29378.
46. Foskett, J. K. and D. C. P. Wong. 1994. [Ca²⁺]_i inhibition of Ca²⁺ release-activated Ca²⁺ influx underlies agonist- and thapsigargin-induced [Ca²⁺]_i oscillations in salivary acinar cells. **J. Biol. Chem.** 269:31525-31532.
47. Pasyk, E. A. and J. K. Foskett. 1995. Mutant (ΔF508) cystic fibrosis transmembrane conductance regulator Cl⁻ channel is functional when retained in endoplasmic reticulum of mammalian cells. **J. Biol. Chem.** 270:12347-12350.
48. Robertson, M. A. and J. K. Foskett. 1995. Fluorescence measurements of intracellular Na⁺ concentration. In **Methods in Neurosciences**. Kraicer, J. and S. J. Dixon, eds. Academic Press, New York, pp. 274-288.
49. Kent, G., M. Oliver, J. K. Foskett, H. Frndova, P. Durie, J. Forstner, G. G. Forstner, J. R. Riordan, D. Percy and M. Buchwald. 1996. Phenotypic abnormalities in long-term surviving cystic fibrosis mice. **Pediatric Res.** 40:1-9.
50. Robertson, M., M. Woodside, J. K. Foskett, J. Orlowski, and S. Grinstein. 1997. Muscarinic agonists induce phosphorylation-independent activation of the NHE-1 isoform of the Na⁺/H⁺ antiporter in salivary acinar cells. **J. Biol. Chem.** 272:287-294.

51. Pasyk, E. A. and J. K. Foskett. 1997. Cystic fibrosis transmembrane conductance regulator-associated ATP and adenosine 3'-phosphate 5'-phosphosulfate channels in endoplasmic reticulum and plasma membranes. **J. Biol. Chem.** 272:7746-7751.
52. Mak, D.-O. D. and J. K. Foskett. 1997. Single-channel kinetics, inactivation and spatial distribution of inositol trisphosphate (IP₃) receptor in *Xenopus* oocyte nucleus. **J. Gen. Physiol.** 109:571-587. PMCID: PMC2217068
53. Foskett, J. K. 1998. ClC and CFTR chloride channel gating. **Ann. Rev. Physiol.** 60:689-717.
54. Sugita, M. and J. K. Foskett. 1998. CFTR Cl⁻ channel and CFTR-associated ATP channel: distinct pores regulated by common gates. **EMBO J.** 17:898-908.
55. Kosari, F., S. Sheng, J. Li, D.-O. D. Mak, J. K. Foskett and T. R. Kleyman. 1998. Subunit stoichiometry of the epithelial sodium channel. **J. Biol. Chem.** 273:13469-13474.
56. Mak, D.-O. D. and J. K. Foskett. 1998. Effects of divalent cations on single channel conduction properties of *Xenopus* IP₃ receptor. **Am. J. Physiol.** 275:C179-C188.
57. Jiang, Q., D. Mak, S. Devidas, E. M. Schwiebert, A. Bragin, Y. Zhang, W. R. Skach, W. B. Guggino, J. K. Foskett and J. F. Engelhardt. 1998. CFTR associated ATP release is controlled by a "chloride sensor" within the channel pore. **J. Cell Biol.** 143:645-657.
58. Mak, D.-O. D., S. McBride and J. K. Foskett. 1998. Inositol 1,4,5-trisphosphate activation of inositol trisphosphate receptor Ca²⁺ channel by ligand tuning of Ca²⁺ inhibition. **Proc. Nat. Acad. Sci.** 95:15812-15825.
59. Kollen, W. J. W., A. E. Mulberg, X. Wei, M. Sugita, V. Raghuram, J. Wang, J. K. Foskett, M. C. Glick and T. F. Scanlin. 1999. High-efficiency transfer of cystic fibrosis transmembrane conductance regulator cDNA into cystic fibrosis airway cells in culture using lactosylated polylysine as a vector. **Human Gene Therapy** 10:615-622.
60. Mak, D.-O. D., S. McBride and J. K. Foskett. 1999. ATP regulation of type 1 inositol 1,4,5-trisphosphate receptor channel gating by allosteric tuning of Ca²⁺ activation. **J. Biol. Chem.** 274:22231-22237.
61. Foskett, J. K. 2000. Cell Volume Control. In **The Kidney: Physiology and Pathophysiology**. Seldin, D.W. and G. Giebisch, eds. Lippincott-Raven, Philadelphia, pp. 379-390.
62. Sugita, M. and J. K. Foskett. 2000. CFTR: A Chloride Channel Regulator of Ion Channels. In **Membrane Structure in Disease and Drug Therapy**. Zimmer, G., ed., Marcel Dekker, Inc., New York, pp. 439-460.

63. Mak, D.-O. D, S. McBride, V. Raghuram, Y. Yue, S. K. Joseph and J. K. Foskett. 2000. Single channel properties in endoplasmic reticulum membrane of recombinant type 3 inositol trisphosphate receptor. **J. Gen. Physiol.** 115:241-255.
64. Jiang, Q., J. Li, R. Dubroff, Y. J. Ahn, J. K. Foskett, J. Engelhardt, and T. R. Kleyman. 2000. Epithelial sodium channels regulate CFTR chloride channels in *Xenopus* oocytes. **J. Biol. Chem.** 275:13266-13274.
65. Hallows, K. R., V. Raghuram, B. E. Kemp, L.A. Witters and J. K. Foskett. 2000. Inhibition of cystic fibrosis transmembrane conductance regulator by novel interaction with the metabolic sensor AMP-activated protein kinase. **J. Clin. Invest.** 105:1711-1721.
66. Raghuram, V., D.-O. D. Mak and J. K. Foskett. 2001. Regulation of cystic fibrosis transmembrane conductance regulator single-channel gating by bivalent PDZ domain-mediated interaction. **Proc. Nat. Acad. Sci.** 98:1300-1305.
67. Mak, D.-O. D, S. McBride and J. K. Foskett. 2001. ATP-dependent adenophostin activation of InsP₃ receptor channel gating. Kinetic implications for the durations of calcium puffs in cells. **J. Gen. Physiol.** 117:299-314.
68. Boehning, D., D.-O.D. Mak, J. K. Foskett and S. K. Joseph. 2001. Molecular determinants of permeation and selectivity in inositol 1,4,5-trisphosphate receptor Ca²⁺ channels. **J. Biol. Chem.** 276:13509-13512.
69. Mak, D.-O. D, S. McBride and J. K. Foskett. 2001. Regulation by Ca²⁺ and inositol 1,4,5-trisphosphate (InsP₃) of single recombinant type 3 InsP₃ receptor channels. Ca²⁺ activation uniquely distinguishes types 1 and 3 InsP₃ receptors. **J. Gen. Physiol.** 117:435-446.
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- 1989 Physiology Department, Wright State University, Dayton.
- 1989 Biology Department, SUNY, Buffalo.
- 1989 Physiology Department, SUNY, Buffalo.
- 1989 Cystic Fibrosis Telethon, Thunder Bay.
- 1989 Cystic Fibrosis Press Conference, Toronto.
- 1989 Beyond the Gene, U.S. Cystic Fibrosis Foundation. Lake Joseph, Canada.
- 1989 Second International Gastroenteric Biology Conference, Chicago
- 1990 International Society of Nephrology Symposium on Optical Techniques Applicable to Renal Research, Phoenix.
- 1990 Kinsmen Club of Scarborough Annual Dinner, Toronto
- 1990 Kinsmen Regional Dinner, Toronto
- 1990 Cystic Fibrosis Foundation General Meeting (Toronto)
- 1990 Gastroenterology Division, Johns Hopkins University Medical School
- 1990 Receptors, Post-Receptor Events and Signaling. Am. Soc. Nephrology Symposium, Wash. D.C.
- 1991 Physiology Department, University of Michigan Medical School, Ann Arbor.
- 1991 Interactions of Anion and Cation Transport in Cell Volume and pH Regulation. FASEB Symposium, Atlanta.
- 1991 Toward New Therapeutic Treatments for Cystic Fibrosis. U.S. Cystic Fibrosis Foundation, Williamsburg.
- 1991 Cell Volume Regulation: From Bacteria to Mammalian Tissues and Tumors. NIH Symposium, Bethesda.
- 1991 Department of Pharmacology, Cornell University, Ithaca
- 1991 Department of Physiology and Biophysics, Case Western Reserve University, Cleveland.
- 1991 Department of Physiology, University of Iowa, Iowa City.
- 1991 Department of Physiology, Cornell Univ. Medical School, New York.
- 1991 Department of Cell Biology, Duke University, Durham.
- 1991 Department of Respiratory Research, University of North Carolina, Chapel Hill.
- 1992 Symposium on Volume Regulation: Mechanisms and Control. Cambridge, England.
- 1992 International Workshop on Salivary Secretion. Okazaki, Japan.
- 1992 Department of Physiology, Tufts University, Boston.
- 1992 Department of Physiology, University Ontario, London.
- 1992 Optical Wizardry in Cell Biology. Am Soc. Nephrology Symposium, Baltimore.
- 1992 Symposium on Biological Oscillators, Soc. Research on Circadian Rhythms, Jacksonville.
- 1992 Department of Physiology, University of Arizona, Tucson.
- 1992 Endocrinology Program Visiting Scientist, Univ. Hawaii Marine Biological Lab., Kaneohe.
- 1993 Calcium Signals in Exocrine Cells, International Union of Physiological Sciences, Glasgow, Scotland.

- 1993 International Symposium on Exocrine Secretion, Freiburg, Germany.
- 1993 Department of Biophysics, University of Rochester, NY.
- 1994 West Coast Salt and Water Club Featured Speaker, Mauro Bay, CA.
- 1994 Department of Physiology, University of Pennsylvania, Philadelphia.
- 1994 Department of Pharmacological and Physiological Sciences, University of Chicago.
- 1995 FEBS Course on Membrane Biochemistry, Budapest.
- 1995 Symposium on Signal Transduction In Epithelial Cells, International Gastroenteric Biology Conference, San Diego.
- 1995 Symposium on Ion Transport in Health and Disease, Physiological Society, University College, Cork, Ireland.
- 1995 Designated Ion Channel Lecturer of the Physiological Society, University College, Cork, Ireland.
- 1995 Department of Physiology, Univ. Texas Southwestern Medical Center, Dallas.
- 1995 Department of Physiology, Emory University, Atlanta.
- 1996 Division of Gastroenterology, Johns Hopkins University, Baltimore.
- 1996 A.I. duPont Institute, Wilmington.
- 1996 Cystic Fibrosis Foundation Meeting, Williamsburg.
- 1996 East Coast Salt and Water Club, Philadelphia.
- 1996 Department of Bioengineering, University of Pennsylvania, Philadelphia.
- 1996 Symposium on Cellular and Molecular Membrane Transport, Mt. Desert Island, ME.
- 1996 Dept. Physiology, Yale University, New Haven.
- 1996 East Coast Salt and Water Club, Baltimore.
- 1996 Symposium on Regulation of CFTR, North American CF Conference, Orlando.
- 1997 Department of Biochemistry, University of Alberta, Edmonton.
- 1997 Department of Physiology, Wright State University, Dayton.
- 1997 Geisinger Clinic, Danville.
- 1997 Cystic Fibrosis Foundation Meeting, Williamsburg.
- 1997 Dept. of Physiology, Allegheny Univ. of the Health Sciences, Philadelphia
- 1997 Symposium on Adv. Membrane Transport, Biophysical Society, Beaufort, NC
- 1998 Dept. Physiology and Biophysics, University of Alabama, Birmingham.
- 1998 Symposium on Shannon Legacy of Renal Research at NHLBI, NIH, Bethesda
- 1998 Cystic Fibrosis Foundation Meeting, Williamsburg.
- 1998 Symposium on "Ion Channels Modulating the CF Phenotype", North American CF Conference, Montreal.
- 1999 Department of Medicine, Vanderbilt University, Nashville.
- 1999 Dept. Molecular and Cellular Pharmacology, University of Miami, Miami.
- 1999 Dept. Physiology, University of Rochester, Rochester.
- 1999 Cystic Fibrosis Foundation Meeting, Williamsburg.
- 1999 Gordon Conference on Calcium Signaling, New Hampshire.
- 1999 Dept. Physiology, Tufts University, Boston.
- 2000 Dept Physiology, University of Arizona, Tucson.
- 2000 Dept Physiology and Biophysics, University of Texas, Galveston.
- 2000 Cystic Fibrosis Foundation Meeting, Williamsburg.
- 2000 Symposium "CFTR the Link: Ion Transport and Epithelial Biology", North American Cystic Fibrosis Conf., Baltimore.
- 2000 Protein Interaction Core Facility Retreat, University of Pennsylvania.

- 2001 Department of Cell Biology and Physiology, University of Pittsburg.
- 2001 Department of Biochemistry, Dartmouth University.
- 2001 Cystic Fibrosis Foundation Meeting, Williamsburg.
- 2001 Symposium "Electrolyte Transport across Exocrine Epithelia", Sydney, AUS.
- 2001 Symposium "Regulation of Epithelial Secretion", IUPS, Christchurch, NZ.
- 2001 Department of Physiology, University of Nevada, Reno.
- 2002 Department of Molecular Medicine, Oregon Health Sciences University.
- 2002 Department of Biophysics and Physiology, Cornell University, New York City.
- 2002 Cystic Fibrosis Foundation Meeting, Williamsburg.
- 2002 Department of Physiology, University of Iowa, Iowa City.
- 2002 Dept Physiology, University of Texas Health Science Center at San Antonio.
- 2003 Hannemann/Drexel University School of Medicine, Philadelphia.
- 2003 Plenary Lecture, European Cystic Fibrosis Conference, Belfast, UK.
- 2003 Department of Physiology, Queens University of Belfast, Belfast, UK.
- 2003 Workshop on Calcium Signaling, Marbella, Chile.
- 2003 Chilean Physiological Society, Chile.
- 2003 Symposium Speaker, North American Cystic Fibrosis Conference, Anaheim.
- 2003 Department of Physiology, University of Arkansas, Little Rock.
- 2004 Cystic Fibrosis Foundation Meeting, Williamsburg.
- 2004 Ion Channels in Drug Discovery, Philadelphia.
- 2004 Department of Physiology, University of South Alabama, Mobile.
- 2005 Gordon Conference on Salivary Glands and Exocrine Secretion, Ventura.
- 2005 Membrane Biophysics Subgroup, Biophysical Society Mtg, Long Beach.
- 2005 Cystic Fibrosis Research Center, Univ. North Carolina, Chapel Hill.
- 2005 Symposium "Novel Mechanisms of Transporter Regulation" IUPS, San Diego.
- 2005 Gordon Conference on Calcium Signaling, Oxford.
- 2005 Department of Molecular and Cell Biology, Univ. California, Berkeley
- 2005 Pulmonary Division, Children's Hospital of Philadelphia, Philadelphia.
- 2005 Department of Physiology and Biophysics, Univ. Washington, Seattle.
- 2005 Center for Neuroscience and Cell Biology, Univ. Coimbra, Portugal.
- 2006 Department of Physiology and Biophysics, Case Western Reserve Univ., Cleveland.
- 2006 Department of Anesthesiology, Vanderbilt University, Nashville.
- 2006 Department of Physiology, Thomas Jefferson University, Philadelphia.
- 2006 Department of Cell Biology and Neuroscience, Univ. Texas, Galveston.
- 2006 Keystone Symposium, Cell Metabolomics, Snowbird, Utah.
- 2006 Gordon Conference, Macromolecular Organization and Cell Function: Cellular Systems Biology. Mt Holyoke, MA.
- 2006 Dept of Molecular Biophysics and Physiology, Rush University, Chicago.
- 2007 Gordon Conference on Salivary Glands and Exocrine Secretion, Ventura.
- 2007 Department of Biochemistry and Molecular Biology, Drexel University, Philadelphia.
- 2007 Ca²⁺ Day, NIH, Bethesda.
- 2008 Department of Molecular Cellular Sciences, Rosalind Franklin Univ. of Medicine and Science, Chicago.
- 2008 Department of Biochemistry, Temple University School of Medicine, Philadelphia.
- 2008 FASEB Ca²⁺ Signaling Conference, Snowmass, CO.
- 2008 European Cystic Fibrosis Society Conference, Regua, Portugal.

- 2008 Department of Physiology, University of Maryland, Baltimore.
- 2008 Symposium “Calcium Signaling in Disease”, Society of General Physiologists Meeting, Woods Hole, MA.
- 2008 ALZFORUM invited live discussant.
- 2009 Renal Division, Dept. Medicine, University of Pittsburgh.
- 2009 Biophysical Society, Boston.
- 2009 Department of Medical Genetics, University of Toronto.
- 2009 CDD Conference on Neurodegeneration, Rome, Italy.
- 2009 International Symposium on Epithelial Transport, Kyoto, Japan.
- 2009 Symposium “Calcium Signals in Death and Disease”, IUPS, Kyoto, Japan.
- 2009 Symposium “Physiology of Anion Transport”, Okazaki, Japan.
- 2009 Department of Biochemistry, University of North Dakota, Grand Forks.
- 2009 Symposium “Basic Science Insights into Airway Clearance”, N.A. Cystic Fibrosis Conference, Minneapolis.
- 2010 Symposium “Amyloids in Human Disease”, Biophysical Society Meeting, San Francisco.
- 2010 National Eye Institute, Bethesda, MD.
- 2010 HHMI Grads to Medicine Symposium, University of Pennsylvania, Philadelphia.
- 2010 FASEB Conference on Calcium Signaling, Steamboat Springs, CO.
- 2010 Gordon Research Conf., Ion Channels, Tilton, NH.
- 2010 Department of Biophysics and Physiology, UC Irvine, CA.
- 2010 Scripps Institute, La Jolla, CA.
- 2011 Symposium “NHLBI Mitochondrial Biology”, NIH, Bethesda,
- 2011 Symposium “Ca²⁺-Binding Proteins and Ca²⁺ Function in Health and Disease”, Beijing, China.
- 2011 Symposium “Mitochondrial Physiology and Medicine”, Society of General Physiologists Meeting, Woods Hole, MA.
- 2012 Department of Pharmacology & Physiology, University of Medicine and Dentistry of New Jersey, Newark.
- 2012 Symposium “Epithelial Ion Transport Mechanisms”, European Cystic Fibrosis Society, Sainte Maxime, France.
- 2012 Symposium “Mitochondrial Biology”, Thomas Jefferson University, Philadelphia
- 2013 Monell Chemical Sciences Center, Philadelphia.
- 2013 Membrane Biophysics Subgroup Symposium “Macromolecular complexes of ion channels and transporters”, Biophysical Society Meeting, Philadelphia.
- 2013 Cell Webinar, “Mitochondrial Signaling”.
- 2013 Department of Cell Biology and Physiology, University of North Carolina, Chapel Hill.
- 2013 Department of Physiology and Biophysics, University of Iowa, Iowa City.
- 2013 Department of Biomedical Sciences, Medical School, Univ Minnesota Duluth, Duluth,
- 2013 Department of Pharmacology, University of Vermont, Burlington.
- 2013 Department of Cellular and Molecular Physiology, Pennsylvania State Univ., Hershey.
- 2013 Calcium Signalling Gordon Conference, Il Ciocco, Italy.
- 2013 18th International Conference on Calcium and Calcium Binding Proteins in Health and Disease, Kiruna, Sweden.
- 2013 Plenary Lecture, European Calcium Society, “Ca²⁺ and Cell Death”, Leuven, Belgium.
- 2013 Dept Pathology, Children’s Hospital of Philadelphia, Philadelphia.

- 2013 3rd Regional Translational Research in Mitochondria, Aging and Disease Symposium, Philadelphia.
- 2013 Plenary Lecture, Membrane Society of Japan, Kyoto.
- 2013 Pan-American Association for Biochemistry and Molecular Biology, Puerto Varas, Chile.
- 2014 Keynote Lecture, Drug Discovery for Ion Channels XIV, San Francisco (invited).
- 2014 Molecular Physiology and Therapeutics Branch, NIDCR, NIH, Bethesda, MD.
- 2014 FASEB Conference on Calcium Signaling, Nassau, Bahamas.
- 2014 Science Café, Mt Desert Island Biological Laboratory, Salisbury Cove, ME.
- 2014 Mt Desert Island Biological Laboratory, Salisbury Cove, ME.
- 2014 Society of General Physiology Symposium “Sensory Transduction”, Woods Hole, MA. (invited).
- 2014 Keynote Lecture, Perspectives in Molecular Neuroscience in Health and and Disease, Bochum, Germany (invited).
- 2014 Department of Physiology and Biophysics, Case Western Reserve Univ, Cleveland, OH (invited)
- 2014 Institute of Excitability, Washington University, St Louis, MO (invited)
- 2015 FASEB Conference on Ion Channel Regulation, Big Sky, Montana (invited).
- 2015 Society of General Physiology Symposium “Macromolecular Local Signaling Complexes”, Woods Hole, MA. (invited).