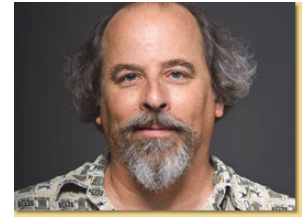


Curriculum Vitae: Thomas E. DeCoursey
{Blue = has not happened yet}

Personal

Born: July 16, 1951, Ames, Iowa, U.S.A.
Married to: Carolyn Garver DeCoursey
Children: Audrey G., born: August 18, 1981
Jillian Z., born: June 13, 1985
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Professional

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Rush University Medical Center
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FAX (Lab): (312) 942-2118
E-mail: tdecours@rush.edu
url: <http://www2.phys.rush.edu/TomD/physiotd.html>

Education

Manchester College, Indiana 1969-1971
Universität Göttingen, W. Germany 1971-1972
McPherson College, Kansas (B.A.) 1972-1974 Biology. Valedictorian, *summa cum laude*
University of Cincinnati, Ohio (Ph.D.) 1974-1979 Pharmacology and Cell Biophysics
Sodium currents in normal and myotonic muscle fibers. 1979. Advisor: Shirley H. Bryant

Postdoctoral Training

1980-1981 Otto F. Hutter, Institute of Physiology, University of Glasgow, Glasgow, Scotland
1982-1985 Michael D. Cahalan, Department of Physiology & Biophysics, University of California,
Irvine, California

Positions

1985-1990. Assistant Professor, Department of Physiology, Rush Presbyterian St. Luke's Medical
Center, Chicago, Illinois
1987-present. Co-director, Patch Clamp Center, Rush University Medical Center, Chicago, Illinois
1990-1998. Associate Professor, Department of Physiology/Molecular Biophysics and Physiology,
Rush Presbyterian St. Luke's Medical Center, Chicago, Illinois
1998-present. Professor, Department of Molecular Biophysics and Physiology, Rush University
Medical Center, Chicago, Illinois

Honors, Fellowships, etc.

Valedictorian, *summa cum laude*, McPherson College (1974)
Fellow of the Albert J. Ryan Foundation, University of Cincinnati (1976-1979)
Summer Research Fellow, University of Cincinnati (1976-1978)
Muscular Dystrophy Association Postdoctoral Fellow (1980-1981)
Honorary Research Fellow, University of Glasgow (1980-1981)
NIH Research Career Development Award (1987-1992)
Editorial Board, *American Journal of Physiology: Cell Physiology* (1990-2005)
Editorial Board, *Journal of General Physiology* (1994-1997; 2013-present)
Editorial Board, *Biochimica et Biophysica Acta* (2008-present)
Editorial Board, *Scientific Reports* (Nature Publishing Group; 2014-present)
Platform sessions chaired at Biophysical Society meetings:

“Potassium Channels” (1987)
“Other Channels” (1991, 1997)
“Anion Channels and Gating, Ion Currents and Other Channels” (1999)
“Channel Regulation” (2001)
“Channel Regulation & Modulation” (2007)

Gordon Conferences:

Protons and Membrane Reactions:

1994, Ventura, CA.
2000, Harbortown, CA.
2003, Harbortown, CA. Chaired session "Gated Channels"
2006, Harbortown, CA. Invited speaker: “Voltage-Gated Proton Channels: Nothing Else will Do!”
2009, Ventura, CA. Chaired session “Proton Channels”
2012, Ventura, CA. Chaired session “Channels and Transporters.”
2014, Vice-chair of ***Protons and Membrane Reactions Gordon Research Conference.***
2016, Chair of ***Protons and Membrane Reactions Gordon Research Conference.***

Bioenergetics:

1995, Andover, NH. Invited speaker: “Voltage-activated Proton Channels”

Ion Channels:

1998, Tilton, NH.
2014, Mount Holyoke College, South Hadley, Massachusetts. Invited speaker: “The voltage-gated proton channel: A VSD with attitude.”

Phagocytes:

2001, New London, CT.
2003, New London, CT.
2005, New London, CT. Invited speaker: “Electron Transport Though the Phagocyte NADPH Oxidase Requires Proton Efflux”
2009, Waterville Valley, NH

NOX Family NADPH Oxidases:

2006, Les Diablerets, Switzerland. Invited speaker: “Electron Transport Though the Phagocyte NADPH Oxidase Requires Proton Efflux”
2008, New London, NH.
2010, Les Diablerets, Switzerland.

Mechanisms of Membrane Transport:

2007, Tilton, NH. Invited speaker: “The Voltage Gated Proton Channel”

- Co-organizer of *First International Proton Channel Meeting* in Villars, Switzerland, September 13-15, 2001.
- 126th Nobel Symposium. Membrane Proteins: Structure, Function and Assembly.** Stockholm, Sweden. August 22-24, 2003. *Invited talk:* "Interactions between NADPH Oxidase and Voltage-Gated Proton Channels: Why Electron Transport Depends on Proton Transport."
- Keynote speaker at conference on *Proton Conduction in Diverse Media.* Fitzwilliam College, Cambridge University, Cambridge, U.K. April, 2005. "Voltage-gated Proton Channels: Structure from Function."
- Invited speaker at *Proton Solvation and Transport in Chemistry, Biology, and Materials Science: 200 Years After Grothuss*, a workshop sponsored by the Office of Basic Energy Sciences of the United States Department of Energy (DOE). June 25-28, 2006 in Washington, DC.
- Electrochemical Signaling by Membrane Proteins: Biodiversity and Principle.** SOKENDAI International Symposium/36th SERIKEN Conference. March 14-16, 2007. Okazaki Conference Center, Aichi, Japan. *Invited talk:* "Voltage-gated Proton Channels: pH-dependent and Voltage-Dependent Gating, Proton Channel Functions." *Session chair,* "Emerging themes of ion channels."
- Chaired **Symposium: "Voltage-Dependent Proton Channels Come of Age"** at the Biophysical Society Annual Meeting and IUPAB International Biophysics Congress, in Long Beach, California, February 2-6, 2008.
- Chaired **Symposium: "The Proton Gets Channeled"** at the Biophysical Society Annual Meeting in San Francisco, California, February 20-24, 2010.
- October 25-27, 2011. **40 Years of Ion Channels: A Marriage of Convenience.** (A Celebration of Ramon Latorre's 70th birthday). Valparaiso, Chile. *Invited talk:* "What makes the voltage-gated proton channel the world's most selective ion channel?" <http://www.uv.cl/pdn/?id=3922>
- Session chair, "Channels and Transporters." February 19-24, 2012. **Protons & Membrane Reactions Gordon Research Conference** in Ventura, CA.
- Rush Faculty **Excellence in Research Award**, Rush University, Chicago, IL. May, 2012.
- Chaired **Symposium: "Proton Channels"** at the 57th Biophysical Society Annual Meeting, Feb 2-6, 2013, Philadelphia.

Professional Societies

- Biophysical Society (1979-present)
- American Physiological Society (1991-present)
- Society of General Physiologists (1991-present, lifetime member)
- American Chemical Society (2000)
- Physiological Society (2000-present)
- Society for Leukocyte Biology (2008-2010)

Other Societies, Memberships, etc.

American Civil Liberties Union, Art Institute of Chicago, Center for Conscience and War, Center for Constitutional Rights, CISPES, Citizen's Utility Board, Fellowship of Reconciliation, Field Museum of Natural History, Frank Lloyd Wright Home & Studio Foundation, Friends of the Oak Park Conservatory, Museum of Contemporary Art, NARAL, Natural Resources Defense Council, Nature Conservancy, Planned Parenthood, Public Concern Foundation, Shedd Aquarium, Sierra Club, Union of Concerned Scientists, Wilderness Society, etc.

Community Service

Volunteer for DuPage PADS overnight shelters and meals for homeless in DuPage County.

Peer Review: Manuscripts

Accounts of Chemical Research
Acta Physiologica Scandinavica
American Journal of Physiology: Cell Physiology
American Journal of Physiology: Heart and Circulatory Physiology
*American Journal of Physiology - Gastrointestinal and Liver Physiology**
American Journal of Physiology: Lung Cellular and Molecular Physiology
American Journal of Physiology: Regulatory, Integrative and Comparative Physiology
American Journal of Respiratory Cell and Molecular Biology
Antioxidants & Redox Signaling
Archives of Biochemistry and Biophysics
Basic Methods in Protein Purification and Analysis (book)
Biochemical Pharmacology
Biochemistry
Biochimica et Biophysica Acta
Biochimica et Biophysica Acta (BBA -Bioenergetics)
Biochimica et Biophysica Acta (BBA -Biomembranes)
Biochimica et Biophysica Acta (BBA - Proteins and Proteomics)
Biochimica et Biophysica Acta (BBA – Molecular Cell Research)
Bioelectrochemistry
BioMed Central
BioMetals
BMC Immunology
Biophysical Journal
Biophysical Reviews
Blood
Cambridge University Press (book)
Cell Biochemistry and Biophysics
Cell Calcium
Cellular Immunology
Cellular Physiology and Biochemistry
Circulation Research
Current Medicinal Chemistry
*Current Organic Chemistry**
Diabetes
Drug Delivery Letters
EMBO Journal
European Journal of Neuroscience
Experimental Cell Research
FASEB Journal
FEBS Journal

*declined due to conflict, etc.

FEBS Letters
Free Radical Biology & Medicine
*Gastroenterology**
Glia
Immunopharmacology
Immunopharmacology and Immunotoxicology
International Journal of Molecular Sciences
Journal of the American Chemical Society
Journal of Applied Physiology
Journal of Biological Chemistry
Journal of Biological Engineering
Journal of Biological Inorganic Chemistry
Journal of Biophysics
Journal of Cell Biology
Journal of Cellular Physiology
Journal of Clinical Investigation
Journal of Computational Physics
Journal of General Physiology
Journal of Immunology
Journal of Innate Immunity
Journal of Leukocyte Biology
Journal of Membrane Biology
Journal of Molecular Biology
Journal of Molecular and Cellular Cardiology
Journal of Neurophysiology
*Journal of Neuroscience**
Journal of Pharmacology and Experimental Therapeutics
Journal of Phycology
Journal of Physical Chemistry
Journal of Physiology (London, Cambridge)
Journal of Rehabilitation Research and Development
Journal of Theoretical Biology
Journal of Visualized Experiments
*Letters in Drug Design & Discovery**
Life Sciences
Marine Drugs
Microorganisms
Molecular Immunology
Molecular Pharmacology
Nature
Nature Communications
Nature Structural & Molecular Biology
Neuroscience
Neuroscience Bulletin
New Scientist (informal critique)
Nitric Oxide

*declined due to conflict, etc.

Pflügers Archiv - European Journal of Physiology
*Physical Review & Research International**
Physiological Genomics
*Physiological Reviews**
PLOS Biology
PLOS One
Proceedings of the National Academy of Sciences, U.S.A.
Protein Science
Recent Patents on DNAG and Gene Sequence
Science
Science Signaling
*Studies in Natural Products Chemistry (Bioactive Natural Products); Elsevier Science Publishers**
*Theoretical Biology and Medical Modelling**
Traffic
WIREs Membrane Transport and Signaling

Peer Review: Grants

Alzheimer's Association
American Chemical Society – The Petroleum Research Fund
American Heart Association
American Heart Association of Metropolitan Chicago
Arthritis Research Campaign (U.K.)
Britain-Israel Research and Academic Partnership (BIRAX)
British Columbia Health Care Research Foundation
Cystic Fibrosis Research Inc. (CFRI)
Human Frontier Science Program Organization* (France)
Israel Science Foundation
National Institute of Diabetes and Digestive and Kidney Diseases (*Ad hoc*)
NCI-ARRA P30 Biomedical Research Core Centers Review Committee
Netherlands Organisation for Scientific Research (NWO)
N.I.H. Biophysics of Neural Systems Study Section (BPNS) Special Emphasis Panel 2014/10 ZRG1
MDCN-G (04) S Channels and Receptors (*Ad hoc*)
N.I.H. Cell Biology & Physiology Study Section (*Ad hoc*)
NIH Cell Biology, Developmental Biology, and Bioengineering (F05) study section review panel
[ZRG1 F05-R (20) L]
N.I.H. Experimental Immunology Study Section (*Ad hoc*)
N.I.H. Erythrocyte & Leukocyte Biology (ELB) Study Section (*Ad hoc*)
N.I.H. General Medicine B Study Section & Urology Special Emphasis Panel (*Ad hoc*)
N.I.H. National Institute on Alcohol Abuse and Alcoholism Special Emphasis Panel
N.I.H. SCORE grants
National Science Foundation (*Ad hoc*)
National Science Foundation, Division of Molecular and Cellular Biosciences: Ion Channels and
Transporters Panel (Virtual)
Division for Chemical Sciences (CW) of the Netherlands Organisation for Scientific Research (NWO)
Philip Morris External Research Program
Rush Presbyterian St. Luke's Medical Center
Swim Across America Cancer Pilot Projects

Swiss National Science Foundation
U.S. Civilian Research and Development Foundation, Cooperative Grants Program
U.S. - Israel Binational Science Foundation
Department of Veterans Affairs
Wellcome Trust (U.K.)
Wellcome Trust/DBT India Alliance
ZAA1 DD (02) Review of Go Grants and P30 Faculty Recruitment Supplements 2009/10

University Committees, Administrative Work, etc.

Committee on Academic Freedom (alternate 1986-7)
Research and Academic Laboratory Safety Committee (1989-2004)
Task Force on Faculty Development as Researchers (1996-7)
Department Advisory Committee (1995-2005, 2014-present)
Sigma Chi poster judge, Rush Forum for Research and Clinical Investigation (2002, 2006)
Committee on Senior Faculty Appointments and Promotion (1999-2002; 2010-2013)
Department web site maintainer <http://www.rushu.rush.edu/molbio/> (2001-2006)
Director of Departmental Seminar Series (1990-2005)
Served as external expert on a panel investigating scientific research misconduct (2008).
University-IS Advisory Council (2010-present)

Teaching

Respiratory Physiology section to graduate nurses (1986-1990)
Respiratory Physiology section to medical students (1991-present)
Lecturer, Cell Biology course for graduate students (1995-2007)
Lecturer, Cell Signaling Journal Club (course credit) (2010-present)

Graduate students

Mark S. Shapiro, Ph.D. 1990. Thesis title: "Selectivity, gating and permeant ion effects on gating of type I potassium channels in mouse lymphocytes." {*currently* Professor, Department of Physiology, University of Texas Health Science Center at San Antonio}

Ph.D. dissertation committees

Richard Wagner, Ph.D. 1991. "Skeletal muscle chloride conductance in mammals and amphibians: modulation by enantiomeric carboxylic acids." Department of Pharmacology & Cell Biophysics, University of Cincinnati College of Medicine, Cincinnati, OH. (Advisor: Shirley H. Bryant)
Sarah K. England, Ph.D. 1993. "The Role and Regulation of Arterial Muscle Potassium Channels in Hypertension." Department of Physiology, Medical College of Wisconsin, Milwaukee, WI. (Advisor: Nancy J. Rusch)
Jinsong Zhou, Ph.D. 1997. "Molecular Cloning and Functional Expression of a Skeletal Muscle Dihydropyridine Receptor from Amphibian Muscle." Department of Molecular Biophysics and Physiology, Rush Presbyterian St. Luke's Medical Center, Chicago, Illinois. (advisor: Eduardo Rios)

- Ed Quigley, Ph.D. 2001. "Synthesis and Characterization of Covalently Modified Gramicidin Ion Channels: An Investigation of Channel Properties, Structure, and Function." Department of Physiology, Loyola University Stritch School of Medicine, Maywood, IL. (Advisor: Sam Cukierman).
- Neeta G. Shenoy, Ph.D. 2003. "Role of Phosphoinositide 3 Kinase-Associated Signaling Events in Neutrophil Activation by Eosinophil Major Basic Protein." Division of Immunology/Microbiology, Rush Presbyterian St. Luke's Medical Center, Chicago, IL. (Advisor: Larry L. Thomas).
- Kristina Faxén, Ph.D. May 25, 2007. "Active Transport of Ions across Biomembranes. A Kinetic Study of Cytochrome *c* Oxidase Reconstituted into Phospholipid Vesicles." Acted as Ph.D. thesis "opponent." Department of Biochemistry and Biophysics, Arrhenius Laboratories for Natural Sciences, Stockholm University, Stockholm, Sweden. (Advisor: Peter Brzezinski).
- Alexander Peyser, Ph.D. September 7, 2010. "Theoretical Studies of Structure-Function Relationships in K_V Channels: Electrostatics of the Voltage Sensor." Department of Physiology and Biophysics, University of Miami Medical School, Miami, FL. (Advisor: Wolfgang Nonner).
- Alexis (Lexi) Cogswell, Ph.D. August 23, 2012. "Functional Genomics Approach to Study *Schistosoma mansoni* Reproductive Development." Department of Immunology/Microbiology, Rush University Medical Center, Chicago, IL. (Advisor: David Williams).
- James Letts, Ph.D. September 26, 2013. "Functional and Structural Studies of the Human Voltage-Gated Proton Channel." Department of Molecular Neurobiology and Biophysics, Rockefeller University, New York, NY. (Advisor: Roderick MacKinnon).

Candidates Supported for Promotion, Who Were Promoted!

- Pamela A. Pappone, Ph.D., to Professor, Division of Biological Sciences, University of California at Davis, Davis, CA. (1995).
- Elizabeth R. Jacobs, M.D., to Professor, Departments of Physiology and Pulmonary Medicine, Medical College of Wisconsin, Milwaukee, WI. (1999).
- Samuel Cukierman, M.D., Ph.D., to Professor, Department of Physiology Chicago Stritch School of Medicine of Loyola University, Maywood, IL. (2003).
- Larry L. Thomas, Ph.D., to Professor, Department of Immunology/Microbiology, Rush Presbyterian St. Luke's Medical, Chicago, IL. (2003).
- Mark S. Shapiro, Ph.D., to Associate Professor, Department of Physiology, The University of Texas Health Science Center at San Antonio, San Antonio, TX. (2005).
- Paige Lacy, Ph.D., to Associate Professor, Department of Medicine, University of Alberta, Edmonton, Alberta, Canada. (2006).
- Jessica Moreland, M.D., to Associate Professor of Pediatrics, University of Iowa, Iowa City, IA. (2006).
- Alla F. Fomina, Ph.D. to Associate Professor Department of Physiology and Membrane Biology at the University of California at Davis. (2008).
- Elizabeth R. Jacobs, M.D., for tenure (independent of rank), Departments of Physiology and Pulmonary Medicine, Medical College of Wisconsin, Milwaukee, WI. (2009).
- Paige Lacy, Ph.D., to Professor, Department of Medicine, University of Alberta, Edmonton, Alberta, Canada. (2012).

Grant Support

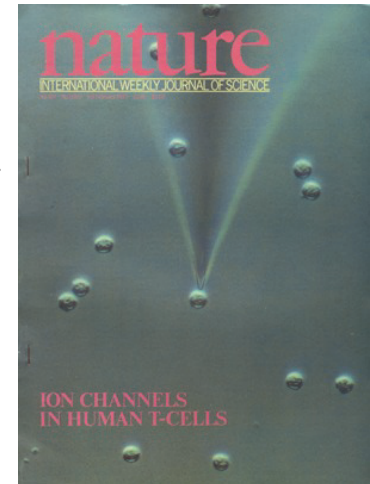
1976-1978. Summer Research Fellowships, University of Cincinnati

- 1980-1981. Muscular Dystrophy Association Postdoctoral Fellowship. "Chloride Current Noise Analysis in Amphibian and Mammalian Muscle."
- 1986-1988. American Heart Association of Metropolitan Chicago Grant-in-Aid. "Ion Channels in Pulmonary Type II Epithelial Cells." (*relinquished after alternative grant funded*).
- 1987-1992. National Institutes of Health Research Grant. "Pulmonary Type II Epithelial Cells: Role of Ion Channels."
- 1987-1992. National Institutes of Health Research Career Development Award K04-HL01928. "Pulmonary Type II Epithelial Cells: Role of Ion Channels."
- 1992-1994. American Heart Association of Metropolitan Chicago Grant-in-Aid. "Hydrogen Ion Currents in Rat Alveolar Epithelial Cells." (*subsumed into simultaneous AHA grant*)
- 1992-1995. American Heart Association Grant-in-Aid, with funds contributed by the American Heart Association of Metropolitan Chicago. "Hydrogen Ion Currents in Rat Alveolar Epithelial Cells."
1995. Otsuka Pharmaceutical Company Research Agreement. "Effects of Vesnarinone on Ion Channels in Human Neutrophils."
- 1995-1997. American Heart Association of Metropolitan Chicago Grant-in-Aid. "Voltage-activated Proton Channels in Rat Alveolar Epithelial Cells". (*relinquished after alternative grant funded*).
- 1995-1999. National Institutes of Health Research Grant R01-HL52671. "Voltage-activated Proton Channels in Alveolar Epithelium."
- 2000-2004. National Institutes of Health Research Grant R01-HL61437. "Voltage-gated Proton Channels in Human Neutrophils."
- 2000-2004. National Institutes of Health Research Grant R01-HL52671. "Voltage-gated Proton Channels in Alveolar Epithelium."
- 2005-2009. National Institutes of Health Research Grant R01-HL61437. "Voltage-gated Proton Channels in Human Neutrophils."
- 2007-2010. Philip Morris External Research Program. "Proton Channels in Pulmonary and Immune Cell Response."
- 09/01/2009 to 08/31/2011. "Bioluminescence in Dinoflagellates Triggered by Voltage-gated Proton Channels." NSF grant MCB-0943362.
- 05/01/2010 to 4/30/2014. "Structure-Function Relationships of Voltage-Gated Proton Channels." E Grant Number: R01-GM087507.
- 07/01/2010-06/30/2012. "Strong Glucose Dependence of Reactive Oxygen Species Production (Electron Current) in Human Monocytes." Iacocca Family Foundation. Boris Musset, P.I. (Role: collaborating investigator/sponsor).
- 09/01/2013-08/31/2017. "Collaborative Research: Voltage-gated Proton Channels in Dinoflagellates." National Science Foundation. (competitive renewal of MCB-0943362). P.I. T.E. DeCoursey, co-PI S.M.E. Smith, Kennesaw State University. Proposal No: MCB-1242985.
- 09/01/2013-04/30/2017. "Selectivity and Permeation in the Human Voltage-gated Proton Channel, hHv1" 1R01GM102336-01A1 NIH.

Publications: Journal Articles (peer-reviewed)

1. DeCoursey, T.E., S.G. Younkin and S.H. Bryant. (1978). Neural control of chloride conductance in rat extensor digitorum longus muscle. *Experimental Neurology*. 61:705-709. PMID: 710575

2. DeCoursey, T.E., S.H. Bryant and K.M. Owenburg. (1981). Dependence of membrane potential on extracellular ionic concentrations in myotonic goats and rats. *American Journal of Physiology*. 240:C56-C63. PMID: 6257116
3. DeCoursey, T.E., S.H. Bryant and R.J. Lipicky. (1982). Sodium currents in human skeletal muscle fibers. *Muscle and Nerve*. 5:614-618. PMID: 6296672
4. DeCoursey, T.E., J. Dempster and O.F. Hutter. (1984). Inward rectifier current noise in frog skeletal muscle. *Journal of Physiology (London)*. 349:299-327. PMID: 6330346. PMCID: PMC1199339
5. DeCoursey, T.E. and O.F. Hutter. (1984). Potassium current noise induced by barium ions in frog skeletal muscle. *Journal of Physiology (London)*. 349:329-351. PMID: 6330347. PMCID: PMC1199340
6. DeCoursey, T.E., K.G. Chandy, S. Gupta and M.D. Cahalan. (1984). Voltage-gated K⁺ channels in human T lymphocytes: a role in mitogenesis? *Nature*. 307:465-468. [Cover illustration] PMID: 6320007. doi:10.1038/307465a0
7. Chandy, K.G., T.E. DeCoursey, M.D., Cahalan, C. McLaughlin and S. Gupta. (1984). Voltage-gated potassium channels are required for human T lymphocyte activation. *Journal of Experimental Medicine*. 160:369-385. PMID: 6088661. PMCID: PMC2187449. doi: 10.1084/jem.160.2.369
8. Cahalan, M.D., K.G. Chandy, T.E. DeCoursey and S. Gupta. (1985). A voltage-gated potassium channel in human T lymphocytes. *Journal of Physiology (London)*. 358:197-237. PMID: 2580081. PMCID: PMC1193339
9. Chandy, K.G., T.E. DeCoursey, M. Fischbach, N. Talal, M.D. Cahalan and S. Gupta. (1986). Altered K⁺ channel expression in abnormal T lymphocytes from mice with the *lpr* gene mutation. *Science*. 233:1197-1200. PMID: 2426784. doi:10.1126/science.2426784
10. DeCoursey, T.E., K.G. Chandy, S. Gupta and M.D. Cahalan. (1987). Two types of potassium channels in murine T lymphocytes. *Journal of General Physiology*. 89:379-404. PMID: 2435844. PMCID: PMC2215902. doi: 10.1085/jgp.89.3.379
11. DeCoursey, T.E., K.G. Chandy, S. Gupta and M.D. Cahalan. (1987). Mitogen induction of ion channels in murine T lymphocytes. *Journal of General Physiology*. 89:405-420. PMID: 2435845. PMCID: PMC2215901. doi: 10.1085/jgp.89.3.405
12. DeCoursey, T.E., E.R. Jacobs and M.R. Silver. (1988). Potassium channels in rat type II alveolar epithelial cells. *Journal of Physiology (London)*. 395:487-505. PMID: 2457683. PMCID: PMC1192006
13. DeCoursey, T.E. (1990). State-dependent inactivation of K⁺ currents in rat type II alveolar epithelial cells. *Journal of General Physiology*. 95:617-646. PMID: 2338534. PMCID: PMC2216334. doi: 10.1085/jgp.95.4.617
14. Silver, M.R. and T.E. DeCoursey. (1990). Intrinsic gating of inward rectifier in bovine pulmonary artery endothelial cells in the presence or absence of internal Mg²⁺. *Journal of General Physiology*. 96:109-133. PMID: 2212977. PMCID: PMC2228980. doi: 10.1085/jgp.96.1.109
15. Jacobs, E.R. and T.E. DeCoursey. (1990). Mechanisms of potassium channel block in rat alveolar epithelial cells. *Journal of Pharmacology and Experimental Therapeutics*. 255:459-472. PMID: 1700814



16. Shapiro, M.S. and T.E. DeCoursey. (1991). Selectivity and gating of the type *L* potassium channel in mouse lymphocytes. *Journal of General Physiology*. 97:1227-1250. PMID: 1875188. PMCID: PMC2216514. doi: 10.1085/jgp.97.6.1227
17. Shapiro, M.S. and T.E. DeCoursey. (1991). Permeant ion effects on the gating kinetics of the type *L* potassium channel in mouse lymphocytes. *Journal of General Physiology*. 97:1251-1278. PMID: 1875189. PMCID: PMC2216509.. doi: 10.1085/jgp.97.6.1251
18. DeCoursey, T.E. (1991). Hydrogen ion currents in rat alveolar epithelial cells. *Biophysical Journal*. 60:1243-1253. PMID: 1722118. PMCID: PMC1260178. doi: 10.1016/S0006-3495(91)82158-0
19. DeCoursey, T.E. and V.V. Cherny. (1993). Potential, pH and arachidonate gate hydrogen ion currents in human neutrophils. *Biophysical Journal*. 65:1590-1598. PMID: 7506066. PMCID: PMC1225885. doi: 10.1016/S0006-3495(93)81198-6
20. Silver, M.R., M.S. Shapiro and T.E. DeCoursey. (1994). Effects of external Rb⁺ on inward rectifier K⁺ channels of bovine pulmonary artery endothelial cells. *Journal of General Physiology*. 103:519-548. PMID: 8057077. PMCID: PMC2216865. doi: 10.1085/jgp.103.4.519
21. Pennefather, P. and T.E. DeCoursey. (1994). A scheme to account for the effects of Rb⁺ and K⁺ on inward rectifier K⁺ channels of bovine artery endothelial cells. *Journal of General Physiology*. 103:549-581. PMID: 8057078. PMCID: PMC2216860. doi: 10.1085/jgp.103.4.549
22. DeCoursey, T.E. and V.V. Cherny. (1994). Na⁺-H⁺ antiport detected through hydrogen ion currents in rat alveolar epithelial cells and human neutrophils. *Journal of General Physiology*. 103:755-785. PMID: 8035162. PMCID: PMC2219217. doi: 10.1085/jgp.103.5.755
23. Cherny, V.V., V.S. Markin and T.E. DeCoursey. (1995). The voltage-activated hydrogen ion conductance in rat alveolar epithelial cells is determined by the pH gradient. *Journal of General Physiology*. 105:861-896. PMID: 7561747. PMCID: PMC2216954. doi: 10.1085/jgp.105.6.861
24. DeCoursey, T.E. and V.V. Cherny. (1995). Voltage-activated proton currents in membrane patches of rat alveolar epithelial cells. *Journal of Physiology (London)*. 489:299-307. PMID: 8847626. PMCID: PMC1156758
25. DeCoursey, T.E. (1995). Mechanism of K⁺ channel block by verapamil and related compounds in rat alveolar epithelial cells. *Journal of General Physiology*. 106:745-779. PMID: 8576705. PMCID: PMC2229280. doi: 10.1085/jgp.106.4.745
26. Kim, S.Y., M.R. Silver and T.E. DeCoursey. (1996). I. Ion channels in human THP-1 monocytes. *Journal of Membrane Biology*. 152:117-130. PMID: 9139123. doi: 10.1007/s002329900091
27. DeCoursey, T.E. and V.V. Cherny. (1996). II. Voltage-activated proton currents in human THP-1 monocytes. *Journal of Membrane Biology*. 152:131-140. PMID: 9139124. doi: 10.1007/s002329900092
28. DeCoursey, T.E., S.Y. Kim, M.R. Silver and F.N. Quandt. (1996). III. Ion channel expression in PMA-differentiated human THP-1 macrophages. *Journal of Membrane Biology*. 152:141-157. PMID: 9139125. doi: 10.1007/s002329900093
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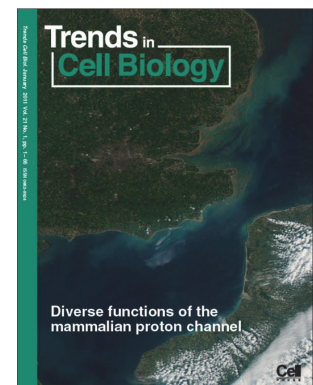
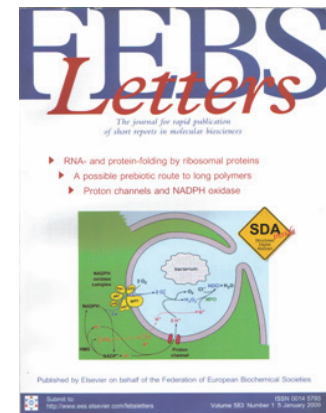
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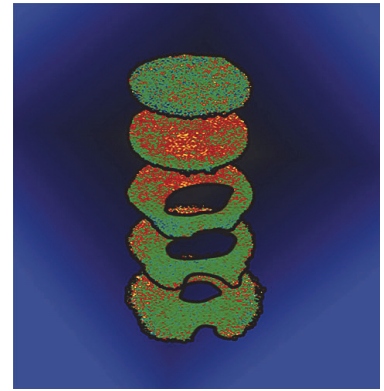
GenBank Depositions

- 1) LOCUS: JN255155 884 bp mRNA linear PLN 14-OCT-2011
DEFINITION: *Karlodinium veneficum* voltage-gated proton channel kHv1 mRNA
ACCESSION: JN255155
VERSION: JN255155, GI:351694293

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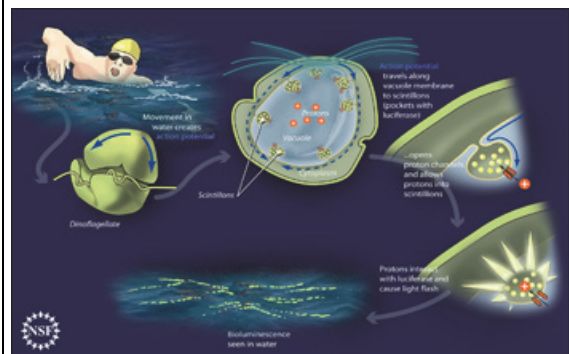
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83. Musset, B., S.M.E. Smith, K. Kulleperuma, S. Rajan, D. Morgan, J. Holyoake, V.V. Cherny, R. Pomès, and T.E. DeCoursey. (2012). Does aspartate¹¹² mutation convert the human voltage gated proton channel into a hydroxide channel? *Biophysical Journal*. 102:576a.
84. Kulleperuma, K., S.M.E. Smith, J. Holyoake, N. Chakrabarti, D. Morgan, B. Musset, T.E. DeCoursey, V.V. Cherny, and R. Pomès. (2012). A homology modeling-simulation protocol for construction and assessment of H_v1 models. *Biophysical Journal*. 102:266a.
85. Morgan, D., M. Capasso, B. Musset, V.V. Cherny, and T.E. DeCoursey. (2013). Two isoforms of the human voltage gated proton channel hH_v1. *Biophysical Journal*. 104:276a.
86. DeCoursey, T.E. (2013). Selectivity of the voltage gated proton channel H_v1. *Biophysical Journal*. 104:34a.
87. Musset, B., S.M.E. Smith, K. Kulleperuma, D. Morgan, J. Holyoake, N. Chakrabarti, V.V. Cherny, R. Pomès, and T.E. DeCoursey. (2013). Accessibility of the S4 arginines in the human voltage gated proton channel, hH_v1. *Biophysical Journal*. 104:276a.
88. Capasso, C. Taubert, E. Hondares, D. Morgan, B. Musset, V.V. Cherny, and T.E. DeCoursey. (2013). Proton channels in normal and malignant B cells. *Biophysical Journal*. 104:34a.
89. Morgan, D., B. Musset, V.V. Cherny, S.M.E. Smith, K. Kulleperuma, S. Rajan, R. Pomès, T.E. DeCoursey. (2014). Selectivity filter scanning of the human voltage gated proton channel hH_v1. *Biophysical Journal*. [106:558a](#).
90. Kulleperuma, K., D. Morgan, B. Musset, S.M.E. Smith, S. Rajan, V.V. Cherny, T.E. DeCoursey, R. Pomès. (2014). Molecular dynamics studies of ion permeation in human voltage gated proton channel. *Biophysical Journal*. [106:433a-434a](#).

91. Morgan, D., B. Musset, V.V. Cherny, S.M.E. Smith, K. Kulleperuma, S. Rajan, R. Pomès, T.E. DeCoursey. (2014). Selectivity filter scanning of the human voltage gated proton channel hH_v1. *Protons and Membrane Reactions Gordon Research Conference. Unpublished.*
92. Musset, B., D. Morgan, S.M.E. Smith, K. Kulleperuma, S. Rajan, V.V. Cherny, R. Pomès, and T.E. DeCoursey. 2014. Peregination of the selectivity filter delineates the pore of the human voltage-gated proton channel hH_v1. *German Physiological Society. Unpublished.*

Published or Reproduced Photographs and Figures

Photograph of patch-clamped human T lymphocyte:

- cover photograph, *Nature* Vol. 307 (No. 5950), February 2-8, 1984.
- reproduced on the cover of Medical Systems Corp. pamphlet on micromanipulators, 1984.

Figure 1 from DeCoursey *et al.*, 1984 (*Nature* 307:465-468). reproduced in:

- "Patch Clamp Studies of Lymphocyte Activation" by P. Gardner, 1990. *Annual Review of Immunology*. 8:231-252.

Figure 2 from DeCoursey *et al.*, 1984 (*Nature* 307:465-468) (single K⁺ channel currents), reprinted in:

- Ionic Channels of Excitable Membranes. Bertil Hille. 1984. Sinauer Assoc. Inc., Sunderland, MA.
- Ionic Channels of Excitable Membranes. Bertil Hille. 1992. Sinauer Assoc. Inc., Sunderland, MA.
- Ion Channels of Excitable Membranes. Bertil Hille. 2001. Sinauer Assoc. Inc., Sunderland, MA.
- "Patch Clamp Studies of Lymphocyte Activation" by P. Gardner, 1990. *Annual Review of Immunology*. 8:231-252.

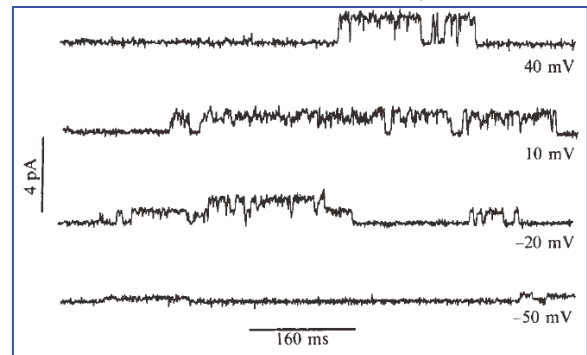


Figure 3 from DeCoursey *et al.*, 1984 (*Nature* 307:465-468) reprinted in:

- "Recent Advances in T-cell Immunology" by S. Gupta, in Vol. I. No. 5 of *Immunopathology Immunotherapy Letter*.
- "Potassium Channels, Proliferation and G1 Progression" by W.F. Wonderlin and J.S. Strobl. 1996. *Journal of Membrane Biology*. 154:91-107.

Figure 3 from Cherny *et al.*, 1995 (*J. Gen. Physiol.* 105:861-896) reproduced in:

- "Voltage Gated Proton Channels" by Y. Okamura, 2012. *Comprehensive Biophysics*. 6:199-222.

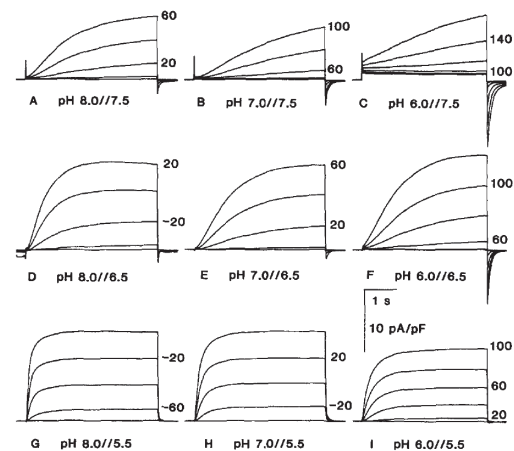


Figure 4A from Kim *et al.*, 1996 (*J. Membrane Biol.* 152:117-130) reproduced in:

- "Potassium channels in leukocytes and toxins that block them: structure, function and therapeutic implications" by Jayashree Aiyar. 1999. *Perspectives in Drug Discovery and Design*. 15/16:257-280.

Figure 10 from DeCoursey *et al.*, 1996 (*J. Membrane Biol.* 152:141-157) reproduced in:

- "Potassium channels in leukocytes and toxins that block them: structure, function and therapeutic implications" by Jayashree Aiyar. 1999. *Perspectives in Drug Discovery and Design*. 15/16:257-280.

Figure 1 from Zhou *et al.*, 1998 (*J. Gen. Physiol.* 111:781-794) reproduced in:

- "Ion channels in microglia (brain macrophages)" by C. Eder, 1998. *American Journal of Physiology: Cell Physiology*. 275:C327-C342.

Figure 4 from Schilling *et al.*, 2000 (*Am. J. Physiol. Cell Physiol.* 279:C1123-C1134) reproduced in:

- "Microglial ion channels" by C. Eder, 2002. In: Microglia in the regenerating and degenerating CNS. W.J. Streit, Editor. Springer-Verlag, New York, pp. 36-57.

Figure 10 from Schilling *et al.*, 2002 (*J. Physiol.* 545:91-105) reproduced in:

- "Proton channels in non-phagocytic cells of the immune system" by Melania Capasso, 2013. *WIREs Membrane Transport and Signaling*. 2:65–73. **Figure 1** from DeCoursey, T.E., 2004. *Science's STKE* 2004:pe21. reproduced in:
 - "Biochemistry and Functions of Monocytes and Macrophages" by Annette Plüddemann & Siamon Gordon. Chapter 68, pp. 999-1020. {p. 1014, Fig. 68-15} In: **Williams Hematology**. 8th Edition. Ed. By K. Kaushansky, M.A. Lichtman, E. Beutler, T.J. Kipps, U. Seligsohn, and J.T. Prechal. McGraw Hill, Chicago, 2010.

Figure 1 from R. Murphy and T.E. DeCoursey, 2006. (*Biochimica et Biophysica Acta: Bioenergetics*. 1757:996-1011) reproduced in:

- Cover illustration, *FEBS Letters*, January 5, 2009, Vol. 583, No. 1.

Figure 2A from Morgan et al, 2007. (*J. Physiol.* 579:327-344) reproduced in:

- “Proton channels in algae: reasons to be excited.” by A.R. Taylor, C. Brownlee, G.L. Wheeler. 2012. *Trends in Plant Science*. 17:675–684.

Figure 5 from Musset et al, 2008. (*Proc. Natl. Acad. Sci., U.S. A.* 105:11020-11025) reproduced in:

- “Proton channels in non-phagocytic cells of the immune system” by Melania Capasso, 2013. *WIREs Membrane Transport and Signaling*. 2:65–73.**Figure 9** from Musset et al, 2010. (*J. Physiol.* 588:1435-1449) reproduced in:

- Rebolledo, S., F. Qui, and H.P. Larson. 2012. Molecular structure and function of Hv1 channels. *WIREs Membrane Transport and Signaling*. 1:763–777. (Fig. 9A)

Figure 4 from DeCoursey, T.E., 2010. (*Physiology*. 25:27-40) reproduced in:

- El Chemaly, A., and N. Demaurex. 2012. Do Hv1 proton channels regulate the ionic and redox homeostasis of phagosomes? *Molecular and Cellular Endocrinology*. 353:82-27.

Figure 2 from Musset et al, 2010. (*J. Biol. Chem.* 285:5117-5121) reproduced in:

- Rebolledo, S., F. Qui, and H.P. Larson. 2012. Molecular structure and function of Hv1 channels. *WIREs Membrane Transport and Signaling*. 1:763–777. (Fig. 2A-C,F-G)

Figure 3B from Smith et al, 2011. (*Proc. Natl. Acad. Sci. U.S.A.* 108:18162-18168) reproduced in:

- “Proton channels in algae: reasons to be excited.” by A.R. Taylor, C. Brownlee, G.L. Wheeler. 2012. *Trends in Plant Science*. 17:675–684.

Figure S9 from Capasso et al, 2011. (*Nature Immunology*. 11:265-272.) reproduced in:

- Capasso, M., T.E. DeCoursey, and M.J.S. Dyer. (2011). pH regulation and beyond: unanticipated functions for the voltage gated proton channel, HVCN1. *Trends in Cell Biology*. 21:20-28.
- “Proton channels in non-phagocytic cells of the immune system” by Melania Capasso, 2013. *WIREs Membrane Transport and Signaling*. 2:65–73.**Figure 5** from Capasso et al, 2011. (*Trends in Cell Biology*. 21:20-28) reproduced in:
- “Proton channels in non-phagocytic cells of the immune system” by Melania Capasso, 2013. *WIREs Membrane Transport and Signaling*. 2:65–73.

Invited Seminars

February 22, 1984. Department of Medicine, **University of Texas at San Antonio**. “The Role of Potassium Channels in T Lymphocyte Mitogenesis.”

April 9, 1984. Department of Physiology and Biophysics, **University of California at Los Angeles**. “Potassium Channels in T Lymphocytes.”

June 8, 1984. Department of Pharmacology and Cell Biophysics, **University of Cincinnati** College of Medicine, Cincinnati, Ohio. “The Role of Potassium Channels in T Lymphocyte Mitogenesis.”

September 18, 1984. Department of Physiology and Biophysics, **University of Iowa**, Iowa City, Iowa. “The Role of Potassium Channels in T Lymphocyte Activation.”

January 22, 1985. Department of Physiology, **Rush Medical College**, Chicago, Illinois. “Involvement of Potassium Channels in Lymphocyte Proliferation.” {NOTE: January 20, 1985 set the all-time record cold for Chicago of -27°F, -25°F for Oak Park during my visit.}

January 9, 1986. Clinical Immunology Conference, **Rush Medical College**, Chicago, Illinois. “Application of the Patch Clamp Technique to the Study of T Lymphocytes.”

- March 3, 1986. Department of Pharmacology, **Cornell University**, Ithaca, New York. "Potassium Channels in Normal and Abnormal Proliferation of Mouse T Lymphocytes."
- October 15, 1987. Department of Neurology. **University of Chicago**. "Possible Role for Potassium Channels in T Lymphocyte Activation."
- October 22, 1987. Department of Pharmacology, **Northwestern University** School of Medicine, Chicago, Illinois. "Ion Channels in T Lymphocytes: Possible Role in Immunoresponse."
- June 23, 1988. Institute of Neurobiology, **University of Puerto Rico**, San Juan, Puerto Rico. "Inward Rectifier Channels in Lymphoma and Endothelial Cells."
- March 8, 1990. Department of Physiology, **Chicago Medical School**. "State-dependent Inactivation of K^+ Currents in Rat Alveolar Epithelial Cells."
- July 24, 1990. **Searle Pharmaceutical Co.**, Skokie, Illinois. "Mechanism of Potassium Channel Block by Verapamil in Rat Alveolar Epithelial Cells."
- March 11, 1991. Department of Pharmacology, **Northwestern University**, Chicago, Illinois. "Mechanism of Block of Potassium Channels by Verapamil in Alveolar Epithelial Cells."
- March 20, 1991. Department of Physiology and Biophysics, **University of Illinois at Chicago**. "Ion Channels in Alveolar Epithelial Cells."
- April 15, 1991. Department of Physiology. **Leiden University**, Leiden, the Netherlands. "Selectivity and Permeation in the Type I Potassium Channels in Lymphocytes."
- April 18, 1991. Research Institute of Toxicology, **University of Utrecht**, Utrecht, the Netherlands. "Ion Channels in Alveolar Epithelial Cells."
- June 12, 1991. Department of Physiology, **Medical College of Wisconsin**, Milwaukee, Wisconsin. "Ion Channels in Type II Alveolar Epithelial Cells."
- February 7, 1992. **Searle Pharmaceutical Company**, St. Louis, Missouri. "Hydrogen Ion Currents in Alveolar Epithelial Cells."
- March 18, 1993. Department of Pulmonary Medicine, **Michael-Reese Hospital**, Chicago, Illinois. "Ion Channels in Alveolar Epithelial Cells."
- May 12, 1993. Department of Physiology, **Loyola University**, Maywood, Illinois. " H^+ Currents in Non-Excitable Cells."
- June 4, 1993. Department of Pharmacological and Physiological Sciences, **University of Chicago**, Illinois. "Proton Currents in Phagocytes: Role in the Respiratory Burst."
- October 4, 1994. Department of Physiology and Biophysics, **University of Illinois at Chicago**. "Voltage-activated Proton Channels."
- May 21, 1996. Biomedical Sciences Division, **University of California at Riverside**, Riverside, California. "Voltage-activated Proton Channels: the Final Frontier."
- April 7, 1997. Abteilung Neurophysiologie, Institut für Physiologie, **Humboldt University**, Berlin, Germany. "Voltage-activated Proton Channels: Mechanisms of Permeation and Regulation of Gating by Protons."
- April 8, 1997. Abteilung Neurophysiologie, Institut für Physiologie, **Humboldt University**, Berlin, Germany. "Physiology of Ion Channels in Leukocytes."
- July 3, 1997. Department of Pharmacology, **University of Illinois at Chicago**. "Voltage-gated Proton Channels: for Relief from Acid Build-up."
- March 9, 1998. Department of Anatomy & Physiology, **Kansas State University**, Manhattan, KS. "Voltage-gated Proton Channels: for Relief from Acid Build-up."

- April 2, 1998. Department of Pharmacology, **University of Cincinnati** College of Medicine, Cincinnati, OH. "Voltage-gated Proton Channels: for Relief from Acid Build-up."
- December 24, 1998. Department of Physiology. **Leiden University** Medical Center, Leiden, the Netherlands. "Why and How Measuring Proton Currents through Proton Channels in White Blood Cells and Epithelial Cells."
- April 9, 1999. Department of Molecular & Integrative Physiology, **University of Illinois at Champaign/Urbana**. "Voltage-gated Proton Channels: They Are Voltage-gated, but Are They Ion Channels?"
- April 26, 2000. Department of Physiology and Biophysics, **University of Washington** School of Medicine, Seattle, WA. "Voltage-gated Proton Channels: Myth and Reality, or Will the REAL Proton Channel Please Stand Up?"
- September 12, 2001. Department of Physiology, **University of Geneva** Medical Center, Geneva, Switzerland. "What Can Function Tell Us about Structure of Proton Channels?"
- October 25, 2001. Children's Memorial Hospital and **Northwestern University**. Children's Memorial Institute for Education and Research (CMIER) Seminars in Biology and Chemistry. Chicago, IL. "Functions of Proton Channels in Human Phagocytes - Lessons from Chronic Granulomatous Disease."
- January 29, 2002. Department of Neurobiology & Physiology, **Northwestern University**, Chicago, IL. "Voltage-gated Proton Channels: Will the *Real* Channel Molecule Please Stand Up?"
- May 10, 2002. Department of Physiology, **Cambridge University**, Cambridge, U.K. "A Hitchhiker's Guide to Voltage-gated Proton Channels."
- May 13, 2002. Department of Physiology, **Oxford University**, Oxford, U.K. "A Hitchhiker's Guide to Voltage-gated Proton Channels."
- September 29, 2003. Department of Physiology and Biophysics, **University of California at Irvine**, Irvine, CA. "Why Phagocytes Need Proton Channels."
- October 22, 2003. Department of Molecular & Cellular Physiology, **University of Cincinnati** College of Medicine, Cincinnati, OH. "Interactions Between the Phagocyte NADPH Oxidase and Voltage-Gated Proton Channels."
- November 20, 2003. Department of Physiology and Biophysics, **Chicago Medical College**, Chicago, IL. "Why Phagocytes Need Proton Channels."
- December 12, 2003. Institute for Environmental Medicine, **University of Pennsylvania**, Philadelphia, PA. "Voltage-Gated Proton Channels in Alveolar Epithelium and Other Cells."
- September 15, 2004. Department of Pharmacology, **University of Illinois at Chicago College of Medicine**, Chicago, IL. "The Intimate but Controversial Relationship between Proton Channels and the Phagocyte NADPH Oxidase."
- September 27, 2004. Department of Pulmonary and Critical Care Medicine, Feinberg School of Medicine, **Northwestern University**, Chicago, IL. "Functions of Proton Channels in Alveolar Epithelium and Other Cells."
- October 8, 2004. Division of Infectious Diseases, **University of Iowa**, Coralville, IA. "The Intimate but Controversial Relationship between Proton Channels and the Phagocyte NADPH Oxidase."
- December 14, 2004. Abteilung Neurophysiologie, Institut für Physiologie, **Humboldt University**, Berlin, Germany. "The Intimate but Controversial Relationship between Proton Channels and the Phagocyte NADPH Oxidase."

- April 8, 2005. Department of Pharmacology, **University College London**, London, England, U.K. "Proton Channels and Their Role in Phagocytes: Some Biophysics and Some Controversies."
- March 20, 2006. Department of Physiology, **Semmelweis University, Budapest**, Hungary. "Electrophysiology of the Phagocyte Respiratory Burst."
- November 30, 2006. Interdisciplinary Program in Biomedical Sciences, **University of Florida**, Gainesville, FL. "The Intimate but Controversial Relationship between Proton Channels and the Phagocyte NADPH Oxidase."
- May 24, 2007. Department of Biochemistry and Biophysics, Arrhenius Laboratories for Natural Sciences, **Stockholm University**, Stockholm, Sweden. "Voltage-gated Proton Channels."
- September 27, 2007. Department of Physiology, **University of Pennsylvania School of Medicine**, Philadelphia, PA. "Voltage-gated Proton Channels."
- November 28, 2007. **Children's Hospital Oakland Research Institute (CHORI)**, Oakland CA. "The Intimate but Controversial Relationship between NADPH Oxidase and Voltage-gated Proton Channels."
- November 30, 2007. Department of Pharmacology, **University of California at Davis**, Davis, CA. "The Intimate but Controversial Relationship between Proton Channels and the Phagocyte NADPH Oxidase."
- April 28, 2009. Department of Pathology and Laboratory Medicine, **Emory University School of Medicine**, Atlanta, GA. "The Intimate and Mysterious Relationship between Proton Channels and NOX2 - the Phagocyte NADPH Oxidase."
- September 14, 2009. Molecular Structure and Function program, **The Hospital for Sick Children**, Structural Biology & Biochemistry, Department of Biochemistry, **Toronto**, Ontario, Canada. "The Marvelous and Unique Voltage-gated Proton Channel."
- September 7, 2010. Department of Physiology and Biophysics, **University of Miami**, Coral Gables, FL. "Voltage Gated Proton Channels: More Than Just Primordial Voltage Sensing Domains."
- March 9, 2011. Institute for Marine and Environmental Technology, **University of Maryland Center of Environmental Science**, Baltimore, MD. "Voltage Gated Proton Channels from *Karlodinium veneficum* to *Homo sapiens*."
- November 10, 2011: Department of Cell Physiology and Molecular Biophysics, **Texas Tech University Health Sciences Center**, Lubbock, TX. "Voltage-gated Proton Channels."
- September 12, 2012. Department of Biochemistry, **City College of New York**. "Mechanism of the Selectivity of a Voltage-gated Proton Channel."
- October 16, 2012. Department of Medicine, **University of Illinois at Chicago**. "The Many Functions of Voltage Gated Proton Channels."
- August 26, 2014. Institute of Complex Systems (ICS-4 Zelluläre Biophysik), Forschungszentrum Jülich, Jülich, Germany. "The Voltage-gated Proton Channel: Intelligent Design by Evolution."

Invited Lectures and Symposia

- June 6, 1984. Minisymposium. **FASEB Meetings**, St. Louis. "Differences in Ion Channel Expression in T Lymphocytes from MRL-lpr and MRL-+/+ Mice", T.E. DeCoursey, K.G. Chandy, M. Fischbach, N. Talal, M.D. Cahalan and S. Gupta.
- April 28, 1987. Mini Symposium, **Chicago Heart Association Research Forum**, Chicago Medical School. "K-Channels in Type II Alveolar Epithelial Cells."

- July 3, 1995. **Bioenergetics Gordon Research Conference**. Proctor Academy, Andover, New Hampshire. "Voltage-activated Proton Channels."
- April 27, 1996. **McPherson College Science Alumni Symposium**. "Voltage-activated Proton Channels in Mammalian Cells."
- May 4, 1996. **Ontario and Western New York Ion Channel Interest Group** meeting. University of Toronto. "Voltage- and Proton-gated Proton Channels: for Relief from Acid Build-up."
- October 21, 1998. **Research Workshop of the Israel Science Foundation on Proton Solvation and Proton Mobility**, Neve-Ilan, Israel. "Voltage-Gated Proton Channels in Mammalian Cells: Protons Carry Current and Regulate Gating."
- August 20, 2000. **International Symposium on Proton Transport in Liquids, Solids, and Proteins**. **American Chemical Society** National Meeting in Washington, D.C. "Inferences about Function-Structure Relationships of Voltage-gated Proton Channels in Cell Membranes."
- September 14, 2001. **First International Meeting on Proton Channels**. Villars, Switzerland. "What Can Function Tell Us about Structure of Proton Channels?"
- May 8, 2002. **Symposium on Cardiac and Skeletal Electrophysiology. A Tribute to Professor Otto Hutter**. **Institute of Physiology, Glasgow University**, Glasgow, Scotland, U.K. Organisers: Godfrey Smith and David Eisner. "Still Making Noise Twenty Years Later."
- June 12, 2002. International Conference: **Membrane Bioelectrochemistry: From Basic Principles to Human Health, sponsored by the Russian Academy of Sciences**, at the A.N. Frumkin Institute of Electrochemistry, Moscow. "Voltage-gated Proton Channels in Mammalian Cells."
- November 18, 2002. **Cold Spring Harbor Symposium on Oxidases in Inflammation and Cellular Signaling**. Banbury Center, Cold Spring Harbor Laboratory. "Interactions Between NADPH Oxidase and Voltage-Gated Proton Channels."
- August 23, 2003. **126th Nobel Symposium. Membrane Proteins: Structure, Function, and Assembly**. Friiberghs Herrgård, Stockholm, Sweden. "Interactions between NADPH Oxidase and Voltage-Gated Proton Channels: Why Electron Transport Depends on Proton Transport."
- August 12, 2004. **Telluride Science Research Conference: The Translocation of Protons in Biological Systems**. Telluride, CO. *Invited talk*: "Update on Voltage-Gated Proton Channels."
- April 11-12, 2005. **Proton Conduction in Diverse Media**. Fitzwilliam College, The University of Cambridge, Cambridge, England, U.K. *Keynote address*: "Voltage-gated Proton Channels: Structure from Function."
- June 12-17, 2005. **Phagocytes Gordon Conference**. Connecticut College, New London, CT. *Invited talk*: "Electron Transport Through the Phagocyte NADPH Oxidase Requires Proton Efflux."
- February 26 - March 3, 2006. **Gordon Research Conference on Protons and Membrane Reactions**, Ventura, CA. *Invited talk*: "Phagocytes Need Voltage-gated Proton Channels - Nothing Else Will Do!"
- March 17, 2006. **Phagocyte Workshop, European Society for Clinical Investigation**. Prague, Czech Republic. *Invited talk*: "The antibacterial activity of human neutrophils and eosinophils requires proton channels, not large conductance calcium-activated K⁺ channels."
- June 27, 2006. "**Proton Solvation and Transport in Chemistry, Biology, and Materials Science: 200 Years After Grotthuss**," a workshop sponsored by the Office of Basic Energy Sciences of the United States Department of Energy (DOE). Washington, D.C. *Invited speaker*: "Biological Proton Channels, with Special Emphasis on Voltage-gated Proton Channels."

- October 19, 2006. **Gordon Research Conference on "NOX family NADPH oxidases"**. Les Diablerets, Switzerland. *Invited talk*: "Advantages of Voltage-gated Proton Channels in Charge Compensation for the Phagocyte NADPH Oxidase."
- March 16, 2007. "**Electrochemical Signaling by Membrane Proteins: Biodiversity and Principle.**" SOKENDAI International Symposium/36th SERIKEN Conference. Okazaki, Japan. *Invited talk*: "Voltage-gated Proton Channels: pH-dependent and Voltage-Dependent Gating, Proton Channel Functions."
- March 22, 2007. "**Molecular and Cellular Mechanisms in Proton-Signaling.**" Symposium of the Japan Physiological Society. Osaka, Japan. *Invited talk*: "Four Functions of Proton Channels During the Phagocyte Respiratory Burst."
- June 12, 2007. **Mechanisms of Membrane Transport Gordon Research Conference**. Tilton, NH. *Invited talk*: "The Voltage-Gated Proton Channel."
- July 29-August 3, 2007. **Telluride Science Research Conference: Workshop on Proton Transport and Solvation in Biology and Models Systems**. Telluride, CO. *Invited talk*: "Voltage-Gated Proton Channels."
- August 23, 2007. Symposium on "**Biological Ion Channels: From Molecular Structure to Cellular Function**" [Rob D. Coalson & Maria Kurnikova, organizers] at the National American Chemical Society meeting Boston, MA. *Invited talk*: "Voltage-gated proton channels: An update."
- February 5, 2008. Chaired Symposium on "**Voltage-Dependent Proton Channels Come of Age**" at the Biophysical Society Annual Meeting and IUPAB International Biophysics Congress, in Long Beach, California. *Invited talk*: "Voltage-Gated Proton Channels: Functional Properties and Mechanisms."
- February 28, 2009. Membrane Biophysics Subgroup session "**Ion Channels with Borderline Personalities.**" [Criss Hartzell organizer] at the Biophysical Society meeting in Boston. *Invited talk*: "Voltage-Gated Proton Channels on the Edge of Reason."
- February 21, 2010. Chaired **Symposium: "The Proton Gets Channeled"** at the Biophysical Society Annual Meeting in San Francisco, California, February 20-24, 2010.
- August 2-6, 2010. **Telluride Science Research Conference: Proton Transfer in Biology**. Telluride, CO. *Invited talk*: "Voltage Gated Proton Channels Turn Out to be Even Cooler than Anyone Ever Imagined!"
- October 25-27, 2011. **40 Years of Ion Channels: A Marriage of Convenience**. (A Celebration of Ramon Latorre's 70th birthday). Valparaiso, Chile. *Invited talk*: "What makes the voltage-gated proton channel the world's most selective ion channel?" <http://www.uv.cl/pdn/?id=3922#>
- February 19-24, 2012. **Protons & Membrane Reactions Gordon Research Conference** in Ventura, CA. Session chair, "Channels and Transporters."
- July 16-20, 2012. **Telluride Science Research Conference: Proton Transfer in Biology**. Telluride, CO. *Invited talk*: "Attempts to Understand How Proton Selectivity Works."
- Feb 2-6, 2013. Chaired **Proton Channels Symposium** at 57th Biophysical Society Annual Meeting, Philadelphia, PA. Gave a talk: "Selectivity of the voltage gated proton channel Hv1."
- April 28, 2014. **Symposium: "The Physiology of HVCN1"** at the Experimental Biology meeting in San Diego. April 26-30, 2014. *Invited talk*: "The Physiology of Voltage-gated Proton Channels."
- June 29-July 4, 2014. **Telluride Science Research Conference: Proton Transfer in Biology**. Telluride, CO. *Invited talk*: "The Proton Channel (Hv1) Looks Like a VSD, but Does it Move Like One?"
- July 6-11, 2014. **Gordon Research Conference: Ion Channels**. New Hampshire. *Invited talk*: "The voltage-gated proton channel: A VSD with attitude!"