CURRICULUM VITAE

(Updated: January 2023)

1. Personal:

Name: Dixon J. Woodbury
Academic Rank: Professor
Department: Physiology and Developmental Biology

Office Address: Department of Cell Biol. & Physiology
Brigham Young University
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Provo, UT 84602
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2. Educational History:

Name of Institution	Year Graduated	Major	Degree
University of California, Irvine	December 1986	Physiology and Biophysics	Ph.D.*
University of Utah	June 1980	Physics	B.A.
University of Utah	June 1980	Chemistry	B.A.

*Dissertation topic: Vesicle-Membrane Fusion; Advisor: Professor James E. Hall

3. Professional Positions

Employer	Dates	Position
Department of Physiology and Dev. Biol. Brigham Young University	2012-2018	Chair
Department of Physiology and Dev. Biol. Brigham Young University	2003-present	Professor
Department of Physiology and Dev. Biol. Brigham Young University	2001-2003	Associate Professor
Department of Physiology, Wayne State University School of Medicine	1997-2001	Associate Professor (with tenure)
Department of Physiology, Wayne State University School of Medicine	1990-1997	Assistant Professor
Howard Hughes Medical Institute (at Brandeis University)	1989-1990	Research Associate
Brandeis University (Waltham, MA); Graduate Department of Biochemistry	1986-1989	Postdoctoral Fellow

4. Professional Societies:

Biophysical Society
- Membrane Fusion, Fission and Traffic Subgroup
- Membrane Structure and Function Subgroup

Society for Neuroscience (National)
- Society for Neuroscience, Intermountain Chapter

5. Honors/Awards:

2008: College Professorship Award, Brigham Young University

2004: College Creative Achievement (Research) Award, Brigham Young University

2003: Departmental Achievement and Service Award, Brigham Young University

2000: University Service Award, Wayne State University School of Medicine

1997: College Teaching Award, Wayne State University School of Medicine.

1986-88: Muscular Dystrophy Association Postdoctoral Fellowship.

1986: Harold E. Lamport Award, Biophysical Society.

1980, 1985: Regents' Fellowship, University of California.

1980: B.A. - magna cum laude in Chemistry, University of Utah.

6. Committees and Professional Citizenship Activities:

Departmental Service:

Department of Cell Biology and Physiology (previously: Department of Physiology and Developmental Biology) at BYU
Rank and Status Committee, 2018-present
Department Chair, 2012-2018
Chair, Graduate Committee, 2003-2012
Curriculum Committee, 2002-2003

Neuroscience at BYU
Graduate Committee, 2018-present
Associate Director, Neuroscience Center, 2005-2010

Zoology Department at BYU
Graduate Committee (Zoology Department and Department "B"), 2001

Physiology Department at WSU
Graduate Committee, 1994-2001.
Sabbatical Leave Committee, 1994-95, 1999-2001.
Faculty Search Committee, 1996-97,1998-2000.
Salary Committee, 1996-97,1998-99.
Finance Committee, 1996-97.
Computer Hardware Committee, 1995-96.
Committee on Computer Assisted Instruction, 1991-95.
Strategic Planning Committee, 1992.

Other Departmental Duties at WSU:

Founder and administrator of Summer Undergraduate Research Fellowship (SURF) program in physiology. The SURF program has an annual budget of $7,800 which provides matching support for up to 6 undergraduates to work in a laboratory within the department. Each selected student spent the summer working on a short research project in the laboratory of their choice. Typically about 10-25% of all applicants are accepted into the program each year, of which one student later applies and is accepted into the departmental Ph.D. program. SURF projects often lead to published papers and a number of abstracts/posters each year. 1992-2001.

Co-Supervisor of the Department's Senior Lab Technician, Christine Cupps. 1996-1999.

Organizer (and co-founder) of the Membrane Physiology Journal Club (MPJC). The MPJC has about 32 active members from 8 divisions or departments who regularly present original research or journal articles to the rest of the group. 1991-1998.

College Service:

College of Life Sciences (previously: Biology and Agricultural Sciences) at BYU

Rank and Status Committee, 2020-present
College Graduate Council (2006, 2010-2012)
Health Professions Office Review Committee (2002-2003)
College Curriculum Committee (2002-2003)

Medical School at WSU :

IBS (Interdisciplinary Biomedical Sciences) Recruitment and Selection Committee 1998-2001.

Selected for evaluation of Graduate-Professional Scholarship Applications, 1994.

Supplemental Research Equipment Fund Review Committee - Medical Subcommittee, 1993.

Neuroscience Program Colloquium Committee (planned the 18th Gordon H. Scott Colloquium on "Ion Channel: Structure and Function" and gave introductory remarks), 1991.

University Service

Brigham Young University

Experiential Learning Strategic Planning Group, 2018-2019
Chair, Department of Physiology and Developmental Biology, 2012-2018
Member, University Graduate Council, 2010-2012
Member, University Academic Review Committee, 2010-2012

Wayne State University

Faculty Representative to the Board of Governors Student Affairs Committee, 2000.
Student Support Services Advisory Committee, 1999-2000
University Academic Senate, 1997-2000.

- Facilities and Support Services Committee, 1997-1998.
- Student Affairs Committee, 1998-2000.
- By-laws Ad hoc Committee, 1998-1999.
- **Chair**, Student Affairs Committee, 1999-2000

Supplemental Research Equipment Fund Review Committee - Life Sciences Subcommittee, 1995.
Graduate Recruitment Fair, Wayne State University, 1993.
Research and Graduate Programs Committee on Graduate Curriculum, 1992.
Research and Graduate Programs Committee on Neuroscience Curriculum, 1991.

Regional/National/International Service:

International Teaching:

Team instructor for the ELECTRAIN course. This 2-week intensive training course in electrophysiology is taught in Göttening Germany and sponsored by FENS (Federation of European Neuroscience Societies), 2019,2022.

Advisory Boards:

Biophysical Society - IOP (eBook) 2020-2023.

Editorial Boards:

Advances in Planar Lipid Bilayers and Liposomes (Serial), Elsevier, 2004-2011.

Journal Reviewer for:

Autophagy
American Journal of Physiology
Biochimica et Biophysica Acta
Biophysical Journal
Biotechnology Progress
Cell Biochemistry and Biophysics
Chemistry and Physics of Lipids
Frontiers in Molecular Neuroscience
Journal of General Physiology
Journal of Biological Chemistry
Journal of Biomaterials Science
Journal of Membrane Biology
Journal of Physical Chemistry
Journal of Physiology
Journal of the American Chemical Society
Journal of Visualized Experiments
Nature Communications
Molecular Membrane Biology
Proceedings of the National Academy of Sciences

Grant reviews:

Biotechnology and Biological Sciences Research Council (BBSRC, United Kingdom), 2020, 2021
Medical Research Council (MRC, United Kingdom), 2019
NIH: NIH ZRG1 BCMB-D Program Project study section, 2016
Biotechnology and Biological Sciences Research Council (BBSRC, United Kingdom), 2015.
NIH: Special Emphasis Panel, Membrane Fusion Program Project, 2015.
Biotechnology and Biological Sciences Research Council (BBSRC, United Kingdom), 2014
Austrian Science Fund (FWF): *Ad hoc* reviewer, 2007.
NSF: *Ad hoc* reviewer, 2006.

NIH: Special Emphasis Panel , Membrane Fusion Program Project, 2004.
NIH: Special Emphasis Panel "SNAREs in CNS", MDCN-7(03), 2002.
NIH: Special Emphasis Panel, "Synaptic Function", MDCN-7(01), 2002.
NIH: *Ad hoc* reviewer, 1997.
NSF: *Ad hoc* reviewer, 1997.
NASA: *Ad hoc* reviewer for American Institute of Biological Sciences (AIBS), 1991.

Committees:

Member: Association of Chairs of Departments of Physiology (ACDP), 2014-2018.
-Member: ACDP Task force on Physiology concepts, 2016-2017.
Chair, Exocytosis/Endocytosis Subgroup of Biophysical Society, 2017-2018.
Executive committee, Exocytosis/Endocytosis Subgroup of Biophysical Society, 2005-2006, 2016-2019
Program Chair and Meeting Organizer, Michigan Chapter, Society for Neuroscience. 1992-1993.
Co-Chairperson, Biophysical Society Meetings, session on Membrane Fusion, 1989.

7. Teaching (last five years)

A. Brigham Young University (2017-present)

1. Undergraduate Classes Taught (ongoing)

CELL 362 (formally PDBio 362, Advanced Physiology, 3CR)
Neuro 694R (Graduate Presentation, 0.5 CR)
CELL 550R (special topics in electrophysiology, 1-2 CR)
Team taught:
CELL 568 (formally PDBio 568, 30%, Biophysics, 3CR)
Neuroscience 601 (8 lectures, Grad. Neuroscience, 3 CR)
CELL 662 (Graduate Physiology, 3CR)
Mentored Lab Research
PDBio 295R, 495R, Neuro 449R

2. Undergraduate research students mentored last 5 years (students that have been trained and are performing research experiments, listed alphabetically by first name)

2022

27 students in 4 Teams,

A-team: Alexia Busson, Dmitry Artemyev, Hunter Malquist, Jade Bookwalter, Jared King, Joe Jackson, Jurgen Mehlhaff, Kade Johnson, Kaden Taylor, Liam Eccles, Logan England, Mike Zeyer, Sean Lavering.

Bilayer-team: Ayden Olsen, Camille Bryner, Jared Leblow, Juliana Banks, Samuel Dallon.

CD-team: Ben Shields, Jarom Sumsion, Lizzy Lucero, Tasha Chambers, Tucker Cox

Redox-team: Alisa Morrell, Emily Mergenthaler, Natalie Salerno, Sai Harsha Nagidi

2021

31 students: Alexia Busson, Alisa Morrell, Ayden Olsen, Ben Shields, Bryson Walker, Daniel Isemonger, Elizabeth Hick, Emily Mergenthaler, Jacob McKell, Jade

Bookwalter, Jared King, Jared Leblow, Jarom Sumsion, Justin Brackshaw, Kade Johnson, Kaden Taylor, Kjetil Collett, Liam Eccles, Lizzy Lucero, Logan England, Mark Parsons, Matt Wright, Natalie Salerno, Ryan Knapp, Ryan Sorensen, Sai Harsha Nagidi, Sam Shumway, Samuel Dallon, Sean Lavering, Tasha Chambers, Tucker Cox

2020

36 students: Aidan Mourik, Alayna Liddiard, Andrew Barton, Austin Gamble, Austin Zimmerman, Ayden Olsen, Brady Anderson, Britten Fawcett, Bryson Walker, Chad Mourino, Chandler McSpadden, Damara Kitchens, Daniel Rose, Elizabeth Hick, Garrison Park, Graham Pingree, Jackson Bryson, Jacob Facer, Jacob McKell, Jared Leblow, Jarom Sumsion, Justin Brackshaw, Karina Vance, Keith Menser, Kjetil Collett, Liam Eccles, Mark Parsons, Matt Wright, Natalie Salerno, Nick Fardos, Ryan Chatwin, Ryan Knapp, Ryan Sorensen, Sai Harsha Nagidi, Sam Shumway, Samuel Dallon, Spencer Barlow

2019

41 students: Aidan Mourik, Alayna Liddiard, Andrew Barton, Angie Pope, Austin Gamble, Austin Zimmerman, Ayden Olsen, Brady Anderson, Britten Fawcett, Bryson Walker, Chandler McSpadden, Dallin Jones, Damara Kitchens, Devin Fuller, Elizabeth Hick, Emily C. Whitt, Garrison Park, Graham Pingree, Jackson Bryson, Jacob Facer, Jared Dixon, Johnny Cook, Justin Brackshaw, Karina Vance, Keith Menser, Kjetil Collett, Logan Loomis, Mark Parsons, Matt Pettit, Matt Wright, Michael Nemrow, Miguel Ibarra, Natalie Coy, Nick Fardos, Ryan Chatwin, Ryan Sorensen, Sai Harsha Nagigi (Harsha), Sam Shumway, Tommy Walker, Tyler Potts, Wade Whitt.

2018

29 students: Aidan Mourik, Alex Linton, Andrew Barton, Angie Pope, Austin Gamble, Austin Zimmerman, Ayden Olsen, Brady Anderson, Bryson Walker, Chandler McSpadden, Dallin Jones, Devin Fuller, Emily C. Whitt, Graham Pingree, Jackson Bryson, Jacob Facer, Jared Dixon, Jeff Ward, Johnny Cook, Keith Menser, Logan Loomis, Maddie Neuberger, Matt Pettit, Matt Wright, Michael Nemrow, Miguel Ibarra, Natalie Coy, Tommy Walker, Wade Whitt.

3. Graduate students mentored (excluding 1st year rotation students)

Master Thesis directed:

1. **Advisor, Tanner Blocker**, Cell Biology and Physiology Masters Student (2022-)
2. **Advisor**, **Alex Dabell**, Physiology and Developmental Biology Masters Student (2010-2014)
3. **Advisor**, **Nozomi Ogawa**, Neuroscience Masters Student (2010-2012)
4. Committee member, **Sarah Motley**, Neuroscience Masters Student (2011-2013)
5. Committee member, **Hannabeth Franchino**, Physiology and Developmental Biology Masters Student (2010-2011)
6. Committee member, **Emily Peterson**, Physiology and Developmental Biology Masters Student (Winter 2009-2010)

7. Committee member, **Abhishek Trikha**, Neuroscience Masters Student (2008-2010)
8. Committee member, **David Graff**, Biochemistry Masters Student (2008-2009)
9. **Advisor**, **Sarah Broderick**, Neuroscience Masters Student (Winter 2008-2008)
10. Committee member, **Bradley Strongin**, Physiology and Developmental Biology Masters Student (2006-2007)
11. **Advisor**, **Derek Martinez**, Neuroscience Masters Student (Fall 2005-Sp2007) "Palmitoylation and oxidation of the cysteine rich region of SNAP-25 and their effects on protein interactions"
12. Committee member, **Kim Baer**, Integrative Biology Masters Student (Fall 2005-2007)
13. **Advisor**, **J. Craig Moffat**, Physiology and Developmental Biology Masters Student (Fall 2004-2006). "Properties of conductance and inhibition of proton channels: M2 from influenza A virus and Fo from Escherichia coli ATP synthase"
14. Committee member, **Elise Barber**, Neuroscience Masters Student (Fall 2004-2006).
15. Committee member, **Mario Pinoli**, Physiology and Developmental Biology Masters Student (Fall 2004-2005).

Ph.D. Dissertations directed:

1. **Advisor**, **Robert E. Coffman**, Neuroscience Doctoral Student (2017-2022)
2. Committee member, **Kelly McGuire**, Physiology and Developmental Biology Doctoral Student (2013-2020)
3. Committee member, **David Hedges**, Biochemistry Doctoral Student (2012-2016)
4. Committee member, **Adhari Alzaabi**, Physiology and Developmental Biology Doctoral Student (2011-2016)
5. Committee member, **Catalina Matias**, Biochemistry Doctoral Student (2011-2016)
6. Committee member, **Collin Merrill**, Physiology and Developmental Biology Doctoral Student (Winter 2009-2014)
7. Committee member, **Robert Hilton**, Biochemistry Doctoral Student (2007-2011)
8. Committee member, **David Allison**, Neuroscience Doctoral Student (2006-2009)
9. Committee Member, **Naomi Hunsaker**, Neuroscience Doctoral Student (Fall 2005-2009)

B. Wayne State University (1990-2001):

1. Summary of Classes Taught

Undergraduate

ME 510 - Physiology for Engineers (30-50 students), 1992-1996. (15 lectures).
IHS 310 - Basic Mechanisms of Human Disease (~200 students), 1996 (5 lectures)
PSL 322 - Human Physiology for Undergraduates (~50 students), 1995 (3 lectures)
Co-Coordinator: ME 510 - Physiology for Engineers (30-50 students), 1993-1996

Graduate

IBS 7020 – Interdisciplinary Graduate Cell Biology (~35 students), 5 hours, 1998-2000.

PSL 7020- Graduate Physiology Lab (4-8 students), 20 hrs, 1992-2000.

PSL 7030 - Graduate Physiology, Acid-Base Regulation Lectures (~120 students), 2 hr, 1993, 1995-2001

PSL 7190 - Neuroscience Survey Course (~60 students), 2 hr, 1991-2000.

PSL 7500 - Developmental Physiology (~50 students), 5 hr, 1996-2000.

PSL 7640 - Biology and Molecular Physiology of the Cell (~12 students), 1 hr, 1991-2001.

PSL 7660 - Advanced Neurophysiology (~12 students), 4 hr, 1992-2000.

Special Training (Surgical Research Services) – Acid/Base Regulation (3 students). 2 hr lecture. 1998.

Course Coordinator: PSL 7020 - Graduate Physiology Lab, 1997-2000.

Co-Coordinator: PSL 7190 - Neuroscience Survey Course, 2 hr, 1991-2000.

Course Coordinator: PSL 7500 - Developmental Physiology, 1992-1999.

Medical and Professional

Post-baccalaureate Program, Cell and Renal Physiology Lectures (20 students), 24 hr, 1991-2000

Acid-Base Regulation Lectures, Medical Physiology (250 Year I medical students), 3 hr, 1993-2001.

Renal and Acid-Base Physiology Review (250 Year II medical students), 1 session, 1993-2001.

Med Careers Mentoring Program (15 medical students), 1999-2001.

2. Research/Theses/Dissertations Directed

Undergraduate Research Projects Directed

1. **Nikita Plummer**, summer 2000-spring 2001
2. **Maria Crėdi**, spring/summer semester, 1999.
3. **Katherine Rognlien**, spring/summer semester, 1997.
4. **Lisa Braun**, spring/summer semester, 1996.
5. **Jason Middleton**, spring/summer semester, 1995.
6. **Thomas Kraemer**, spring/summer semester, 1994.
7. **Ron Miller**, spring/summer semester, 1993.
8. **Marie Kelly**, spring/summer semester, 1992.

Master Thesis directed:

1. Advisor, **Katherine Rognlien**, physiology masters student, (1997-2001). "Syntaxin domains necessary for fusion of both modified synaptic vesicles and synaptobrevin-doped vesicles with planar lipid membranes"
2. Committee member, **Jurek Huszczo**, basic medical science masters student. (2000-2001).
3. Committee member, **Henri Vaitkevicius**, physiology masters student. (1999-1999).
4. Committee member, **Andrew C. Hammond**, basic medical science masters student. "The effect of $[K^+]$ on the Ca^{2+}/calmodulin mediated inhibition of red cell Na^+/K-ATPase" (1999-2001).

5. Committee member, **Joshua Herskovic**, basic medical science masters student. "Ionic currents in Pericytes" (1999-2001).
6. Advisor, **Rodrigo O. Reis**, basic medical science masters student. (1998-2001).
7. Committee member, **Feng Gao**, physiology masters student. "Isolation, purification, and characterization of PLA_2 from human red cells" (1998-1999).
8. Advisor, **John J. Pomann III**, basic medical science masters student. "Design for a flexible neurophysiological data acquisition system specifically configured for monitoring skull-base surgery in an animal model" (1996-1997).
9. Committee member, **Douglas A. Crosby**, basic medical science masters student. "LDL mediated gene therapy for non-insulin dependent (type II) diabetes mellitus." (1995).
10. Committee member, **Sung Won Choi**, basic medical science masters student. "Role of membrane bound calmodulin in Ca-dependent inhibition of the Na, K-ATPase in human red blood cells." (1994-1995).
11. Advisor, **Stephen Alix**, basic medical science masters student. "Liposomal encapsulation of Doxorubicin in the treatment of cancer" (1994-1996)
12. Committee member, **Jing Ye-Hu**, physiology masters student. "Effects of Ca-dependent proteins on Ca-induced inhibition of the Na, K-ATPase." (1991).

Ph.D. Dissertations directed:

1. Advisor, **Mike Franklin**, physiology graduate student, "Calculation, comparison and modeling of single channel proton flux across reconstituted wildtype and mutant F_o of the F_1F_o ATPase from Escherichia coli" (1999-2003).
2. Advisor, **Jing Yang (Nancy) Cao**, physiology graduate student, Characterization of reconstituted wildtype and mutant F_0 of the F_1F_0 ATPase from Escherichia coli" (1995-2000).
3. Committee member, **Ana Y. Estevez**, physiology graduate student, "Osmoregulatory mechanism in the *in vivo* rat cerebral cortex", (1995-1999).
4. Committee member, **Feiteng Su**, anatomy graduate student, "Expression of the plasma membrane calcium ATPase in Edinger-Westphal nerve terminals" (1997-1998)
5. Committee member (minor advisor), **C. M. Ellen Taft**, School of Nursing doctoral student with a minor in Physiology, (1996-1997)
6. Committee member, **Douglas J. Gould**, anatomy graduate student, "Glial changes in the phrenic nucleus following superimposed central and peripheral nervous system injuries", (1996-1997)
7. Committee member, **Yanxiang Chen**, biochemistry graduate student, "Mechanisms of arsenical resistance in Escherichia coli: the roles of arid and arsB in metalloregulation and transport of arsenite", (1993-1997).
8. Advisor, **Marie Kelly**, physiology graduate student, "Ion channels from cholinergic synaptic vesicle membranes reconstituted into bilayers" (1992-1997).
9. Committee member, **Jess Lucus**, physiology graduate student, "Identification of Thrombospondin-binding proteins from human platelets: The interaction of Thrombospondin with platelet myosin" (1992-1996).

10. Committee member, **Randy A. Schemidt**, biochemistry graduate student, "Assembly and function of the Escherichia Coli F_1F_0 ATPase β and c subunits", (1994-1995).
11. Committee member, **Mansim Okafor**, physiology graduate student, "The role of sodium and phospholipase A2 in calcium/calmodulin inhibition of the Na,K-ATPase of human red blood cells", (1993-1995).
12. Committee member, **Michelle Petrak**, physiology graduate student. "Structure-function analysis of bacteriorhodopsin and related pigments of *Halobacteria halobium*" (awarded 1994).
13. Committee member, **Paul Standley**, physiology graduate student, "Insulin attenuation of intracellular calcium responses in vascular smooth muscle cells", (awarded 1992).
14. Committee member, **Cynthia Ann Janusz**, physiology graduate student. "Electrophysiological analysis of the modulatory actions of adenosine on hippocampal CA3 pyramidal neurons: Evidence of anticonvulsant properties in an in-vitro model of epilepsy" (awarded 1992).

Postgraduate Research directed:

1. **Aparajita Ghosh**, Ph.D. (1998-1999)
2. Sue **Kanchana**, Ph.D. (also a Year II Medical Student), (1995-1996).

8. Scholarship

Publications (excluding abstracts):

Original observations in refereed journal

1. Coffman, R.E., K.N. Kraichely, A.J.B. Kreutzberger, V. Kiessling, L.K. Tamm, and **D.J. Woodbury.** 2022. Drunken lipid membranes, not drunken SNARE proteins, promote fusion in a model of neurotransmitter release. *Front Mol Neurosci*. 15:1022756.
2. Paxman, J, B. Hunt, D. Hallan, S. Zarbock, and **D. J. Woodbury**. 2017. Drunken Membranes: Short-Chain Alcohols Alter Fusion of Liposomes to Planar Lipid Bilayers. *Biophysical. J.* 112:121-132.
3. McNally, J. M., E. E. Custer, S. Ortiz-Miranda, **D. J. Woodbury**, S. D. Kraner, B. M. Salzberg, and J. R. Lemos. 2014. Functional ryanodine receptors in the membranes of neurohypophysial secretory granules. *J Gen Physiol*. 143:693-702.
4. Ogawa N, Taylor RM, **Woodbury DJ**, and Prince JT. 2013. Resolving Double Disulfide Bond Patterns in SNAP25B Using Liquid Chromatography-Ion Trap Mass Spectrometry. *J. Mass Spectrometry*. **48**:660-668.
5. Lee, D. E. , M. G. Lew, and **D. J. Woodbury**. 2013. Vesicle Fusion to Planar Membranes is enhanced by Cholesterol and Low Temperature. *Chemistry and Physics of Lipids.*166:45-54.
6. **Woodbury, D. J.**, C. A. Rees, A. Thompson, P. Meiners, and A. Adams. 2011. An Assay to Quantitate Reducible Cysteines from Nanograms of GST-Fusion Proteins. *Analytical Biochemistry* 417:165-173.
7. Bock, L.V., B. Hutchings, H. Grubmüller, and **D. J. Woodbury**. 2010. Chemomechanical regulation of SNARE proteins studied with molecular dynamics simulations. *Biophysical. J.* 99:1221-1230.

8. Moffat, J. C., V. Vijayvergiya, F. P. Gao, T. A. Cross, **D. J. Woodbury**, and D. Busath. 2008. Proton Transport through Influenza A Virus M2 Protein Reconstituted in Vesicles. *Biophysical J.* **94**:434-445.

9. Richardson, E. S., W. G. Pitt, **D. J. Woodbury**. 2007. The role of cavitation in liposome formation. *Biophysical J.* **93**:4100-4107.

10. Wilson-Ashworth, H. A., Q. Bahm, J. Erickson, A. Shinkle, M. P. Vu, **D. J. Woodbury**, and J. D. Bell. 2006. Differential Detection of Phospholipid Fluidity, Order, and Spacing by Fluorescence Spectroscopy of Bis-pyrene, Prodan, Nystatin, and Merocyanine 540. *Biophysical J.* **91**:4091-4101.

11. Helrich, C. S., J. A. Schmucker, and **D. J. Woodbury**. 2006. Evidence that nystatin channels form at the boundary, not the interior of lipid domains. *Biophysical J.* **91**:1116-1127.

12. **Woodbury, D. J**., E. S. Richardson, A. W. Grigg, R. D. Welling, and B. H. Knudson. 2006. Reducing liposome size with ultrasound: Bimodal size distributions. *J. Liposome Research* **16**:57-80.

13. Franklin, M. J., **D. J. Woodbury**, and W. S. A. Brusilow. 2004. Determination of Single Channel Proton Flux at pH 6.8 through F_o from *Escherichia coli*. *Biophysical J.* **87**:3594-3599.

14. McNally, J.M., **D.J. Woodbury** and J.R. Lemos. 2004. Syntax in 1A drives fusion of large dense core neurosecretory granules into a planar lipid bilayer. *Cell Biochemistry and Biophysics* **41**:11-24.

15. Cao, N. J., W. S. A. Brusilow, J. J. Tomashek and **D. J. Woodbury**. 2001. Characterization of reconstituted F_O from wildtype Escherichia coli and identification of two other fluxes co-purifying with F_O. *Cell Biochemistry and Biophysics* **34**:305-320.

16. **Woodbury, D. J.**, and K. Rognlien. 2000. The t-SNARE Syntaxin is sufficient for spontaneous fusion of synaptic vesicles to planar membranes. *Cell Biology International*. **24**:809-818.

17. Rossi, N. F., D. S. O'Leary, **D. J. Woodbury**, and H. Chen. 2000. Endothelin-1 in hypertension in the baroreflex intact SHR: a role independent from vasopressin release. *Am. J. Physiol. (Endo)*. **279**:E18-E24.

18. **Woodbury, D. J.** 1999. Building a bilayer model of the neuromuscular synapse. *Cell Biochemistry and Biophysics.* **30**(3):303-329.

19. Scislo, T. J., R. A. Augustyniak, R. A. Barraco, **D. J. Woodbury**, and D. S. O'Leary. 1997. Activation of P_{2x}-purinoceptors in the nucleus tractus solitarius elicits differential inhibition of lumbar and renal sympathetic nerve activity. *J. Autonom. Nerv. Sys.* **62**:103-110.

20. Alix, S. N., and **D. J. Woodbury**. 1997. Phospholipase A2 action on planar lipid bilayers generates a transient, voltage-independent current. *Biophysical J.* **72**:247-253.

21. Fujii, J. T., F. T. Su, **D. J. Woodbury**, M. Kurpakus, X-J. Hu, and R. Pourcho. 1996. Plasma membrane calcium ATPase in synaptic terminals of chick Edinger-Westphal neurons. *Brain Res.* **734**:193-202.

22. O'Leary, D. S., and **D. J. Woodbury**. 1996. Role of cardiac output and peripheral resistance in spontaneous changes of arterial pressure. *Am. J. Physiol.* **271**:R641-R646.
23. Kelly, M. L., and **D. J. Woodbury.** 1996. Ion channels from cholinergic synaptic vesicle fragments reconstituted into lipid bilayers. *Biophysical J.* **70**:2593-2599.
24. Brown, R. A., M. M. Lee, A. M. Sundareson, **D. J. Woodbury,** and A. O. Savage. 1996. Influence of calcium channel blocker treatment on the mechanical properties of diabetic rat myocardium. *Acta Diabetologia*. **33**:7-14.
25. O'Regan, M. H., S. Alix, and **D. J. Woodbury**. 1996. Phospholipase A2 causes rupture of planar lipid bilayers. *Neuroscience Letters.* **202**:201-203.

(Note: the following article also reviewed the literature, so is listed under reviews.)
Woodbury, D. J. 1995. Evaluation of the evidence for ion channels in synaptic vesicles (review). *Molecular Membrane Biology*. **12**:165-171.

26. **Woodbury, D. J.**, and M. Kelly. 1994. Release of ATP from cholinergic synaptic vesicles during freeze-thaw cycling. *Cryobiology*. **31**:279-289.
27. **Woodbury, D. J.** 1990. Vesicle-membrane fusion detected by simultaneous electrical and optical measurements. *Proceedings of the Twelfth Annual International Conference of the IEEE Engineering in Medicine and Biology Society,* **12(4)**:1747-1748.
28. **Woodbury, D. J.**, and C. Miller. 1990. Nystatin-induced liposome fusion: A versatile approach to ion channel reconstitution into planar bilayers. *Biophysical J*. **58**:833-839.
29. **Woodbury, D. J.** 1989. Pure lipid vesicles can induce channel-like conductances in planar bilayers. *J. Membrane Biol.* **109**:145-150.
30. **Woodbury, D. J.**, and J. E. Hall. 1988. Role of channels in the fusion of vesicles with a planar bilayer. *Biophys. J.* **54**:1053-1063.
31. **Woodbury, D. J.**, and J. E. Hall. 1988. Vesicle-membrane fusion: Observation of simultaneous content release and membrane incorporation. *Biophys. J.* **54**:345-349.
32. **Woodbury, D. J**. 1986. Fusion of vesicles with planar bilayers: membrane fusion and content release. Ph.D. dissertation. University of California, Irvine.
33. Haigler, H. T., **D. J. Woodbury**, and E. S. Kempner. 1985. Radiation inactivation of ricin occurs with transfer of destructive energy across a disulfide bond. *Proc. Natl. Acad. Sci. USA*. **82**:5357-5359.

Review Articles and Book Chapters

34. Coffman, R.E., and **D.J. Woodbury**. 2022. Effects of anesthetics on membrane fusion and exocytosis. *In* Exocytosis: From Molecules to Cells. IOP Publishing.
35. **Woodbury, D. J**., E. C. Whitt, and R. E. Coffman. 2021. A review of TNP-ATP in protein binding studies: benefits and pitfalls (review). Biophysical Reports 1(1):100012, p1-22. https://doi.org/10.1016/j.bpr.2021.100012
36. Lemos, J. R., J. McNally. E. Custer, A. Cuadra, H. Marrero, and **D. Woodbury**, 2014. Isolated Neurohypophysial Terminals: Model for Depolarization-Secretion Coupling. Chapter 10 *in* "Exocytosis Methods", Neuromethods Vol. 83:191-220.

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39. Kelly, M. L. and **D. J. Woodbury**. 2003. Advantages and disadvantages of patch clamping versus using BLM. Chapter 25 *in* "Planar Lipid Bilayers (BLMs) and their Applications", edited by Peter Thorn. Membrane Science and Technology Series (Elsevier) Vol. 7: 699-721.

40. Rognlien, K. T. and **D. J. Woodbury**. 2003. Reconstituting SNARE proteins into BLMs. Chapter 16 *in* "Planar Lipid Bilayers (BLMs) and their Applications", edited by H. T. Tien and A. Ottova-Leitmannova. Membrane Science and Technology Series (Elsevier) Vol. 7: 479-488.

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42. **Woodbury, D. J.** 1995. Evaluation of the evidence for ion channels in synaptic vesicles (review). *Molecular Membrane Biology*. **12**:165-171.

Published Letters, Notes and Discussions

43. **Woodbury, D. J**. 2013. Is it Zippered? Does it Flare? That Darn Complexin Clamping SNARE. *Biophysical J.* **105**:835-836.

44. Busath, D, **D. J. Woodbury**, A. Frost. 2012. Endosis and exosis: New names for fusion and budding. *J. Memb. Biol*. **245**:759-760.

45. **Woodbury, D. J.** 1993. Making synaptic vesicles fuse with lipid bilayers. *Biophysical J.* **65**:973-974.

Abstracts Published (Following Presentation at National Meetings - last ten years only):

Coffman, R.E., A.J.B. Kreutzberger, V. Kiessling, L.K. Tamm, D.J. Woodbury. 2022. Do membranes or SNARE proteins mediate the effects of alcohol on vesicle fusion? *Biophysical Journal* 121(3) p228a-229a.

Olsen, A.L., R.E. Coffman, D.J. Woodbury. 2022. Gaseous delivery of volatile anesthetics to a planar membrane. *Biophysical Journal* 121(3) p230a.

Sumsion, J.S., T.V. Cox, B. Liang, S.W. Shumway, L.K. Tamm, and D.J. Woodbury. 2022. Disordered-to-Ordered Structural Changes of SNAP-25 Are Modulated by Environmental Conditions. *Biophysical Journal* 121(3) p200a.

Coffman, R.E., S.W. Shumway, A.T. Barton, M.T. Parsons, A.L. Zimmerman, R.D. Sorensen, D.J. Woodbury. 2020. Effect of Simple Anesthetics on SNARE Fusion Proteins and on Fusing Membranes, *Biophysical Journal* 118(3) p399a.

Woodbury, D.J., R.E. Coffman. 2019. Drunken Liposomes: Mechanisms of Alcohol-Altered Membrane Fusion. Poster #58. *Biophysical Society Thematic Meeting on Quantitative Aspects of Membrane Fusion and Fission*. (Padova, Italy). p71. https://www.biophysics.org/Portals/0/EasyDNNnews/Uploads/3432/Padova%20Program%20Book.pdf

Fuller, D.M., M.A. Ibarra, R.E. Coffman, A.L. Zimmerman, A.T. Barton, D.J. Woodbury. 2019. Mechanisms of Alcohol-Altered Membrane Fusion, *Biophysical Journal* 116(3) p366a.

Coffman, R.C., D.D. Busath, D.J. Woodbury. 2019. Effect of Alcohol on Water Translocation in All-Atom Simulations of Osmotic Gradient Across Lipid Membranes, *Biophysical Journal* 116(3) p87a -88a.

Nichol, A.C., M.C. Pettit, W.L. Johnson, W.J. Whitt, E.C. Whitt, S.F. Nichol, R.E. Coffman, D.J. Woodbury. 2018. Conformational Changes of SNAP-25 due to Environmental Conditions, *Biophysical Journal*, 114(3), p281a-282a.

Woodbury, D.J., D. Fuller, M.A. Ibarra, and A.L. Zimmerman. 2018. Liposome-Membrane Fusion Rates Altered by Dose and Location of Short-Chain Alcohols, *Biophysical Journal*, 114(3), p603a.

Woodbury, K.L., S.K. Zenger, P. Weitzel, C.D. Nelson, S.M. Jones, T.S. Winter, W.J. Whitt, A.C. Henriksen, D.J. Woodbury. 2017. SNARE Protein Structure Altered in Response to pH, *Biophysical Journal*, 11(3), p93a.

Woodbury, D.J., Paxman, J, B. Hunt, D. Hallan, and S. Zarbock. 2017. Drunken membranes: low doses of short-chain alcohols inhibit exocytosis in a protein-free model system. *Biophysical Journal*, *112(3)*, p.472a.

Clawson, K.S., Hallan, D., Harris, T.T., Welker, K.J., Woodbury, K.L. and Woodbury, D.J., 2016. Structural Changes in the SNARE Protein SNAP&25 by PH and Ionic Strength. *Biophysical Journal*, *110*(3), p.46a.

Paxman, J.R., S. Zarbock, B. Hunt, D. J. Woodbury. 2016. Alcohol Significantly Alters Fusigenicity of Vesicles in a Model Membrane System. *Biophysical Journal*, *110*(3), p.248a.

Hansen, J.J., Harris, T.T., Parkinson, B.J., Bryan, J.L., Welker, K.J., Buckner, B.J. and Woodbury, D.J., 2015. Environmental Perturbations that Cause Structural Changes in the SNARE Protein SNAP-25. *Biophysical Journal*,*108*(2), p.103a.

Hunt, B., J.R Paxman, D.C. Huntington, S. Zarbock, and D. J. Woodbury. 2015. Drunken Membranes: How does Ethanol Impact Fusion of Vesicles to Planar Lipid Bilayers? *Biophysical Journal*, *108*(2), p.406a.

DaBell, A.M., Reynolds, R., Gabrielsen, D.A., Cardinal, J.R. and Woodbury, D.J., 2014. In Vitro Palmitoylation and Oxidation of the SNARE protein SNAP-25. *Biophysical Journal*, *2*(106), p.311a.

Woodbury, D.J., Doyle, N.S., Ogawa, N., Taylor, R.M. and Prince, J.T., 2013. In Vitro Oxidation of Snap-25 Leads to Double Disulfide Bond Formation and Protein Destabilization. *Biophysical Journal*, *104*(2), p.622a.

José R. Lemos, James McNally, Cristina Velazquez-Marrero, Edward Custer, Brian Salzberg, Dixon J. Woodbury, Sonia Ortiz-Miranda. 2013. Role of intracellular calcium in release from nerve terminals. Biophys. J. 104:11a (Supplement).

Dixon J. Woodbury. 2012. Vesicle-membrane fusion is enhanced by cholesterol and low temperature. Biophys. J. 102(3):8a (Supplement).

Dixon J. Woodbury, David E. Lee, Matthew G. Lew. 2011. Cholesterol and low temperature enhance fusion of vesicles to a planar bilayer. Am. Soc. Cell. Biol. Meetings

Nozomi Ogawa, Alex DaBell, Dixon J. Woodbury. 2011. Oxidation and Palmitoylation of SNAP-25. Biophys. J. Supplement 2208-Pos

David E. Lee, Matthew G. Lew, Reed A. Doxey, Dixon J. Woodbury. 2011. Cholesterol and low temperature enhance fusion of vesicles to a planar bilayer. Biophys. J. Supplement 3432-Pos

Kevin J. Tuttle, David E. Lee, Reed A. Doxey, Dixon J. Woodbury. 2010. Decreasing temperature below Tt or increasing cholesterol enhance vesicle-bilayer membrane fusion. Biophys. J. 98(3) pp. 672a

April Adams, Liz C. Flores, and Dixon J. Woodbury. 2010. Detection of oxidation and palmitoylation in SNARE proteins. Biophys. J. 98(3) pp. 631a - 632a

Lars Bock, Brian Hutchings, Helmut Grubmüller, Dixon J. Woodbury. 2010. Chemomechanical regulation of SNARE proteins studied with molecular dynamics simulations. Biophys. J. 98(3) pp. 677a.

Scholarly Presentations

International/National Meetings:

Biophysical Society, Exo/Endo Subgroup Meetings. Feb. 2012 (invited presentation) “Fusion to Planar Membranes is enhanced by Cholesterol and Low Temperature” (San Diego, CA)

Biophysical Society Meetings. Feb. 2008 (invited presentation) “SNAP-25: Palmitoylation and membrane interactions” (Long Beach, Ca)

Membrane Biophysics of Fusion, Fission, and Rafts in Health and Disease, Sept 2007 (invited presentation) “SNAP-25: Palmitoylation and membrane interactions” (Woods Hole, MA)

American Chemical Society, 2006 (invited presentation). “Membrane interactions with nystatin and SNAP-25” (San Francisco, CA).

American Society for Cell Biology, 1999 (invited presentation). "UnSNAPping exocytosis: Synaptic vesicles fuse to membranes containing just syntaxin" (Washington, D.C.)

2nd International Workshop on ATP-Synthase and V-ATPase, 1998 (invited poster). Woodbury, D. J., N. J. Cao, and W. S. A. Brusilow. "Identification of a DCCD-insensitive proton conductance in Fo prepared from E. coli." (Osnabrück, Germany).

IEEE/EMBS Meetings, 1990 (invited presentation). "Vesicle-membrane fusion detected by simultaneous electrical and optical measurements." (Philadelphia, Pennsylvania)

Invited Seminars (last ten years only, international in bold):

- **Max-Planck-Institute for Biophysical Chemistry.** " (May 13, 2022)

-University of Virginia, Charlottesville, Virginia. "Drunken Membranes: Mechanisms of Alcohol-altered Membrane Fusion as a Model for Brain Impairment" (June 6, 2019)

-University of Magdeburg. Magdeburg Germany. "Drunken Membranes: Mechanisms of Alcohol-altered Membrane Fusion as a Model for Brain Impairment" (May 21, 2019)

- **Max-Planck-Institute for Biophysical Chemistry.** Göttingen Germany. "Drunken Membranes: Mechanisms of Alcohol-altered Membrane Fusion as a Model for Brain Impairment" (May 17, 2019)

-University of Utah, Department of Physics and Astronomy. Salt Lake City, Utah. "Cholesterol and Alcohol alter membrane structure and fusion of vesicles to membranes" (January 14, 2016)

- **Max-Planck-Institute for Biophysical Chemistry.** Göttingen Germany "Modulation of Exocytosis by Cholesterol, Alcohol and Oxidation" (Dec. 19, 2014).

- **VU University Amsterdam Medical Center**, Amsterdam Netherlands "Modulation of Exocytosis by Cholesterol, Alcohol and Oxidation" (Dec. 12, 2014).

- Brigham Young University, Department of Physics and Astronomy. Provo, Utah. "Looking at some fundamentals of life – or - How does a Biophysicist study Physiology?" (January 24, 2012)

9. Professional development activities and dates (past ten years)

Semester Sabbatical in Germany. Worked with Dr. Reinhard Jahn at the Max-Planck Institute for Biophysical Chemistry (Göttingen, Germany) learning three techniques: Mass Spectroscopy, Circular Dichroism, and Molecular Modeling. August 19-December 28, 2008.

Follow-up training at Planck Institute for Biophysical Chemistry (Göttingen, Germany) to learn ITC (Isothermal titration calorimetry). May 14-27, 2019.

10. Funded/pending Grants during past 20 years (current grants in bold)

Skaggs Distinguished Mentoring Fellowship award (College of Life Sciences, BYU), $20,000. Principal investigator: D. J. Woodbury. Funded: 2023-2024.

BYU Mentoring Environments Grant, $175,200 direct costs. Principal investigator: D. J. Woodbury. Funded: 2002-04,

2005-2008,2010, 2012-14, 2017-8.

NIH, R01 competitive renewal, "Biophysical characterization of the SNARE protein SNAP-25 and its interactions with membranes" Total cost: $450,000 ($300,000 direct) over 3 years. Principal investigator: D. J. Woodbury. Not funded 2008.

NIH, R01 revised, "Assembly and Conductance of F_O sector of E. coli H^+-ATPase" $881,619 over 4 years. Principal investigator: W. S. Brusilow. Co-investigator: D. J. Woodbury. Funded: 2001-2005

NIH, R01 revised, "Molecular reconstitution of neurotransmitter release" Total cost: $1,139,000 ($900,000 direct) over 5 years. Principal investigator: D. J. Woodbury. Funded: 2000-2005, 2006. (1 year continuation).

11. Miscellaneous Activities

Patents/Copyrights

Copyright on software for "General computer control and measurement of electrophysiology experiments." Inventor: D. J. Woodbury, Copyright holder: WSU. 1995

Professional consultation

Design, development and marketing of biomedical software for which WSU and Dr. Woodbury hold copyright. Biotech Products (Greenwood, IN). 1995-1999