Bruce D. Schultz

Curriculum Vitae

September 6, 2016

BRUCE D. SCHULTZ

Personal:

Work Address:	Department of Anatomy and Physiology College of Veterinary Medicine Kansas State University 127 Coles Hall 1600 Denison Avenue Manhattan, Kansas 66506-5802
Phone:	(785) 532-4839 - office (785) 532-4840 - laboratory
FAX:	(785) 532-4557
E-mail:	bschultz@vet.ksu.edu
Home Address:	38324 Plymouth Street Wamego, Kansas 66547
Phone:	(785) 456-8548 - home (785) 313-5174 - cell
Citizenship:	U.S.A.
Marital Status:	Married (Kathy) / Two children (Sara [1990] & Christian [1994])

Education:

1991	Ph.D., Cornell University, Field of Veterinary Medicine, Ithaca, New York Thesis: Pharmacological characterization of the effects of serotonin on rabbit ileal ion transport Research Advisor: Geoffrey W.G. Sharp, Ph.D., D.Sc.
1985	M.S., University of Nebraska, Department of Veterinary Science, Lincoln, Nebraska Thesis: The effect of epinephrine and/or pentagastrin on canine gastric secretion and blood chemistry Research Advisor: Edgar T. Clemens, Ph.D.
1983	B.S., University of Nebraska, College of Agriculture, Lincoln, Nebraska Dual Major: Animal Science/Agricultural Economics

Experience:

2015-2016	Interim Head, Department of Anatomy and Physiology, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas
2012-2015	Associate Department Head, Department of Anatomy and Physiology, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas
2009-	Professor, Department of Anatomy and Physiology, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas
2009-	Graduate Faculty, Graduate Biochemistry Group
2004-2009	Associate Professor, Department of Anatomy and Physiology, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas
1999-	Secondary Appointment, Kansas Agricultural Experiment Station
1998-	Graduate Faculty, Anatomy and Physiology Program
1997-04	Assistant Professor, Department of Anatomy and Physiology, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas
1995-97	Research Assistant Professor, Department of Cell Biology and Physiology,

University of Pittsburgh, Pittsburgh, Pennsylvania

1991-95 Postdoctoral Fellow, Department of Physiology and Biophysics, University of Alabama at Birmingham, Birmingham, Alabama

1994 Adjunct Professor, Department of Biology, Judson College, Marion, Alabama

1986-90 Graduate Research Assistant, Department of Pharmacology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York

1985-86 Graduate Teaching Assistant, Department of Physiology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York

1984-85 Graduate Research Assistant, Department of Veterinary Science, College of Agriculture, University of Nebraska, Lincoln, Nebraska

1983-84 Graduate Teaching Assistant, Department of Veterinary Science, College of Agriculture, University of Nebraska, Lincoln, Nebraska

1982-83 Laboratory Technician, Department of Veterinary Science, College of Agriculture, University of Nebraska, Lincoln, Nebraska

Competitive Research Funding Awarded:

Extramural, Primary Investigator

2008-14 NIH (BD Schultz, P.I.) Direct Cost $1,125,000
Title: Neuroendocrine-modulated epithelial HCO_3^- transport

2006-08 Cystic Fibrosis Foundation (BD Schultz, P.I.) Direct Cost $75,000
Title: Neuroendocrine-modulated epithelial HCO_3^- transport

2003-06 USDA NRI (BD Schultz, P.I.) Direct Cost $194,401
Title: Epithelial sodium transport mechanisms and associated regulatory pathways that affect bovine mammary development, function, and involution

2003-05 NIH-NIDDK (BD Schultz, P.I.) Direct Cost: $200,000
Project Title: HCO_3^- and Na^+ transport in human and pig vas deferens

2003-05 Cystic Fibrosis Foundation (BD Schultz, P.I.) Direct Cost $120,000
Title: Bicarbonate secretion by human and porcine epithelia

1999-00 Cystic Fibrosis Foundation (BD Schultz, P.I.) Direct Cost $75,000
Title: Regulated ion transport by vas deferens epithelium

1998-00 USDA NRI (BD Schultz, P.I.) Direct Cost $114,035
Title: Treatment of porcine diarrhea by modulating epithelial apical anion conductances

1996-99 Cystic Fibrosis Foundation (BD Schultz, P.I.) Direct Cost $270,000
Title: Sulfonylureas and CFTR

1995-96 Cystic Fibrosis Foundation New Investigator Direct Cost $34,500
Title: Regulation of mutant CFTR by nucleotides and IBMX

1994-95 Cystic Fibrosis Foundation Fellowship Direct Cost $33,500
Title: Regulation of mutant CFTR by nucleotides and IBMX

1992-94 NIH Individual National Research Service Award
Title: Regulation of CFTR by ATP

Extramural, Co-Investigator or other role

2010-14 NIH-NIDDK (Co-investigator; J.M. Tomich, P.I.)Direct Cost $858,746
Title: Model synthetic channel assemblies

2009-10 NIH-COBRE (Mentor/collaborator; R Gehring, Project Dir)Direct Cost: $125,000
Title: BME-UV monolayers as a model for the pharmacokinetics of xenobiotics in

lactation

2009-11	NIH-COBRE (Collaborator; S Narayanan, Project Dir) Title: Role of Colonic Epithelial Cells in Susceptibility and Severity of *Citrobacter rodentium* Infection	Direct Cost:	$50,000
2009-10	NIH-COBRE (Collaborator; J Shi, Project Dir) Title: Epithelial-lymphoid crosstalk via IL-1 in host defense against *Citrobacter rodentium*	Direct Cost:	$125,000
2008-10	NIH-R15 (Co-investigator; W Zhang, P.I.) Title: The significance of enteroaggregative Escherichia coli heat-stable toxin 1 (EAST1) in ETEC associated diarrhea disease	Direct Cost	$216,750
2007-09	NIH-COBRE (Project director; DC Marcus, P.I.) Project Title: Corticosteroid-modulated epithelial Na^+ & HCO_3^- transport	Direct Project Cost	$270,000
2005-09	NIH-NIDDK (Co-investigator; J.M. Tomich, P.I.) Title: Model synthetic channel assemblies	Direct Cost Supplement of	$720,000 $80,000
2004-05	NIH-SBIR (Consultant; J.M. Tomich, P.I.) Title: Enhanced drug access to eye tissues	Direct Cost	$200,000
2002-05	NIH-COBRE (Project director; DC Marcus, P.I.) Project Title: Transepithelial ion transport and its regulation	Direct Project Cost	$435,000
2002-03	NIH-SBIR (Subcontract; J.M. Tomich, P.I.) Title: Synthetic peptide modulator of paracellular conductance	Subcontract Direct Cost	$18,586
1999-03	NIH-NIDDK(Co-investigator; J.M. Tomich, P.I.) Title: Role of ordered helical segments in membrane proteins	Direct Cost	$565,558

Extramural, Training Grant

2015-20	NIH (P.D.; Previously MJ Kenney, P.D.) Title: BRITE veterinary student program	Direct Cost	$198,775
2013-18	NIH (P.D.; Previously MJ Kenney, P.D.) Title: Short-term training in health professional schools	Direct Cost	$227,890
2009-14	NIH (Mentor; MJ Kenney, P.D.) Title: BRITE veterinary student program	Direct Cost	$205,127
2008-13	NIH (Mentor; L. Freeman, P.D.) Title: Short-term training in health professional schools	Direct Cost	$218,505
2006-09	NIH (Mentor; L. Freeman, P.D.) Title: BRITE veterinary student program	Direct Cost	$85,210
2003-08	NIH (Mentor; F. Blecha, P.D.) Title: Short-term training in health professional schools	Direct Cost	$228,374
2003-06	NIH (Mentor; L. Freeman, P.D.) Title: BRITE veterinary student program	Direct Cost	$81,312

Intramural Research, Primary Investigator

2013-14	KSU-CVM SMILE (BD Schultz, P.I.) Title: Neuroendocrine and prostaglandin regulated vas deferens anion secretion	Direct Cost	$39,000
2007-08	KSU-CVM SMILE (BD Schultz, P.I.) Title: Neuroendocrine-modulated epithelial ion transport	Direct Cost	$40,000
2004-05	Dean's Fund Research (BD Schultz, P.I.) Title: Epithelium-specific pathogenic mechanism(s) of rotavirus enterotoxin NSP4	Direct Cost	$15,000
2000-01	Dean's Fund Research (BD Schultz, P.I.) Title: Epithelial mechanisms of milk secretion	Direct Cost	$5,000

2000-02	Kansas Ag Exp Station (BD Schultz, P.I.) Title: Prevention and cure of bovine mastitis: the roles of the mammary epithelium	Direct Cost	$32,000
1999-00	Dean's Fund Research (BD Schultz, P.I.) Title: Electrolyte transport by porcine vas deferens: regulation of the luminal environment	Direct Cost	$5,000
1996-97	U. Pittsburgh Med Center Competitive Research Fund Title: Pharmacologic modulation of epithelial Cl^- secretion	Direct Cost	$18,678

AES Multi-State Research Projects

2000-	NE1009/1048: Mastitis Resistance to Enhance Dairy Food Safety
Project title:	Corticosteroid modulation of milk secretion by bovine mammary epithelium
1999-2003	NE1007: Porcine enteric diseases
Project title:	Treatment of porcine diarrhea by modulating epithelial anion conductances

Pre/Post-doctoral Training

1991-92	NIH Training grant
1988-89	Biotechnology Fellowship Awardee, Cornell University
1986-88	Biotechnology Assistantship Awardee, Cornell University

Competitive Funding Pending:

Proposals being revised for resubmission:

2016-21	NIH (BD Schultz, P.I.) Title: Neuroendocrine and prostaglandin regulated vas deferens anion secretion	Direct Cost	$1,250,000

Teaching Responsibilities: (descriptions of courses and responsibilities follow 'Presentations' below)

2016-present	AP-995-A	Responsible Conduct in Research	Course Coordinator
2011-14	AP-995-A	Responsible Conduct in Research	Discussion leader
1998-present		Veterinary Research Scholar Program	Mentor / Workshop Leader
1998-present	AP-737	Physiology I	Co-Instructor
2014	AP-995	Physiology Research Perspectives	Co-Instructor
2009-11	AP803	Seminar	Coordinator
2003, 05	CS-895	Research Methods - Vet Clin Sci	Lecturer
2002, 06	Biochem-911	Molecular Signal Transduction	Guest lecturer
2000-01	Biochem 799	Problems in Biochemistry	Laboratory mentor
1998-00	AP-770	Pharmacology	Co-Instructor
1998	AP-880	Mechanisms of drug action	Lecturer
1997	INTBP 2000	Foundations of Biomedical Science	Co-Instructor
1997		Physiology: Med School, second year	PBL Facilitator
1996	Physiol 2641	Principles of Mammalian Physiology	Co-Instructor
1994	Biology 206	Human Physiology	Course Coordinator & Instructor Lab. Organizer & Instructor
1990	VetPharm723	Calcium and Control of Intestinal Electrolyte Transport	Co-Instructor
1986	Biol Sci 413	Mammalian Physiology	Laboratory Instructor Teaching Assistant
1985	Biol Sci 319	Animal Physiology Experimentation	Laboratory Instructor

1983-84	Vet Sci 201	Physiology of Domestic Livestock	Laboratory Co-Instructor Teaching Assistant

Mentorship Activities:

Primary advisor:

Post-Doctoral
James Broughman (2001-2002)
Xiaobin Han (2004-2007)
Fernando Pierucci-Alves (2004-2010)
Vladimir Akoyev (2008-2010)

Doctoral
Rebecca Quesnell (2001-2007)
Suma Somasekharan (2002-2008; Co-mentor with JM Tomich)
Pradeep Malreddy (2003-2007; switch to MS)
Sheng Yi (2010-2013)
Qian Wang (2008-2014)

Master
Travis Hagedorn (2005-2007; BRITE Veterinary Scholar)
Jessica Martin (2004-2006; BRITE Veterinary Scholar; ABD)
Natalee Holt (2005-2007; ABD)
Pradeep Malreddy (2007-2008; switch from PhD)
Sheng Yi (2007-2009; Co-mentor with JM Tomich)

Professional student research projects

Veterinary Research Scholars
Erin O'Donnell (1998)
Doug Eisenman (1999)
Dean Fahlman (2001)
Jon Perchick (2003)
Travis Hagedorn (2005)
Cameron Duncan (2007, 2008)
Bryan Meier (2009)
Amy Lorch (2010)
Melanie Hintzpeter (2013)
Travis Wiley (2014)

Undergraduate

KSU Cancer Center Fellowships
Christopher Schmidt (2000-01)
Ashley Robins (2002)
John Lantham (2002)
Lindsay Strader (2003, 2004)
Jamie Erickson (2004)
Curtis Mick (2004)
Sarah Devlin (2005, 2006, 2007)
Michelle Amthauer (2007)
Elizabeth Blaesi (2007, 2008)
Jimmie Stewart (2009, 2010, 2011)
Jacob Hull (2009, 2010, 2011)
Tyler Dubec (2012)
Lauran Drummond (2013)
Melissa Riley (2015-16)

K-INBRE ARRA Scholar Award
Jacob Hull (2010-12)

American Physiological Society Undergraduate Research Fellowship
Lindsay Strader (2003)
Sarah Devlin (2007)
Jacob Hull (2010)
Melissa Riley (2016)

California State Univ-Long Beach Undergraduate Research Scholar
Jacqueline Johnsen (2003)

KSU/SDSU collaborative undergrad
Laura Viland (2005)

KSU SUROP
Stephanie Wimberly (2008)

KSU Bridges
Jimmie Stewart III (2009)

KSU DSP
Jimmie Stewart III (2009-12)
Melissa Riley (2014-pesent)

Secondary advisor/Committee member:

Doctoral
James Broughman (1998-01; JM Tomich, Biochemistry)
Satyanarayana Pondugula (2001-06; DC Marcus, Anatomy & Physiology)
Kristine Skjolaas-Wilson (2004-06; E Minton, Animal Science & Industry)
Ruchira Singh (2006-08; P Wangemann, Anatomy & Physiology)
Mohammad Al-Bataineh (2007-2010; R Gehring/M Apley, Diag. Med. & Path.)
Lea Dibb (2007-2011; T Melgareho, Nutrition)
Kyunghee Kim (2007-2009 switch to MS; D Marcus, Anatomy & Physiology)
Xiangming Li (2008-2013; P. Wangemann, Anatomy & Physiology)
Laura Constance (2013- ; P. Wangemann, Anatomy & Physiology)
Fei Zhou (2014 switch to MS; P. Wangemann, Anatomy & Physiology)
Yin Wang (2014-15 switch to MS; W. Zhang, Diagnostic Medicine & Pathobiology)

Outside Chair (Graduate School Appointed)
Jasper Fanning (2003-05; T Marsh [Featherstone], Agricultural Economics)
Ricardo Moura (2004-05; Xiuzhi Sun, Grain Science & Industry)
Prashanth Boddhireddy (2006-09; James C. Nelson, Plant Pathology)
Dillon Walker (2006-07; Evan Titgemeyer, Animal Science & Industry)
Vladimir Yevseyenkov (2010; D Takemoto, Biochemistry)
Samuel Molina (2009-12; D Takemoto, Biochemistry)
Allan Prior (2012-13; D Hua, Chemistry)
Hao Qian (2015; D Andersen, Computer & Information Science)

External Examiner
Denise Fitzgerald (2004) University College, Dublin, Ireland
Toni-Ann Alsop (2011, 2013) University of Otago, Dunedin, New Zealand

Masters
L. Paul Todd (1999-00; M Arn, Animal Science & Industry)
Ryan Carlin (2002-05; D Troyer, Anatomy & Physiology)
Shawnalea Frazier (2004-07; J Tomich, Biochemistry)
Rachel Allbaugh (2004-05; H Davidson, Clinical Sciences)
V.D.Sairam Jabba (2006-07; P Wangemann, Anatomy & Physiology; separated)
Rajanikanth Maganti (2006-07; P Wangemann/L Freeman, Anatomy & Physiology)
Wendy Miller (2006-07; J Lillich, Clinical Sciences)
Kyunghee Kim (2009-2010 switch from PhD; D Marcus, Anatomy & Physiology)

Elena Gart (2009-11; Sanjeev Narayanan Diag. Med. & Path.)
Jammie Layman (2012-2014; J Tomich, Biochemistry)
Fei Zhou (2014-15 switch from PhD; P. Wangemann, Anatomy & Physiology)
Yin Wang (2015 switch from PhD; W. Zhang, Diagnostic Medicine & Pathobiology)

Others conducting scholarly activities in the laboratory: (i.e., manuscript or abstract co-authorship)

Technical	Heather Balombiny (1996-97)
	Roger Sedlacek (1998-00)
	Ryan Carlin (1999-06)
	Bob Brandt (2003)
	Terri O'Leary (2002-05)
	Lin-Hua "Florence" Wang (2007-2014)
Professional	Maureen Philips (2000-2001)
	Christy Hastings (2002-03)
	Allison Diesel (2002)
	Travis Hagedorn (2004)
Undergrad	Jamie Erickson (2003-04)
High school	Jason Gillam (1999)

Awards to Mentees:

2005	N. Holt	Outstanding Poster Presentation in Gastroenteric Disease Section, *Conference of Research Workers in Animal Disease*.
2006	P. Malreddy	KSU Graduate Student Council Travel Award
2006	S. Somasekharan	KSU Graduate Student Council Travel Award
2006	P. Malreddy	Outstanding Poster, *Phi Zeta Research Day*
2006	T. Hagedorn	Dr. Charles E. Cornelius Graduate Student Travel Award
2006	T. Hagedorn	Basic Science Presentation Award, 3rd place, *Phi Zeta Research Day*
2006	R. Quesnell	Basic Science Presentation Award, 1st place, *Phi Zeta Research Day*
2006	R. Quesnell	Caroline tum Suden/Francis A. Hellebrandt Professional Opportunity Award, American Physiological Society Women in Physiology Committee.
2006	P. Malreddy	Student Award, American Physiological Society Epithelial Transport Group.
2007	S. Somasekharan	Basic Science Presentation Award, 3rd place, *Phi Zeta Research Day*
2007	R. Quesnell	A.S.R. Ganta Graduate Student Award, Presented at *Phi Zeta Research Day*
2009	C Duncan	Basic Science Poster Award, *Phi Zeta Research Day*
2009	P. Malreddy	Basic Science Presentation Award, 2nd place, *Phi Zeta Research Day*
2009	Q. Wang	Robert Gunn Award finalist, American Physiological Society.
2010	Q. Wang	Robert Gunn Award winner, American Physiological Society.
2010	E Gart	CRWAD Poster Presentation Award
2011	Q. Wang	KSU-CVM Graduate Student Travel Award
2011	S. Yi	Dr. Horst W and Elisabeth Leipold Endowment Scholarship
2011	J. Hull	Basic Science Poster Award, *Phi Zeta Research Day*
2011	Q. Wang	Robert Gunn Award finalist, American Physiological Society.

2011	S. Yi	Robert Gunn Award finalist, American Physiological Society.
2011	J. Hull	Robert Gunn Award finalist, American Physiological Society.
2012	Q. Wang	Kansas State University Research Foundation (KSURF) doctoral research fellowship

Professional and Academic Honors:

2010	Phi Kappa Phi
2006	Pfizer Award for Research Excellence
2004	American Physiological Society Lazaro J. Mandel Young Investigator Award
1999	Alumni Achievement Award, Wisner-Pilger High School
1999	Phi Zeta (Honorary), Kansas State University
1983	Gamma Sigma Delta, University of Nebraska
1981	Alpha Zeta, University of Nebraska

Professional Associations and Activities:

KSU-CVM Nominee/participant
AAVMC Leadership Academy (2015-2016)

American Physiological Society
Councilor; Cell and Molecular Physiology Sect Steering Committee (2006-2011)
Cell and Molecular Physiology Section Symposium Organizer: Electrolytes, Carbohydrates and Fats: Epithelial Cells Making and Delivering Milk. Washington Convention Center, April 12, 2011

American Journal of Physiology; Cell Physiology
Editorial Board (1999-present)

USDA NRI-CGP Grant review panel member (1999)
Ad Hoc reviewer (2000, 01, 02, 03, 04)

NIH Urology *ad hoc* grant review panel member (2002, 03, 15)

Singapore Ministry of Health - National Medical Research Council
Ad Hoc grant review (2006, 2015)

Italian Ministry of Health
Ad Hoc grant review (2009, 2010, 2011, 2013)

Chinese University of Hong Kong
'Area of Excellence' proposal review (2009)

Hong Kong Research Grants Council
General Research Fund *ad hoc* grant review (2012)

University of Kansas Medical Center
Proposal review (2012)

Cystic Fibrosis Foundation
Center Grant & Core Facility Review (2015)

Deleware Valley University – Animal Science
Program review and site visit (2015)

Society for the Study of Reproduction
Publications Committee, (2012-present)
Ethics Subcommittee (2011-present; Chair, 2012-present)
Awards Committee (2009-2012)

Lake Cumberland Biological Transport Group
Meeting Chair/organizer (2002-2005)

Conference of Research Workers in Animal Disease
Session Chair (2001, 02, 03)

Auditing Committee (2002)
Gastroenteric Disease Section Award Selection Committee (2004)

Cystic Fibrosis Foundation Research Conference
Session Chair: Animal Models for CF Research and Drug Development (2015)

North American Cystic Fibrosis Conference
Workshop Chair (1996, 1997, 1998, 1999, 2000)
Discussion Leader (1995, 1997)

Memberships
American Physiological Society (1997-present)
Society of General Physiologists (1997-present)
Biophysical Society (1998-2012)
Conference of Research Workers in Animal Disease (2000-2008)
Society for the Study of Reproduction (2002-present)
American Society of Andrology (2013-present)

Ad Hoc reviewer
American Journal of Pharmacology and Experimental Therapeutics; American Journal of Physiology-Cell Physiology; American Journal of Physiology-Lung Cellular and Molecular Physiology; American Journal of Physiology-Gastrointestinal and Liver Physiology; Archives of Ophthalmology; Beneficial Microbes; Biochemical Pharmacology; Biochemistry and Cell Biology; Biology of Reproduction; British Journal of Pharmacology; Cell Biochemistry and Biophysics; Endocrinology; Expert Opinion on Therapeutic Patents; Experimental Biology and Medicine; Experimental Physiology (1); FASEB Journal; Human Reproduction; Inflammatory Bowel (1); Journal of Animal Science; Journal of Biological Chemistry; Journal of Cellular Physiology; Journal of Membrane Biology; Cell and Tissue Research; Journal of Physiology (London)*; New Journal of Chemistry; Peptides; Physiological Reviews; Reproduction;*

External reviewer
Univ. of Cal, Riverside, Div. of Biomedical Sciences (Tenure and Promotion)
University of Pittsburgh Department of Medicine (Tenure and Promotion)

Patents:

Awarded:
#6,281,240; Diarylsulfonylureas for use in treating secretory diarrhea. B.D. Schultz (August 28, 2001)

#6,750,200; M2GlyR derived channel forming peptides. Tomich, J.M., Iwamoto, T., Broughman, J.R., and Schultz, B.D. (June 15, 2004)

Disclosure:
TRITER-Peptides: M2GlyR derived channel forming peptides that reversibly reduce membrane resistance in epithelial and endothelial monolayers. Tomich, J.M., Iwamoto, T., Schultz, B.D., and Broughman, J.R. (KSU disclosure submitted 11/12/01)

Porcine vas deferens epithelial cell line. Schultz, B.D., Sedlacek, R.L., Carlin, R.W. (KSU disclosure submitted 11/08/01; KSU Development Corp. subsequently sought to license usage without patent protection)

GenBank Accessions:

AY911643
O'Leary,T.L., Lorenzen,M.D., Pierucci-Alves,F. and Schultz,B.D. Na(+)-HCO cotransporters in porcine vas deferens epithelia. [Sus scrofa sodium bicarbonate cotransporter member 4 (NBC1) mRNA, partial cds.] note: pNBC1 or NBCe1B; protein id: AAX09639.1. Direct Submission: (28-JAN-2005) Anatomy and Physiology, Kansas State University, College of Veterinary Medicine, 1600 Denison Avenue, Manhattan, KS 66506, USA.

AY911644	O'Leary,T.L., Lorenzen,M.D., Pierucci-Alves,F. and Schultz,B.D. Na(+)-HCO cotransporters in porcine vas deferens epithelia [Sus scrofa sodium bicarbonate cotransporter member 4 (NBC1) mRNA, partial cds.] note: kNBC1 or NBCe1A; protein id: AAX09640.1. Direct Submission (28-JAN-2005) Anatomy and Physiology, Kansas State University, College of Veterinary Medicine, 1600 Denison Avenue, Manhattan, KS 66506, USA
NM 001008481	Pierucci-Alves, F. and Schultz, B.D. Sus scrofa glucocorticoid receptor alpha mRNA, complete cds. Direct Submission: (15-DEC-2004) Anatomy and Physiology, Kansas State University, College of Veterinary Medicine, 1600 Denison Avenue, 127 Coles Hall, Manhattan, KS 66506, USA. (reference sequence was derived from AY779185.1.)
AY253302	Carlin, R.W., Quesnell, R.R., Zheng, L., Mitchell, K.E. and Schultz, B.D. Sus scrofa domestica sodium bicarbonate cotransporter member 4 (SLC4A4) mRNA, partial cds. Direct Submission: (10-MAR-2003) Department of Anatomy and Physiology, Kansas State University, 1600 Denison Ave., Manhattan, KS 66506, USA. [Referenced in: Carlin, R.W., Quesnell, R.R., Zheng, L., Mitchell, K.E. and Schultz, B.D. Functional and molecular evidence for Na(+)-HCO cotransporter in porcine vas deferens epithelia. Am. J. Physiol., Cell Physiol. 283 (4), C1033-C1044 (2002)]
KJ416136	Schultz,B.D. and Wang,L.-H. Sus scrofa domesticus anoctamin 1 (Ano1) mRNA, partial cds. Direct Submission: (06-FEB-2014) Anatomy & Physiology, Kansas State University, Coles Hall, 1600 Denison Ave, Manhattan, KS 66506, USA [KJ416137 and KJ416138 are splicing variants]

Publications:

Articles in refereed journals:

1. Clemens, E.T., B.D. Schultz, M.C. Brumm, G.W. Jesse, and H.F. Mayes. Influence of market stress and protein level on feeder pig hematologic and blood chemical values. *Am J Vet Res* 47: 359-362, 1986. PMID: 3954220
2. Clemens, E.T., B.D. Schultz, M.C. Brumm, G.W. Jesse, and H.F. Mayes. Serum chemical profile of feeder pigs, as influenced by market stress and feeding regimen. *Am J Vet Res* 50: 1114-1117, 1989. PMID: 2774336
3. Marolf, C.J., B.D. Schultz, and E.T. Clemens. Epinephrine effects on gastrin and gastric secretions in normal and stress-susceptible pigs and in dogs. *Comp Biochem Physiol C* 106: 367-370, 1993. PMID: 7904912
4. Venglarik, C.J., B.D. Schultz, R.A. Frizzell, and R.J. Bridges. ATP alters current fluctuations of cystic fibrosis transmembrane conductance regulator: Evidence for a three-state activation mechanism. *J Gen Physiol* 104: 123-146, 1994. PMID: 7525859
5. Schultz, B.D., C.J. Venglarik, R.J. Bridges, and R.A. Frizzell. Regulation of CFTR Cl^- channel gating by ADP and ATP analogues. *J Gen Physiol* 105: 329-361, 1995. PMID: 7539480
6. Schultz, B.D., R.J. Bridges, and R.A. Frizzell. Lack of conventional ATPase properties in CFTR chloride channel gating. *J Membr Biol* 151: 63-75, 1996. PMID: 8661489
7. Venglarik, C.J., B.D. Schultz, A.D.G. de Roos, A.K. Singh, and R.J. Bridges. Tolbutamide causes open channel blockade of cystic fibrosis transmembrane conductance regulator Cl^- channels. *Biophys J* 70: 2696-2703, 1996. PMID: 8744307
8. Schultz, B.D., A.D. DeRoos, C.J. Venglarik, A.K. Singh, R.A. Frizzell, and R.J. Bridges. Glibenclamide blockade of CFTR chloride channels. *Am J Physiol* 271: L192-200, 1996. PMID: 8770056

9. Schultz, B.D., A. Takahashi, C. Liu, R.A. Frizzell, and M. Howard. FLAG epitope positioned in an external loop preserves normal biophysical properties of CFTR. *Am J Physiol* 273: C2080-2089., 1997. PMID: 9435515
10. Devor, D.C. and B.D. Schultz. Ibuprofen inhibits cystic fibrosis transmembrane conductance regulator- mediated Cl- secretion. *J Clin Invest* 102: 679-687, 1998. PMID: 9710435
11. Schultz, B.D., R.A. Frizzell, and R.J. Bridges. Rescue of dysfunctional deltaF508-CFTR chloride channel activity by IBMX. *J Membr Biol* 170: 51-66., 1999. PMID: 10398760
12. Singh, A.K., B.D. Schultz, J.A. Katzenellenbogen, E.M. Price, R.J. Bridges, and N.A. Bradbury. Estrogen inhibition of cystic fibrosis transmembrane conductance regulator-mediated chloride secretion. *J Pharmacol Exp Ther* 295: 195-204, 2000. PMID: 10991979
13. O'Donnell, E.K., R.L. Sedlacek, A.K. Singh, and B.D. Schultz. Inhibition of enterotoxin-induced porcine colonic secretion by diarylsulfonylureas in vitro. *Am J Physiol Gastrointest Liver Physiol* 279: G1104-1112., 2000. PMID: 11053008
14. Broughman, J.R., K.E. Mitchell, R.L. Sedlacek, T. Iwamoto, J.M. Tomich, and B.D. Schultz. NH(2)-terminal modification of a channel-forming peptide increases capacity for epithelial anion secretion. *Am J Physiol* 280: C451-458., 2001. PMID: 11171563
15. Sedlacek, R.L., R.W. Carlin, A.K. Singh, and B.D. Schultz. Neurotransmitter-stimulated ion transport by cultured porcine vas deferens epithelium. *Am J Physiol* 281: F557-570., 2001. PMID: 11502604
16. Schmidt, C.R., R.W. Carlin, J.M. Sargeant, and B.D. Schultz. Neurotransmitter-stimulated ion transport across cultured bovine mammary epithelial cell monolayers. *J Dairy Sci* 84: 2622-2631, 2001. PMID: 11814018
17. Phillips, M.L. and B.D. Schultz. Steroids modulate transepithelial resistance and Na^+ absorption across cultured porcine vas deferens epithelia. *Biol Reprod* 66: 1016-1023., 2002. PMID: 11906921
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Invited Podium Presentations and Seminars:

1. Serotonergic regulation of rabbit ileal ion transport, Department of Physiology, Dartmouth University, Hanover, New Hampshire, May, 1989.
2. Serotonergic control of rabbit ileal ion transport, Department of Physiology and Biophysics, University of Alabama at Birmingham, Birmingham, Alabama, January, 1990.
3. Effects of ATP and ATP analogues on the gating of CFTR Cl channels, Southern Appalachian Membrane Physiology Research Symposium, Emory University, Atlanta, Georgia, November 20, 1992.
4. Divalent cation dependence of CFTR, Cystic Fibrosis Foundation Williamsburg Conference, Williamsburg, Virginia, June 7, 1993.
5. Mg^{2+} is not required for CFTR channel activity, Seventh Annual North American Cystic Fibrosis Conference, Dallas, Texas, October 15, 1993.
6. Pharmacologically opening and closing the cystic fibrosis chloride channel, Winthrop University Hospital, Mineola, New York, September 6, 1994.
7. ΔF508-CFTR channel activity is unlike wt-CFTR, Cystic Fibrosis Foundation Williamsburg Conference, Williamsburg, Virginia, June 4, 1995.
8. [How is CFTR regulated?] Sulfonylurea modulation of gating. Cystic Fibrosis Foundation Williamsburg Conference, Williamsburg, Virginia, June 1, 1996.
9. Regulated Chloride Secretion: Physiology and pharmacology of the cystic fibrosis gene product. University of Pittsburgh, Cell Biology and Physiology Seminar Series, October 9, 1996.

10. Sulfonylureas directly affect intestinal and airway electrolyte transport. Special Research Seminar, Lilly Research Laboratories, Indianapolis, Indiana, November 15, 1996.
11. Pharmacological modulation of CFTR. Pulmonary Research Conference, University of Pittsburgh, November 21, 1996.
12. Pharmacological modulation of the cystic fibrosis protein. Basic Science Seminar Series, Winthrop University Hospital, Mineola, L.I. NY, December 12, 1996.
13. Epithelial Cl^- channels as therapeutic targets. College of Pharmacy Seminar Series, North Dakota State University, Fargo, North Dakota, March 17, 1997.
14. Diarylsulfonylureas and epithelial ion transport. LY295501 Investigators Meeting , American Association for Cancer Research annual meeting, San Diego, California, April 14, 1997.
15. Genistein potentiation of G551D-CFTR Cl^- conductance. Cystic Fibrosis Foundation Williamsburg Conference, Williamsburg, Virginia, June 1, 1997.
16. Defining the contribution of apical Cl^- channels to epithelial transport. Department of Anatomy and Physiology Seminar Series, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas, June 26, 1997.
17. Epithelial Cl^- channels as targets of drug therapy. University of Kansas Medical Center, February 16, 1998.
18. Modulating CFTR kinetics: Pharmacology and chemistry. Biochemistry Seminar Series, Kansas State University, Manhattan, Kansas, April 6, 1998.
19. Rational drug design for the management of scours. Diagnostic Medicine/Pathobiology Seminar Series, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas, April 13, 1998.
20. CFTR: a moving target for therapy. Physiology and Biophysics Seminar Series, University of Nebraska Medical Center, Omaha, Nebraska, September 18, 1998.
21. Structure-dependent stimulation and inhibition of Cl^- secretion by isoflavones and flavones. Cystic Fibrosis Foundation North American Meeting, Montreal, Quebec, Canada, October 15, 1998.
22. CBAVD & CFTR. University of Edinburgh, Edinburgh, Scotland, April 1, 1999.
23. The vas deferens: More than a conduit for sperm. Kansas State University, Department of Animal Science and Industry, Manhattan, Kansas, August 29, 2000.
24. Adenosine Stimulates Anion Secretion Across Both Human and Porcine Vas Deferens Epithelia. Experimental Biology, 2001, Orlando, FL, April 2, 2001.
25. Cystic Fibrosis Foundation fund-raising promotion (Perspective of local researcher), KMAN-Live, 1350 AM Radio, Manhattan, KS, April, 13, 2001.
26. Ion transport in the vas deferens: Do sperm really need a running start? Kansas State University College of Veterinary Medicine Brown Bag Seminar, May 4, 2001.
27. Ion Transport in the Vas Deferens: last minute preparation for sperm. Lake Cumberland Biological Transport Group, Jamestown, KY, June 19, 2001
28. *E. coli* LT- and STa-stimulated Intestinal Secretion are Differentially Inhibited by K^+ Channel Modulators *in vivo* and *in vitro. Experimental Biology 2002, New Orleans, LA, April 22, 2002.*
29. Vas Deferens Ion Transport: Mechanisms to Prepare Sperm. Cornell University Department of Biomedical Sciences Seminar Series, Ithaca, NY, May 7, 2002.
30. Mifepristone Modulates Porcine Vas Deferens Epithelial Ion Transport. Cystic Fibrosis Foundation Williamsburg Conference, Williamsburg, VA, June 1, 2002. 31. Mifepristone

Modulates Porcine Vas Deferens Epithelial Ion Transport. Lake Cumberland Biological Transport Group Annual Meeting, Jamestown, KY, June 18, 2002.

32 *E. coli* LT- and STa-stimulated Intestinal Secretion are Differentially Inhibited by Ion Channel Modulators. University of Nebraska, Department of Veterinary and Biomedical Sciences Seminar Series, Lincoln, Nebraska, September 16, 2002. 33. Cultured Bovine Mammary Epithelial Cells (BME-UV) that Respond to Hormones, Neurotransmitters and Local Ionic Environment. Mastitis Research Workers Conference, November 13, 2002, Chicago, IL, November 14, 2002.

34. Mifepristone modulates anion transport mechanisms in vas deferens epithelial monolayers: *another can of worms*. Lake Cumberland Biological Transport Group Annual Meeting, Jamestown, KY, June 17, 2003.

35. PI3-kinase is key to corticosteroid modulation of amiloride-sensitive Na^+ transport in vas deferens epithelia. Gordon Research Conference "Biology of the Reproductive Tract". Connecticut College, New London, CT, June 07, 2004. (Poster)

36. A Synthetic Peptide that Modulates Epithelial Barrier Function. Lake Cumberland Biological Transport Group Annual Meeting, Jamestown, KY, June 15, 2004.

37. Modulating Barrier Function of Bovine Mammary Epithelial Cells. Mastitis Research Workers Conference. Chicago, IL, November 17, 2004.

38. Mechanisms of milk secretion: making a low-sodium drink. Dalhousie University Department of Physiology and Biophysics seminar series. Halifax, Nova Scotia, September 7, 2006.

39. Mastitis and the Simplified Cow. Kansas State University Dairy Science Club. Manhattan, KS October 10, 2006.

40. Reducing Milk Na^+ To Promote Mammary Health. Mastitis Research Workers Conference. Minneapolis, MN, November 9, 2006.

41. *In vitro* models for enterotoxin-induced diarrhea. South Dakota State University Department of Veterinary Science Seminar Series. Brookings, SD, November 16, 2006.

42. Regulation of Epithelial Ion Transport in Vas Deferens Contributes to Male Fertility. Manhattan – Berlin Symposium on Transport Physiology, Free University of Berlin, Berlin, FRG, January 22, 2007.

43. The Mammary Epithelium: Making Milk and Staying Healthy. Kansas State University Department of Diagnostic Medicine and Pathobiology Seminar Series. Manhattan, KS, September 13, 2007.

44. GRIP1 is Required for Mammary ENaC Expression. Mastitis Research Workers, Minneapolis, MN, November 7, 2007.

45. Prostaglandins, pH, and the Preparation of Sperm. D C Johnson Seminar Series, Interdisciplinary Center for Male Contraceptive Research & Drug Development, Kansas University Medical Center, Kansas City, KS, March 12, 2008.

46. GRIP1 Is Required for ENaC Expression in Mammary Epithelial Cells. University of Cincinnati Physiology Seminar Series, Cincinnati, OH, April 22, 2008

47. Testosterone, Prostaglandins, and a Proposal for Sperm Activation. Fluxes & Barriers (work in progress), University of Cincinnati Dept. of Molecular and Cellular Physiology, Cincinnati, OH, April 23, 2008.

48. MCF10a Mammary Cells Form a High-Resistance Epithelial Barrier *in vitro*, Mastitis Research Workers, Toronto, Ontario, November 5, 2008.

49. Manure, Mastitis & Male Infertility, Concordia University, Seward, NE, December 5, 2008.

50. Manure, Mastitis & Male Infertility, Concordia College, Selma, AL, April 24, 2009.

51. TASK-2 Potassium Channels Are Expressed in Porcine Vas Deferens Epithelial Cells and Likely Modulate the Luminal Environment. Society for the Study of Reproduction, Pittsburgh, PA, July 19, 2009.
52. Male Reproduction: Swimming in the alkaline tide. Renal Grand Rounds, University of Pittsburgh School of Medicine, Pittsburgh, PA, October 9, 2009.
53. Cystic Fibrosis Pigs and the Loss of Male Reproductive Function. Department of Biochemistry Seminar Series, Kansas State University, Manhattan, KS, September 15, 2010.
54. Achieving Low Sodium in Milk. APS Symposium "Electrolytes, Carbohydrates & Fats: Epithelial Cells Making and Delivering Milk" *EB2011* Washington, DC, April 9, 2011.
55. Epithelia Create the Fluid for Ebb and Flow of Sperm. Center of Epithelial function in Health and Disease Symposium. Manhattan, KS, May 21, 2012.
56. A Sperm's-eye View of Epithelial Function. SUNY at Buffalo Department of Physiology & Biophysics Seminar Series. Buffalo, NY, November 29, 2012.
57. Ion Transport in the Male Reproductive Duct: Potential for Enhancing Cystic Fibrosis Therapy. Anatomy & Physiology Seminar Series, Kansas State University, Manhattan, KS, November 18, 2013.
58. Splice variants of Ano1 (Tmem16A), a Ca^{2+}-activated Cl^- channel, contribute to vas deferens anion secretion. Society for the Study of Reproduction 47th Annual Meeting, Grand Rapids, MI, July 21, 2014.
59. Cystic Fibrosis Therapy: a case for hope. Concordia University NE Pre-med club. Seward, NE, September 9, 2014.
60. Arachidonic Acid Induces Elevation of Serosal 15-deoxyΔ12,14-PGJ2 and Mucosal PGD2 and PGE2 by Porcine Vas Deferens Epithelia. Annual North American Cystic Fibrosis Conference, Atlanta, GA, October 9, 2014.
61. Manure, Mastitis & Male Infertility. Oklahoma State University Department of Physiological Sciences, Stillwater, OK, 14 April, 2015.
62. Anatomy & Physiology in the Context of a Large Organism. Kansas State University Department of Anatomy & Physiology, Manhattan, KS, 07 October, 2015
63. Making Them Remember ... my results and/or me. KSU Graduate Student Association. Manhattan, KS, 04 November, 2015.
64. Managing Reproductive $^+$'s and $^-$'s with Prostaglandins. Rosalind Franklin Uniniversity of Medicine and Science, Chicago, IL, 03 December, 2015.

Podium and Posters Presentations by Mentees (partial list):

1. Mifepristone Modulates Functional Expression of Ductus Deferens Epithelial Ion Transport Mechanisms. Lindsay A Strader. Phi Zeta Research Day. Manhattan, KS. 2003. (Podium; Basic Science presentation first award)
2. Luminal cation concentration modulates mammary epithelial integrity. Rebecca R. Quesnell and Bruce D. Schultz. Phi Zeta Research Day. Manhattan, KS. ??, 2003. (Podium)
3. Immortalized Vas Deferens Epithelial Cell Line (PVD9902) Provides Model System to Study Neurotransmitter-modulated Ion Transport. Ryan W Carlin. Phi Zeta Research Day. Manhattan, KS. ??, 2003. (Podium)
4. Luminal cation concentration modulates mammary epithelial integrity R.R. Quesnell. Kansas City Life Sciences Day. Kansas City, MO, March 27, 2003. (Poster)

5. Immortalized vas deferens epithelial cell line (PVD9902) provides model system to study neurotransmitter-modulated ion transport. R.W. Carlin. Kansas City Life Sciences Day. Kansas City, MO, March 27, 2003. (Poster)
6. β2-Adrenergic receptors modulate cAMP concentration and ion transport across vas deferens epithelia. Ryan W Carlin. Experimental Biology 2003. San Diego, CA. April 11-15, 2003. (Poster)
7. Glucocorticoids concentration- and time-dependently upregulate amiloride-sensitive ion transport across vas deferens. R.R. Quesnell and B.D. Schultz. Lake Cumberland Biological Transport Meeting, Lake Cumberland, KY, June 16, 2003. (Podium)
8. Synthetic channel-forming peptides provide membrane conductivity in *Xenopus* oocytes Jacqueline Johnsen. Merck-Merial Symposium. Manhattan, KS. August 1-2, 2003 (Poster)
9. Corticosteroids Increase cAMP-stimulated Ion Secretion by Vas Deferens Epithelium Jonathan P. Perchick. Merck-Merial Symposium. Manhattan, KS. August 1-2, 2003 (Poster)
10. Corticosteroids Increase cAMP-stimulated Ion Secretion by Vas Deferens Epithelium Jonathan P. Perchick. Veterinary Research Scholars Symposium. Manhattan, KS. August 7, 2003. (Podium)
11. Corticosteroids modulate amiloride-sensitive ion transport across vas deferens epithelia. RR Quesnell. Aldosterone and ENaC: From genetics to physiology (APS Physiological Genomics Conference). Banff, Alberta, Canada. September 12, 2003. (Poster)
12. Corticosteroids and antagonists modify cAMP-stimulated ion transport across bovine mammary epithelia. RR Quesnell. *Mastitis Research Workers*, Chicago, IL. November 6, 2003. (Podium)
13. Corticosteroids and antagonists modify cAMP-stimulated ion transport across bovine mammary epithelia. RR Quesnell. *Conference of Research Workers in Animal Disease*, Chicago, IL. November 11, 2003. (Poster)
14. Corticosteroid modulation of amiloride-sensitive Na+ transport across porcine vas deferens epithelia. RR Quesnell. *Conference of Research Workers in Animal Disease*, Chicago, IL. November 11, 2003. (Poster)
15. Corticosteroids increase cAMP-stimulated ion secretion by vas deferens epithelium. JP Perchick. *Conference of Research Workers in Animal Disease*, Chicago, IL. November 11, 2003. (Poster)
16. Glucocorticoid receptor-dependent modulation of porcine vas deferens ion transport. RR Quesnell. Anatomy & Physiology Seminar Series, Manhattan, KS. March 01, 2004. (Podium)
17. Inflammatory cytokines TNF-α and IL-6 modulate barrier function of bovine mammary epithelial cells. JS Erickson. Phi Zeta Research Day. Manhattan, KS. March 2, 2004. (Podium)
18. PI3-Kinase is key to corticosteroid modulation of amiloride-sensitive Na^+ transport in vas deferens epithelia. RR Quesnell. Phi Zeta Research Day. Manhattan, KS. March 2, 2004. (Podium)
19. Mifepristone upregulates basolateral NBC1 activity in vas deferens epithelial cell monolayers. LA Strader. Experimental Biology 2004, Washington, DC. April 18, 2004 (Poster)
20. PI3-kinase is key to corticosteroid modulation of amiloride-sensitive Na^+ transport in vas deferens epithelia. RR Quesnell. Experimental Biology 2004, Washington, DC. April 18, 2004 (Poster)
21. Modulation of epithelial barrier function by a synthetic peptide. S Somasekharan. Experimental Biology 2004, Washington, DC. April 18, 2004 (Poster)
22. Forskolin-stimulated anion transport across bovine mammary epithelia is modulated by glucocorticoids. RR Quesnell. Experimental Biology 2004, Washington, DC. April 18, 2004 (Poster)

23. PI3-kinase is a key modulator of ion transport across vas deferens epithelia. RR Quesnell. Society for the Study of Reproduction 37th Annual Meeting, Vancouver, BC. August 01, 2004. (Podium)
24. Modulation of HCO_3^- and Cl^- secretion by glucocorticoids and PI3 kinase. RW Carlin. Eighteenth Annual North American Cystic Fibrosis Conference, St. Louis, MO. October 15-16, 2004. (Poster)
25. Design of channel-forming peptides with altered transport function. SJ Frazier, American Chemical Society 39th Midwest Regional Meeting, Manhattan, KS, October 21, 2004. (Podium)
26. Molecular and functional evidence for CFTR in bovine mammary epithelium (BME-UV). X Han. *Conference of Research Workers in Animal Disease*, Chicago, IL. November 14, 2004. (Poster)
27. Overcoming the obstacles of drug delivery to the eye. J Martin, Anatomy & Physiology Seminar Series, Manhattan, KS. December 06, 2004. (Podium)
28. Hydrogen bonding contributions to the anion selectivity filter in M2GlyR derived channel-forming peptide. SJ Frazier, K-BRIN/K-INBRE Student Symposium, Lawrence, KS. January 15, 2005.
29. Luminal cation concentration and inflammatory mediators modulate bovine mammary epithelial integrity. RR Quesnell. Anatomy & Physiology Seminar Series, Manhattan, KS. January 24, 2005. (Podium)
30. Potassium conductance across vas deferens epithelium. P Malreddy. Anatomy & Physiology Seminar Series, Manhattan, KS. February 07, 2005. (Podium)
31. Corneal drug permeation enhanced by NC-1059. J Martin. *Phi Zeta Research Day*, Manhattan, KS. March 01, 2005. (Podium)
32. Potassium conductance identity in porcine vas deferens epithelial cell membranes. P Malreddy. *Phi Zeta Research Day*, Manhattan, KS. March 01, 2005. (Podium)
33. Multiple NBCe1 splice variants are expressed in vas deferens epithelial cells. F Pierucci-Alves. International Union of Physiological Sciences/ Experimental Biology 2005, San Diego, CA. April 02, 2005. (Poster)
34. Regulation of transepithelial resistance and amiloride-sensitive ion transport by dexamethasone in bovine mammary epithelium (BME-UV). X Han, International Union of Physiological Sciences/ Experimental Biology 2005, San Diego, CA. April 03, 2005. (Poster)
35. Porcine glucocorticoid receptors alpha and beta: Their coding sequences and gene expression in vas deferens epithelia. F Pierucci-Alves. International Union of Physiological Sciences/ Experimental Biology 2005, San Diego, CA. April 05, 2005. (Poster)
36. Increasing drug delivery to the eye with the use of NC-1059. J Martin. Anatomy & Physiology Seminar Series, Manhattan, KS. April 25, 2005. (Podium)
37. EAST1 induces anion secretion by IPEC-J2 pig intestinal cells in vitro. N Holt, *Conference of Research Workers in Animal Disease*, St. Louis, MO. December 04, 2005. (Poster; Outstanding Poster Presentation in Gastroenteric Disease Section)
38. NC-1059, a synthetic channel-forming peptide, enhances corneal drug permeation without apparent cytotoxicity. Sarah B. Devlin. K-INBRE Symposium, Manhattan, KS. January 14, 2006. (Poster)
39. Transcytotic passage of albumin through lens epithelial cells. J.R. Sabah, B.D. Schultz, Z.W. Brown, J. Reddan, L.J. Takemoto. K-INBRE Symposium, Manhattan, KS. January 14, 2006. (Poster)

40. Potassium Conductance Identity In Porcine Vas Deferens Epithelia. Pradeep Reddy Malreddy and Bruce D. Schultz. *Phi Zeta Research Day*, Manhattan, KS. March 07, 2006. (Poster; Award for Outstanding Poster)
41. Vasopressin Influences Ion Transport of Porcine Vas Deferens. Travis Hagedorn and Bruce D. Schultz. *Phi Zeta Research Day*, Manhattan, KS. March 07, 2006. (Podium; Basic Science Presentation Award, 3rd)
42. EAST1 induces anion secretion by IPEC-J2 pig intestinal cells *in vitro*. N. Holt, T. Hagedorn, D.C. Robertson and B.D. Schultz. *Phi Zeta Research Day*, Manhattan, KS. March 07, 2006. (Podium)
43. Modulation of Electrolyte Concentration in the Luminal Compartment of Bovine Mammary Epithelial Monolayers Alters Barrier Function Via Changes in the Tight Junction Protein Occludin. Rebecca R. Quesnell and Bruce D. Schultz. *Phi Zeta Research Day*, Manhattan, KS. March 07, 2006. (Podium; Basic Science Presentation Award, 1st)
44. NC-1059 increases paracellular permeability by altering occludin, ZO-1 and actin distribution. Somasekharan S, Quesnell RR, Iwamoto I, Tomich JM, and Schultz BD. *Experimental Biology 2006*, San Francisco, CA. April 02, 2006 (Poster).
45. SLC4A4 function in vas deferens epithelial cells. Pierucci-Alves F and Schultz BD. *Experimental Biology 2006*, San Francisco, CA. April 02, 2006 (Poster).
46. Potassium conductance identity in porcine vas deferens epithelia. Malreddy P and Schultz BD. *Experimental Biology 2006*, San Francisco, CA. April 03, 2006 (Poster; American Physiological Society Epithelial Transport Group Predoctoral Award)
47. Milk electrolytes and cytokine exposure modulate mammary epithelial barrier function via occludin. Quesnell RR and Schultz BD. *Experimental Biology 2006*, San Francisco, CA. April 04, 2006 (Poster; American Physiological Society Caroline tum Suden Award)
48. Structure-Activity Studies on New Channel-Forming Sequences Derived from the Second Transmembrane Segment of the Glycine Receptor α-Subunit. S.J. Frazier, A. Herrera, T. Iwamoto, B.D. Schultz, J.M. Tomich. National NIH IDeA- INBRE/COBRE meeting Washington, DC July 20-22, 2006. (Poster)
49. NC-1059, a synthetic channel-forming peptide, enhances corneal drug permeation without apparent cytotoxicity. Devlin SB, Martin J, Tomich JM, and Schultz BD. National NIH IDeA-INBRE/COBRE meeting Washington, DC July 20-22, 2006. (Poster)
50. Amino acid substitutions to NK4-M2GlyR do not enhance anion secretion across MDCK cells. Sarah B. Devlin, John M. Tomich, and Bruce D. Schultz. K-INBRE, Kansas City, MO January 13, 2007. (Poster)
51. A synthetic peptide, NC-1059, induces a reversible change in barrier function of a model epithelial system. Suma Somasekharan, John. M. Tomich, Bruce. D. Schultz. *Phi Zeta Research Day*, Manhattan, KS. February 27, 2007. (Podium; Basic Science Presentation Award, 3rd)
52. NC-1059, a synthetic peptide induces a reversible reorganization of the junctional proteins. Somasekharan S, Tomich JM, and Schultz BD. *Experimental Biology 2007*, Washington, DC. May 2, 2007.
53. Progesterone increases metabolic rate and progesterone withdrawal enhances epithelial integrity of mammary epithelium. Quesnell RR and Schultz BD. *Experimental Biology 2007*, Washington, DC. May 2, 2007.
54. Bradykinin stimulated cyclooxygenase activity results in vas deferens anion secretion in vitro. Pierucci-Alves F and Schultz BD. *Experimental Biology 2007*, Washington, DC. April 30, 2007.

55. Apical two-pore potassium channels support anion secretion across pig vas deferens epithelia. Malreddy PR and Schultz BD. *Experimental Biology 2007*, Washington, DC. April 30, 2007.
56. Bradykinin-induced HCO_3^- and Cl^- secretion across porcine vas deferens epithelial cells is enhanced by chronic testosterone exposure. Cameron L. Duncan, Fernando Pierucci-Alves and Bruce D. Schultz. *Merck-Merial-NIH Symposium*. Bethesda, MD. August 3-5, 2007. (Poster)
57. Vas deferens anion secretion is modulated by testosterone dependent COX expression. Fernando Pierucci-Alves and Schultz BD. *21st Annual North American Cystic Fibrosis Conference,* Anaheim, CA, October 3-6, 2007. (Poster)
58. Determination of ions that are actively transported across porcine vas deferens epithelia. Sarah B. Devlin and Bruce D. Schultz. *K-INBRE*, Kansas City, KS, January 19-20, 2008. (Poster)
59. Initial channel selectivity studies on glycine receptor M2 derived peptides in mouse fibroblast cells by patch clamping protocols. Elizabeth Blaesi and Bruce D. Schultz. *K-INBRE*, Kansas City, KS, January 19-20, 2008. (Poster)
60. IPECJ2 cells provide an excellent system for analysis of enterotoxigenic secretion. Natalee Holt, and Bruce D Schultz. *Colorado State University Phi Zeta Research Day*. Fort Collins, CO, February, 2008 (Podium)
61. Determination of Ions that are Actively Transported Across Porcine Vas Deferens Epithelia. Sarah B. Devlin and Bruce D. Schultz. *Experimental Biology 2008*, San Diego, CA, April 6, 2008. (Poster: Also presented as part of an undergraduate research forum)
62. Testosterone and cyclooxygenases modulate ion transport in vas deferens epithelia. Fernando Pierucci-Alves and Bruce D Schultz. *Society for the Study of Reproduction* HI, May, 2008. (Poster)
63. A human mammary epithelial cell line, MCF10a, exhibits active ion transport. Stephanie Wimberly and Bruce D Schultz. *Kansas State University SUROP Symposium*, July 25, 2008. (Podium)
64. Cameron Duncan Merk-Merrial August, 2008
65. Cameron Duncan *Kansas State University Veterinary Research Scholars Program*, August 5, 2008 (Poster)
66. P-glycoprotein mediates transport of benzylpenicillin in a cultured bovine mammary epithelial cell (BME-UV) model. Al-Bataineh MM, Van der Merwe D, Schultz BD, and Gehring R. *Phi Zeta Research Day*, Manhattan, KS. 2009. (Podium. Third award, Basic Sciences Oral)
67. Porcine vas deferens luminal pH and underlying androgen sensitive mechanisms for rapid alkalinization. Duncan C, Pierucci-Alves F, and Schultz BD. *Phi Zeta Research Day*, Manhattan, KS. 2009. (Poster. Award-unranked one of three)
68. Functional and molecular characterization of TASK-2 potassium channel in porcine vas deferens epithelial cells. Malreddy PR and Schultz BD. *Phi Zeta Research Day*, Manhattan, KS. 2009. (Podium. Second award, Basic Sciences Oral)
69. Cholera toxin upregulates amiloride-sensitive sodium transport across human mammary epithelial cells. Wang Q, Wimberly S, Wang L-H, and Schultz BD. *Phi Zeta Research Day*, Manhattan, KS. 2009. (Podium)
70. Epithelia derived from human mammary tissue exhibits unique ion transport characteristics. Wang Q, Wimberly S, Wang L-H, and Schultz BD. *EB9009* New Orleans, LA, April 20, 2009. (Poster)

71. Bicarbonate exchangers SLC26A3 and SLC26A6 are localized at the apical membrane of intact porcine vas deferens epithelium. Akoyev V, Pierucci-Alves F, and Schultz BD. *EB2009* New Orleans, LA, April 20, 2009. (Poster)
72. MAPK8 and MAPK11 Modulate TGFB1-Induced Changes in Epithelial Function Across Human and Porcine Vas Deferens Epithelial Cells. Pierucci-Alves, Fernando, Sheng Yi and Bruce D. Schultz. *Society for the Study of Reproduction*, Pittsburgh, PA, July 19, 2009. (Podium)
73. Age-related changes in fetal pig mesonephric duct lumen aperture. Meyer, Bryan, Fernando Pierucci-Alves and Bruce D. Schultz. *Merck-Merial NIH Veterinary Scholars Symposium*, North Carolina State University, Raleigh, NC, August 6-8, 2009. (Poster)
74. Age-related changes in fetal pig mesonephric duct lumen aperture. Meyer, Bryan, Fernando Pierucci-Alves and Bruce D. Schultz. *Veterinary Research Scholars Program*, Manhattan, KS, August 4, 2009. (Poster)
75. Wang, Q at Phi Zeta
76. CFTR Expression is Required for Maintenance of Male Reproductive duct Structures. Stewart, Jimmie, Fernando Pierucci-Alves, and Bruce D. Schultz. *K-State Developing Scholars Symposium*, Manhattan, KS, April 18, 2010. (Poster)
77. Wang, Q at EB2010
78. The effect of progesterone and β-estradiol on P-glycoprotein and breast cancer resistance protein expression in cultured BME-UV mammary epithelial cells. Lorch A, Malreddy PR, Schultz BD, and Gehring R. In: *Merck-Merial NIH Veterinary Scholars Symposium*. University of Georgia, Athens, GA, 2010. (Poster)
79. $CFTR^{-/-}$ pigs exhibit CBAVD phenotype at birth. Pierucci-Alves F, Akoyev V, Stewart J, Wang L-H, and Schultz BD. *The 24th Annual North American Cystic Fibrosis Conference*, Baltimore, MD, October 23, 2010. (Podium & Poster)
80. Peroxisome Proliferator Receptor γ Agonists Alter Electrolyte Transport Across Porcine Vas Deferens Epithelia. Hull, J. K-INBRE Symposium, Kansas City, MO January 15, 2011. (Poster)
81. Peroxisome Proliferator Receptor γ Agonists Alter Electrolyte Transport Across Porcine Vas Deferens Epithelia. Jacob Hull, Qian Wang, Florence Wang, Vladimir Akoyev, Bruce D. Schultz. *Phi Zeta Research Day*, Manhattan, KS. March 01, 2011. (Poster. Award-unranked one of three)
82. Cholera Toxin Enhances Sodium-Absorption via Epithelial Sodium Channel, ENaC, across Cultured Human Mammary Epithelia, MCF10A. Qian Wang, Bruce D. Schultz. *Phi Zeta Research Day*, Manhattan, KS. March 01, 2011. (Podium)
83. Morphological and Functional Changes in Colon of SW and C3H Mice Infected with *Citrobacter rodentium*. Elena. Gart, Bruce Schultz, Sailesh Menon, Lloyd Willard, Sanjeev Narayanan. *Phi Zeta Research Day*, Manhattan, KS. March 01, 2011. (Podium)
84. Contributions of the Cystic Fibrosis Transmembrane Conductance Regulator to Ion Transport in Ferret Male Reproductive Ducts. Jimmie C. Stewart III, Fernando Pierucci-Alves, and Bruce D. Schultz. *Kansas State University Developing Scholars Program Symposium*, Manhattan, KS, April 17, 2011. (Poster)
85. Peroxisome Proliferator Receptor γ Agonists Alter Electrolyte Transport Across Porcine Vas Deferens Epithelia. Hull J, Q Wang, L-H Wang, V Akoyev and BD Schultz. K-INBRE Symposium, Kansas City, MO January 15, 2011. (Poster)
86. A clue for novel regulation of ENaC by cholera toxin across cultured human mammary epithelia. Wang Q. KSU Anatomy & Physiology Seminar Series, Manhattan, KS, January 26, 2011. (Podium)

87. Cholera toxin enhances sodium-absorption via epithelial sodium channel, ENaC, across cultured human mammary epithelia, MCF10A. Wang Q and Schultz BD. *Phi Zeta Research Day*, Manhattan, KS. March 6, 2011. (Podium)
88. Peroxisome proliferator receptor γ agonists alter electrolyte transport across porcine vas deferens epithelia. Hull J, Q Wang, L-H Wang, V Akoyev and BD Schultz. *Phi Zeta Research Day*, Manhattan, KS. March 6, 2011. (Poster)
89. Cholera toxin-enhanced apical localization of {beta}-ENaC contributes to elevated mammary Na^+ absorption. Wang Q, and Schultz BD. *EB2011* Washington, DC, April 10 & April 11, 2011. (Poster – two presentations)
90. Peroxisome proliferator receptor {gamma} agonists alter electrolyte transport across porcine vas deferens epithelia. Hull J, Wang Q, Wang L-H, Akoyev V, and Schultz BD. *EB2011* Washington, DC, April 10 & April 11, 2011. (Poster – three presentations)
91. TGF-{beta}1 impairs forskolin response through down-regulation of CFTR in cultured vas deferens cells. Yi S, Pierucci-Alves F, and Schultz BD. *EB2011* Washington, DC, April 10 & April 11, 2011. (Poster – two presentations)
92. Peroxisome proliferator receptor γ regulates electrolyte transport across porcine vas deferens epithelia. Hull J, Wang Q, Wang F, Akoyev V, and Schultz BD. *Society for the Study of Reproduction*, Portland, OR, Aug 1, 2011. (Podium)
93. Cholera toxin enhances sodium absorption across cultured human mammary gland epithelia: novel mechanisms of regulating ENaC function in mammary gland. Wang Q, and Schultz BD. *7th International Symposium on Aldosterone and the ENaC/Degenerin Family of Ion Channels: Molecular Mechanisms and Pathophysiology,* Pacific Grove, CA, September 18-22, 2011. (Poster)
94. TGF-beta1 impairs forskolin response through down-regulation of CFTR in cultured vas deferens cells. Yi S, Pierucci-Alves F, and Schultz BD. *The 25th Annual North American Cystic Fibrosis Conference*, Anaheim, CA, November 3-5, 2011. (Poster)
95. Peroxisome Proliferator Receptor γ Agonists Alter Electrolyte Transport Across Porcine Vas Deferens Epithelia. Hull J, Q Wang, L-H Wang, V Akoyev and BD Schultz. K-INBRE Symposium, Kansas City, MO January 14-15, 2011. (Poster)
96. Potential Contribution of ClC-2 Anion Channels to Porcine Colonic and Urogenital Secretion. Stewart, Jimmie III, Jacob Hull, Florence Wang, and Bruce D. Schultz. Developing Scholars Symposium, Manhattan, KS, April 22, 2012. (Poster)
97. TGF-β1 impairs CFTR-mediated anion secretion across cultured porcine vas deferens epithelial monolayer via the p38 MAPK pathway. Yi, Sheng, Fernando Pierucci-Alves, and Bruce D. Schultz. *The 26th Annual North American Cystic Fibrosis Conference*, Orlando, FL, October 11-13, 2012. (Poster)
98. Cellular Signaling by Transforming Growth Factor Beta in The Male Excurrent System. Pierucci-Alves, Fernando. KSU Anatomy & Physiology Seminar Series, Manhattan, KS, October 8, 2012. (Podium)
99. In-vitro culture of bovine mammary epithelial cells alters the expression of breast cancer resistance protein (BCRP, ABCG2) and P-glycoprotein (P-gp, ABCB1). Lindsay A. Gehring, Pradeep R. Malreddy, Bruce D. Schultz and Ronette Gehring. *Merial-NIH Veterinary Scholars Symposium*. Ft Collins, CO. August 3, 2012. (Poster)
100. Cholera toxin enhances sodium absorption via ENaC across cultured human mammary gland epithelia. Qian Wang and Bruce D. Schultz. *Phi Zeta Research Day*, Manhattan, KS. March 5, 2013. (Poster)

101. TGF-β1 impairs CFTR-mediated anion secretion across cultured porcine vas deferens epithelial monolayers via the p38 MAPK pathway. Yi S, Pierucci-Alves F, and Schultz BD. *EB2013*, Boston, MA, April 22, 2013. (Podium & Poster)
102. Fetal and adult porcine reproductive tracts express different splice variants of Ano1, a Ca^{2+}-activated Cl^- Channel. Hinzepeter, MM, L-H Wang, and BD Schultz. Merial-NIH National Veterinary Scholars Symposium. East Lansing, MI, August 2-3, 2013. (Poster)
103. ClC-2 inhibitors methadone and GaTx2 fail to inhibit short circuit current across pig vas deferens epithelia. Wiley, TM, L-H Wang, and BD Schultz. Merial-NIH National Veterinary Scholars Symposium. Ithaca, NY, August 1-2, 2014. (Poster)
104. Involution of vas deferens as a model for epithelial disruption in the CF rat. Plyler Z, Fanucchi M, Tuggle K, Pierucci-Alves F, Harris T, Sorscher E, Schultz BD. The 28th Annual North American Cystic Fibrosis Conference, Atlanta, GA, October 9, 2014.
105. 15 deoxy-PGJ_2 Stimulates Porcine Vas Deferens Epithelial Anion Secretion via EP2/EP4 Receptors. Melissa Riley and Bruce D. Schultz. Developing Scholars Symposium, Manhattan, KS. 19 April, 2015. (Poster)
106. Characterization of vas deferens atresia in the cystic fibrosis rat model. Plyler ZE, Schoeb TR, Schultz B, and Sorscher EJ. The 29th Annual North American Cystic Fibrosis Conference, Phoenix, AZ, October 9, 2015.

Teaching Responsibilities with Course Descriptions:

2014	Co-Instructor AP-995; Physiology Research Perspectives and Presentations Department of Anatomy and Physiology, Kansas State University, Manhattan, Kansas Intensive one credit course for graduate students involved in research Identified publications for student review and presentation; assisted students with presentations and evaluated performance.
2011-present	Discussion Leader; Course Coordinator starting in 2015 AP-995-A; Responsible Conduct in Research Department of Anatomy and Physiology, Kansas State University, Manhattan, Kansas Two credit course for graduate students involved in research Guided reading and discussion-based course to examine all major NIH-directed topics for predoctoral and postdoctoral trainees.
1998-present	Co-Instructor AP-737; Physiology I Department of Anatomy and Physiology, Kansas State University, Manhattan, Kansas Five (Six) credit course required for first year veterinary students Prepared and delivered seven to twenty lectures. Composed, administered and graded associated examinations. Assist with course administration
1998-present	Veterinary Research Scholar Program Mentor/Workshop Leader/Moderator Summer research training program for veterinary students Department of Anatomy and Physiology, Kansas State University, Manhattan, Kansas

Mentor one student on a research topic relevant to current research goals of the laboratory and of significant interest to veterinary medicine. Includes preparation for presentation at local and national meetings along with publication.
Prepare and conduct workshop on scientific presentations.
Moderate journal club on research ethics.
Co-Director 2014-present

1998-00 Co-Instructor
AP-770; Pharmacology
Five credit course required for second year veterinary students
Prepared and delivered one to two lectures during the course. Assisted in composition and grading of the final examination.

1998 Lecturer
AP-880; Mechanisms of drug action
3 credit graduate course
Prepared and delivered two 90 minute lectures during the course. Attended most other lectures and actively participated in discussions with students and other instructors.

1997 Co-Instructor
INTBP 2000; Foundations of Biomedical Science
Department of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, Pennsylvania
Ten credit graduate course.
Deliver 3 one hour lectures and organize/coordinate small group journal club discussions.

1997 Facilitator
Physiology: Medical School, second year
Department of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, Pennsylvania
Cardiovascular problem-based learning workshop.
Facilitate/lead 2 three-hour workshops.

1996 Co-Instructor
Physiology 2641; Principles of Mammalian Physiology
Department of Cell Biology and Physiology, University of Pittsburgh, Pittsburgh, Pennsylvania
Three credit graduate course.
Deliver 4 one hour lectures.

1994 Course Organizer and Co-Instructor, Laboratory Instructor
Biology 206; Human Physiology
Department of Biology, Judson College, Marion, Alabama
Introduction to human physiology; a systems approach.
Four credit course including laboratory.
Organize and supervise course including delivery of 17 lectures.
Organize and supervise 12 laboratories.

1990 Co-Instructor
Veterinary Pharmacology 723; Calcium and Control of Intestinal Electrolyte Transport

Department of Pharmacology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York
Two credit course.
Deliver 3 two hour lectures.

1986 Laboratory Instructor / Teaching Assistant
Biological Science 413/813; Mammalian Physiology
Department of Physiology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York
Advanced mammalian physiology; a systems approach.
Four credit course including laboratory.
Supervise 11 laboratories; Participation in laboratory was required for satisfactory completion of accompanying class.

1985 Laboratory Instructor
Biological Science 319; Animal Physiology Experimentation
Department of Physiology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York
Introduction to vertebrate physiology.
Two credit laboratory course.
Supervise 11 laboratories in each of two sections; Participation in laboratory was not required for satisfactory completion of accompanying class (Biological Science 311; Introduction to Animal Physiology).

1983-84 Laboratory Co-Instructor / Teaching Assistant
Veterinary Science 201; Physiology of Domestic Livestock
Department of Veterinary Science, College of Agriculture, University of Nebraska, Lincoln, Nebraska
Introduction to mammalian physiology.
Four credit course including laboratory.
Deliver 3 to 9 lectures each semester.
Supervise 14 laboratories in each of two sections; Participation in laboratory was required for satisfactory completion of accompanying class.

Service to the Department, College, and University

University

Faculty Senate (Elected: 2004-10, 2012-present)
Exec Committee (2006-07, 2009-10, 2012-present)
Committee on Technology (2007-08)
Graduate Faculty Council (Elected: 2007-10)
Committee on Planning (2007-10)
K-State 2025 Graduate Scholarly Experience Committee (Presidential Appt: Co-Chair 2011)
K-State 2025 Research Committee (Presidential Appt: 2012)
Graduate Research Forum Judge (Dean's request: 2006)
Capital Graduate Research Forum Judge (Dean's request: 2011, 2012)
Dean Evaluation Committee, College of Veterinary Medicine (Provost Appt: 2012)
Search Committee, Dean, College of Veterinary Medicine (Provost Appt: 2014-15)
University Research Ethics Committee (Faculty Senate President Appt: 2014-2017)
Office of Research and Sponsored Programs (ORSP) Veterinary Medicine Focus Group for research infrastructure priorities (Provost Appt: 2014)
University Climate Survey Tenure Track / Tenured Faculty focus group (Provost Appt: 2014)

College of Veterinary Medicine

- Administrative Council (2015-16)
- College strategic planning initiative (2016)
  - Strategic leadership team
  - Strategic focus committee – research and graduate studies
- VRSP Steering/administrative Committee (2014-present)
- Student-Faculty Affairs Committee (1999-00, Secretary 2001-02, Chair 2003-06)
- Admissions Committee (ad hoc 1999-02, 2004-06)
- A&P Department Head Search Committee (2001)
- A&P Interim Department Head Search Committee (2011)
- A&P Department Head Search Committee (Chair, 2012-13)
- Library Committee (2003-06)
- Technical Advisory Committee (2003-05, Chair 2006-09)
- Safety Committee (2007-2014)
- Biosecurity, Environmental Health & Safety (2014-present; Chair 2015-present)
- Research Committee (ad hoc 2008-09)
- Tenure and Promotion (2011-2015)
- Phi Zeta Day Basic Science Judge (1998, 2001, 2011-12)
- Phi Zeta Day Speaker Host (2003, 2004)

Department of Anatomy & Physiology

- Advisory Committee (1999-2000)
- Graduate Executive Committee (2000-02, 2007-08, Chair 2009-11)
- Clarenburg Lecture Host (2002)
- Mid-tenure Review Committee (2007, 2008)
- Ad Hoc committee to revise Departmental Documents, Chair (2012-13)
- Search Committee – Anatomist (2013)
- Search Committee – Integrative and Systems Physiologist (2014)
- Ad Hoc committee to revise Departmental Documents, Chair (2014)
- Web Site update and implementation (2014)