

CURRICULUM VITAE

NAME: Steven Claude Sansom
2710 North 55th Street
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CAMPUS ADDRESS: University of Nebraska
Medical Center
Department of Physiology
600 South 42nd Street
Omaha, Nebraska 68198-4575
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DATE/PLACE OF BIRTH: August 20, 1949 / Santa Monica, CA

EDUCATION:

<u>Degree</u>	<u>Year</u>	<u>Institution</u>	<u>Major</u>
B.S.	1971	San Diego State University, San Diego, California	Biology

POST-DEGREE AND CONTINUING EDUCATION:

Ph.D.	1984	The University of Texas Health Science Center at Houston, Texas	Physiology
Postdoc.	1987	Yale University College of Medicine	Renal Phys.

ACADEMIC APPOINTMENTS:

1984-1987	Coordinator and Instructor, Physiology Course, Physician's Assistant Program, Yale University College of Medicine
1986-1988	Associate Research Scientist, Department of Physiology, Yale University College of Medicine
1988-1997	Assistant Professor, Departments of Internal Medicine (Nephrology) and Physiology. University of Texas Medical School, tenure achieved in 1997 - Declined to accept offer at UNMC.
1992-1997	Assistant Professor, Graduate School of Biomedical Sciences, University of Texas Health Science Center-Houston, Texas
1997-	Graduate School Faculty, University of Nebraska Medical Center, Omaha, Nebraska.
1997-2001	Associate Professor with Tenure, Department of Physiology, University of Nebraska Medical Center, Omaha, Nebraska.
2001-	Professor, Department of Physiology, University of Nebraska Medical Center, Omaha, Nebraska.

CERTIFICATIONS AND LICENSES:

None

GRANT/CONTRACT SUPPORT:

GRANT SUPPORT (CURRENT):

1R01 DK092474-06 (Sansom)

\$207,000

DHHS/NIH/NIDDK

2011-2018

Role of BK-a/b4 channels in Na-independent K secretion

1R01 DK071014-05

\$207,000

DHHS/NIH/NIDDK

2012-2018

Role of BK-b1 subunit in flow-induced K excretion in the mammalian CNT

Bridge Grant:

UNMC

\$50,000.

07/01/2017-06/30/2018

5F30DK108456-02 (Wang)

DHHS/NIH/NIDDK

Mentor for Bangchen Wang

\$32,131

09/17/2015 - 09/16/2020

Net K Secretion in Thick Ascending Limb of Mice on Low Na High K Diet

Division of Nephrology, UNMC Seed Grant (Sansom and Padanilam)

\$12,000

Role of ROMK in development of hydronephrosis in mice.

GRANT SUPPORT (PENDING);

1R01 DK114663-01 (Patel/Zheng)

DHHS/NIH/NIIDDK

5% Effort (Dr. Sansom)

\$302,489

07/01/2017-06/30/20200

DHHS/NIH

Novel Target Mechanism (Renal Denervation) to Reduce Sodium Retention in Chronic Heart Failure

1R01 DK112736-01A1 (Sansom)

DHHS/NIH/NIDDK

50% Effort

\$250,000

12/01/2017-11/30/2022

Net Potassium secretion in the thick ascending limb of Henle

GRANT SUPPORT (PREVIOUS):

- 2006-2012 National Institutes of Health, Principal Investigator. 1 RO1 DK073070-01: Project Title: "Role of TRP channels in the statin reversal of nephropathy in early stage type 2 DM" (direct) - 205,000/yr.
- 2009-2011 National Institutes of Health, Principal Investigator. ARRA. 3 R01 DK071014-03S1 Role of BK-b1 subunit in flow-induced K excretion in the mammalian CNT (direct) - \$30,000/yr.
- 1997-2007 National Institutes of Health, Principal Investigator. 1 RO1 DK49561-06: Project Title: "Mechanism of Regulation of a Glomerular K Channel" (direct) - 150,000/yr.
- 2006-2008 P. Richard Grimm. (Sponsored) American Heart Association Predoctoral Fellowship. Role of eNOS in flow mediated K excretion
- 2003-2006 American Heart Association, affiliate, Grant-in-Aid: "Role of store-operated Ca channels in mesangial hyperplasia associated with type 2 diabetes". \$65,000/year
- 2001-2004 National Service Award Institutional Cardiovascular Training Grant, Sponsor of Jennifer Pluznick. Title: "Renal function and electrolyte balance in the Mbeta-/- hypertensive mouse model"
- 1998-2003 National Institutes of Health, 1 R01 DK39202-09, Co-investigator. PI: Pamela Carmines. Title: Hormonal influences on the renal microvasculature.
- 2001-2003 Dean's indirect Cost Funds, UNMC. Seed grant for program project. Title: "Regulation of glomerular store-operated Ca channels in diabetic models". \$18,000
- 1986-1988 New Investigator Award, American Heart Association, Connecticut Affiliate. Project Title: Control of K⁺ Secretion in Cortical Collecting Duct@. \$25,000/year, salary.
- 1986-1989 Grant-in-Aid, American Heart Association, National Center. Project Title: AControl of K⁺ Secretion in Cortical Collecting Duct@. \$90,000 - supplies and equipment.
- 1989-1990 Basic Science Research Grant (Interinstitutional). Project Title: Control of Cl⁻ Secretion in Epithelial Cells@. \$9,000.
- 1989-1992 Grant-in-Aid, American Heart Association, National Center, Principal Investigator. Project Title: Cellular Mechanism of Regulation of K⁺ Secretion@. \$90,000 supplies and equipment.
- 1991-1994 Environmental Protection Agency, Co-Investigator. Project Title: AToxic Effects of Agricultural Chemicals on Distal Nephron Function@. 5% salary support.
- 1991-1995 Cystic Fibrosis Foundation, Principal Investigator. Project Title: Molecular Control of Secondary Active Cl⁻ Transport.

- 1995-1998 Diabetes Action Research and Education Foundation, Principal Investigator. Project Title: Glomerular K⁺ Channels in Diabetic Hyperfiltration.
- 1995-1998 American Diabetes Association, Principal Investigator. Project Title: Role of Ca²⁺ Activated K⁺ Channels in Diabetic Hyperfiltration.
- 1998-1999 Nebraska Kidney Foundation, Seed Grant, Principal Investigator. Title: Electrophysiology of Mesangial Cells in Diabetic Nephropathy, \$5,000 for 1 year

PATENTS:

None

OTHER APPOINTMENTS:

- 1975-1980 Research Assistant, Department of Medicine, Baylor College of Medicine, Houston, Texas

CONSULTING POSITIONS:

STUDY SECTIONS-CHAired OR CO-CHAired:

- 2000-2001 Co-chair: American Heart Association, Great America 5 C Research Study Group
- 2001-2003 Chair: American Heart Association, National: Cell Phys. and Pharm 2
- 2007-2009 Chair: APS Ad Hoc Fellowship Review Committee

STUDY SECTIONS-REGULAR MEMBER:

- 1995-1997 American Heart Association (National) Cardiorenal Affiliate Study Group
- 2000-2001 American Heart Association, Great America 5 C Research Study Group
- 2001-2003 American Heart Association, National: Cell Phys. and Pharm 2
- 2000-2004 National Research Service Award Institutional Training Grant Review Special Emphasis Panel
- 2004-2008 NIH Study Section, Cellular and Molecular Biology of the Kidney [CMBK]

STUDY SECTIONS-AD-HOC AND SPECIAL

- 1993 Canadian Cystic Fibrosis Foundation
- 1992, 1995 VA Merit Review for Nephrology

1998	General Medicine B Study Section, National Institutes of Health, Ad-hoc member
2000	General Medicine B Study Section, National Institutes of Health, Special Emphasis Panel
2001, 2002	Pharmacology Study Section, National Institutes of Health, Ad-hoc member
2005	Member, Special Emphasis Panel to review Polycystic Kidney Disease Core Center Applications.
2007	Chair, Committee for APS Postdoctoral Fellowship Initiative
2009	Cellular and Molecular Biology of the Kidney, National Institutes of Health, Special Emphasis Panel
2010	Cellular and Molecular Biology of the Kidney, National Institutes of Health, Special Emphasis Panel
2011	Cell Biology I Study Section, UNMC predoctoral fellowships
2013	NIDDK P20 applications: Developmental Centers in Benign Urology
2014	ZRG DKUS-N (04) Member Conflicts: Kidney and Urological Physiology and Pathophysiology review panel.
2015	Kidney Molecular Biology and Genitourinary Organ Development Study Section (KMBD), National Institutes of Health Ad Hoc Reviewer

MILITARY SERVICE:

None

HONORS AND AWARDS:

1983	Award of Excellence in Renal Research, Renal Section of American Physiology Society
1986-1987	New Investigator Award, American Heart Association, Connecticut Affiliate
1988	PEW Scholar Nominee - Univ. of Texas Health Science Center at Houston
1996	Graduate School of Biomedical Sciences, Dean's Excellence Award, University of Texas Health Science Center, Houston, Texas
2001	Elected Fellow of the American Heart Association

2009 Distinguished Scientist Award, University of Nebraska Medical Center

MEMBERSHIPS AND OFFICES IN PROFESSIONAL SOCIETIES:

Society Memberships

American Physiological Society
 American Society of Nephrology
 Society of General Physiology
 American Heart Association- Council on Kidney in Cardiovascular Disease
 Nebraska Physiological Society

COMMITTEE ASSIGNMENTS:

SERVICE ON LOCAL COMMITTEES:

1988-1991	Admissions Committee Interviewer, UT-Houston Medical School
1991-1994	Admissions Committee Member, UT-Houston Medical School
1989-1997	Faculty Advisor Program, UT-Houston Medical School. Students: Diana Collins, Steven Weeden, Julius Aitsebaomo
1992-1993	Graduate Advisory Committee, UT-Houston, Member. Student: Shouchun Liu
1992-1996	Graduate Advisory Committee, UT-Houston, Chairman. Student: James Stockand, Ph.D. candidate
1995-1996	Graduate Advisor, UT-Houston, Student: Meredith Silverman, M.S. candidate
1995	Graduate Examining Committee, UT-Houston, Member Student: John Gunstream
1998-present	Graduate Committee, UNMC, Dept. of Physiol. and Biophysics
1998	Seed Grant Study Section, UNMC, Member
1999	Graduate subcommittee to formulate Biomedical Research Training Program course, UNMC
1999	Committee for use of Core Confocal Microscope Facility, UNMC
1999-2002	Chairman, Graduate Committee, Dept. of Physiol. and Biophysics, UNMC
1999	Member of Graduate Council Subcommittee to Evaluate Toxicology Graduate Program at UNMC

1999	Chair, Graduate Council Subcommittee to Evaluate the Formulation of New Courses in the Nursing Graduate Program at UNMC
1999-2005	Member, Scholastic Evaluations Committee, UNMC
1999-2000	Chair, Search Committee, Physiology and Biophysics, UNMC
2003-2015	Biomedical Research Training Program, UNMC, Physiology Representative
2006-2010	Member, CIP doctoral graduate committee of Jing Yang
2005-2009	Member, CIP doctoral graduate committee of Carmen Troncoso-Brindiero
2007-present	Chair of CIP Outstanding Performance Committee
2007-2010	Member, PEN doctoral graduate committee of Theodore Bartkowski
2008-2012	Member, CIP doctoral graduate committee of Liang Xiao
2009-2015	Chair and Member, CIP doctoral graduate committee of Ryan Cornelius
2011-2015	Member, CIP doctoral graduate committee of Bryan Becker
2011-2015	Member, CIP doctoral graduate committee of Yuan Ying
2014-2015	Member, Planning and Development Committee for Inter-Departmental Graduate Program of Biomedical Sciences
2014-present	Member, CIP doctoral graduate committee of Shamma Rahman
2014-present	Chair and Member, CIP doctoral graduate committee of Bangchen Wang
2016	Member, CIP Examining committee of Michael Price
2016-present	Member, PEN doctoral graduate committee of Justin Grassmeyer
2016	Chair, CIP Faculty Search Committee
2016-present	Member, Renal Block Development, New Medical Curriculum
2017-present	Member, CIP doctoral graduate committee of Zhiqiu Xia

GRADUATE STUDENTS MENTORED

1991-1995	James D. Stockand, PhD. Professor, Dept. of Physiology and Biophysics, Univ. of Texas Health Science Center, San Antonio
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2000-2005	Jennifer L. Pluznick, PhD. Assistant Prof. Dept. of Physiology, Johns Hopkins Univ. School of Medicine
2004-2007	Ruth M. Foutz, MS.
2003-2009	P. Richard Grimm, PhD. Postdoctoral Fellow, Dept. of Physiology, Univ. of Maryland Medical School
2009-2015	Ryan J. Cornelius, PhD. Postdoctoral fellow, Oregon Health and Science Univ.
2014-present	Bangchen Wang, MD/PhD candidate

POSTDOCTORAL FELLOWS MENTORED

Research Fellows

1993-1995	Shuichi Ono , M.D. Current Position: Chair, Dept. Int. Med., Ono Med. Sch. Tochigi, Japan
1999-2002	Rong Ma , PhD. Current Position: Associate Prof. of Integrative Physiology, Univ. of North Univ. of Texas Hlt. Sci. Ctr., Tx
2000-2003	Patrick Kudlacek , Ph.D. Current Position: Research Scientist, Ximerex, Oakland, NE
2001-2006	Peilin Wei , MD., Current Position: Fellow. Division of Nephrology, University of Alabama School of Medicine, Birmingham
2002-2006	Xiaoxia Wang , Ph.D., Current Position: Faculty, Dept. of Nephrology, The Sixth Hospital, Jiao Tong Univ., Shanghai, China
2008-2010	Liping Liu , MD, PhD., Postdoctoral Fellow, Current Position: Resident Pathology UNMC, Omaha, NE
2011-2015	Donghai Wen , MD, PhD. Postdoctoral Fellow: Current Position: Resident, Southwestern University, Dallas TX
2013-2014	Huaqing Li , PhD, Postdoctoral Fellow

EDITORIAL POSITIONS and NATIONAL COMMITTEES:

1989-1995	Editorial Board, American Journal of Physiology, Renal Section
2003-2005	Awards Committee, American Physiological Society

- 2007-present Editorial Board, American Journal of Physiology, Renal Section
- 2007-2009 Chair, Stop-Gap Postdoctoral Fellowship Program, American Physiological Society
- 2012-present Editorial Board, Frontiers in Physiology

DEPARTMENTAL CLUBS AND ORGANIZATIONS AND RESPONSIBILITIES:

- 1997-2001 Ion Channels Group, UNMC, Co-Founder and Member
- 1998-2001 Chairman of Seminar Program in Physiology and Biophysics
- 1999-2005 Coordinator of Undergraduate Summer Program in Physiology

ARTICLES IN JOURNALS:

1. Knight, T.F., **Sansom, S.C.** and E.J. Weinman. Renal tubular absorption of D-glucose, 3-O-methyl-d-glucose and 2-deoxy-D-glucose. *Am. J. Physiol.* 233 (Renal Fluid Electrolyte Physiol. 2):F416-F420, 1977.
2. Knight, T.F., **S.C. Sansom**, L. Hawk, S.J. Frankfurt and E.J. Weinman. The effects of anesthesia on the excretion of an isotonic saline load in the rat. *Pflugers Arch.* 373:139-143, 1978.
3. Weinman, E.J., **S.C. Sansom** and W.N. Suki. Attempts to demonstrate phosphate secretion in the rat. In: Homeostasis and other minerals (Proc. IIIrd Int. Workshop on Phosphate and Other Minerals, Madrid), pp. 71-77, 1978.
4. Weinman, E.J., S.J. Frankfurt, A. Ince and **S.C. Sansom**. Renal tubular transport of organic acids: Studies with oxalate and PAH in the rat. *J. Clin. Invest.*, 61:801-806, 1978.
5. Knight, T.F., H.O. Senekjian, **S.C. Sansom** and E.J. Weinman. The effects of intraluminal D-glucose and probenecid on urate absorption in the rat proximal tubule. *Am. J. Physiol.* 236:F526-F529, 1979.
6. Senekjian, H.O., T.F. Knight, **S.C. Sansom** and E.J. Weinman. Effect of flow rate and the extracellular fluid volume on proximal urate and water absorption. *Kidney Int.* 17:155-161, 1980.
7. Knight, T.F., H.O. Senekjian, **S.C. Sansom** and E.J. Weinman. Proximal tubule glucose absorption in the rat as a function of the delivered load. *Am. J. Physiol.* 238:F499-F503, 1980.

8. Weinman, E.J., **S.C. Sansom**, D.A. Steplock, H.O. Senekjian and T.F. Knight. Stopped-flow microperfusion studies of urate absorption from the rat proximal tubule. *Proc. Soc. Exp. Biol. Med.* 164:540-544, 1980.
9. Weinman, E.J., **S.C. Sansom**, D.A. Steplock, A.U. Sheth, T.F. Knight and H.O. Senekjian. The secretion of urate in the proximal convoluted tubule of the rat. *Am. J. Physiol.*, 239:F383-F387, 1980.
10. Knight, T.F., H. Senekjian, **S.C. Sansom** and E.J. Weinman. The influence of D-glucose on phosphate absorption in the rat proximal tubule. *Min. Elec. Met.* 41:37-42, 1980.
11. Weinman, E.J., D. Steplock, **S.C. Sansom**, T.F. Knight and H.O. Senekjian. The use of high performance liquid chromatography for determination of urate concentration in nanoliter quantities of fluid. *Kidney Int.* 19:83-85, 1981.
12. Weinman, E.J., H.O. Senekjian, **S.C. Sansom**, D. Steplock, A. Sheth and T.F. Knight. Evidence for active and passive urate transport in the rat proximal tubule. *Am. J. Physiol.* 240:F90-F93, 1981.
13. Knight, T.F., **S.C. Sansom**, H.O. Senekjian and E.J. Weinman. Oxalate secretion in the rat proximal tubule. *Am. J. Physiol.* 240:F295-F298, 1981.
14. **Sansom, S.C.**, H.O. Senekjian, T.F. Knight, H. Babino, D. Steplock and E.J. Weinman. Determination of the apparent transport constants for urate absorption in the rat proximal tubule. *Am. J. Physiol.* 240:F406-F410, 1981.
15. **Sansom, S.C.**; Kuo, Y.J.; Shanbour, L.L.; Weinman, E.J. The transport of urate in frog gastric mucosa. *Proc. Soc. Exp. Med. Biol.* 170 (3): 363-366, 1982.
16. Weinman, E.J., H.O. Senekjian and **S.C. Sansom**. Letter to the Editor: Kinetic constants for urate transport. *Am. J. Physiol.*, Vol. II, No. 1, F100-F101, 1982.
17. Weinman, E.J., **S.C. Sansom**, T.F. Knight and H.O. Senekjian. Alpha and beta adrenergic agonists stimulate water absorption in the rat proximal tubule. *J. Membrane Biol.* 69:107-111, 1982.
18. **Sansom, S.C.**, H.O. Senekjian, T.F. Knight, P. Frommer and E.J. Weinman. Water absorption in the proximal tubule: Effect of bicarbonate, chloride, gradient and organic solutes. *Proc. Soc. Exp. Biol. Med.* 172:111-117, 1983.
19. Weinman, E.J., **S.C. Sansom**, **S.C. Bennett**, A.M. Kahn. The effect of paraminohippurate and anion exchange inhibitors on the transport of urate in the rat proximal tubule. *Kidney Int.* 23:832-837, 1983.
20. **Sansom, S.C.**, E.J. Weinman and R.G. O'Neil. Microelectrode assessment of chloride-conductive properties of cortical collecting duct. *Am. J. Physiol.* 247:F291-F302, 1984.
21. O'Neil, R.G. and **S.C. Sansom**. Characterization of apical cell membrane Na⁺ and K⁺ conductances of cortical collecting duct using microelectrode techniques. *Am. J. Physiol. Renal.* 247:F14-F24, 1984.

22. O'Neil, R.G. and **S.C. Sansom**. Electrophysiological properties of cellular and paracellular conductive pathways of the rabbit cortical collecting duct. *J. Membrane Biol.* 82:281-294, 1984.
23. **Sansom, S.C.** and R.G. O'Neil. Mineralocorticoid regulation of apical cell membrane Na⁺ and K⁺ transport of the cortical collecting duct. *Am. J. Physiol. Renal.* 248:F858-F868, 1984.
24. **Sansom, S.C.** and R.G. O'Neil. Effects of mineralocorticoids on active and passive transport properties of the basolateral membrane of the cortical collecting duct. *Am. J. Physiol. Renal.* 251:F743-F757, 1986.
25. Muto, S., G. Giebisch and **S.C. Sansom**. Effect of adrenalectomy on conductive transport properties of the rabbit cortical collecting duct. *Am. J. Physiol. Renal.* 253:F742-F752, 1987.
26. **Sansom, S.C.**, S. Muto and G. Giebisch. Na-dependent effects of DOCA on transport properties of apical and basolateral cell membranes of cortical collecting ducts of ADX rabbits. *Am. J. Physiol. Renal.* 253:F753-F759, 1987.
27. Muto, S., **S.C. Sansom** and G. Giebisch. Effects of high K diet on the transport properties of the isolated cortical collecting duct of the adrenalectomized rabbit. *J. Clin. Invest.* 81:376-380, 1988.
28. Muto, S., G. Giebisch and **S.C. Sansom**. An acute increase of peritubular K stimulates K transport through cell pathways of CCT. *Am. J. Physiol. Renal.* 255:F108-F114, 1988.
29. **Sansom, S.C.**, S. Agulian, S. Muto, V. Illig and G.H. Giebisch. K activity of CCD principal cells from normal and DOCA-treated rabbits. *Am. J. Physiol. Renal.* 255:F108-F114, 1989.
30. **Sansom, S.C.**, B-Q La and S.L. Carosi. Double-barreled chloride channels of collecting duct basolateral membrane. *Am. J. Physiol. Cell Physiol.* 259:F46-F52, 1990.
31. La, B-Q, S.L. Carosi, J. Valentich, S. Shenolikar and **S.C. Sansom**. Regulation of epithelial chloride channels by protein phosphatase. *Am. J. Physiol. Cell Physiol.* 29:C1217-C1223, 1991.
32. **Sansom, S.C.** and S.L. Carosi. Properties of single and double-barreled Cl⁻ channels of shark rectal gland in planar bilayers. *J. Membr. Biol.* 126:67-73, 1992.
33. Hanrahan, J.W., F. Duguay, S.C. **Sansom**, N. Alon, T. Jensen, J.R. Riordan and Z. Grzelczak. Low-conductance chloride channel activated by cAMP in the rectal gland of the shark *Squalus Acanthis* and in cells heterologously expressing the shark CFTR gene. *Bull. Mount Desert Island Biol. Lab.* 32:48-52, 1993.
34. Stockand, J.D., A. Sultan, D. Molony, T. DuBose, Jr. and **S.C. Sansom**. Interactions of cadmium and nickel with K channels of vascular smooth muscle. *Toxicology & Applied Pharmacol.* 121:30-35, 1993.

35. **Sansom, S.C.** and J. Stockand. Differential Ca^{2+} sensitivities of BK(Ca) isoforms in bovine mesenteric vascular muscle. *Am. J. Physiol., Cell Physiol.* 351:C1182-C1189, 1994.
36. Ono, S., T. Mougouris, T.D. DuBose, Jr. and **S.C. Sansom**. ATP and calcium modulation of nonselective cation channels in IMCD cells. *Am. J. Physiol. Renal* 267:F558-F565, 1994.
37. **Sansom, S.C.**, T. Mougouris, S. Ono, .D. DuBose, Jr. ATP-sensitive K^{+} -selective channels of inner medullary collecting duct cells. *Am. J. Physiol., Renal* 267:F489-F496, 1994.
38. Stockand, J.D. and **S.C. Sansom**. Large Ca^{2+} -activated K^{+} channels responsive to Angiotensin II in cultured human mesangial cells. *Am. J. Physiol., Cell Physiol.*, 267:C2080-C1086, 1994.
39. Kragenbrink, R., S.C. Higham, **S.C. Sansom** and T.A. Pressley. Chronic stimulation of acetylcholine receptors: Differential effects on Na,K-ATPase isoforms in a myogenic cell line. *Synapse*, 23:219-223, 1996.
40. **Sansom, S.C.** and J.D. Stockand. Physiological role of large, Ca^{2+} -activated K^{+} channels in human glomerular mesangial cells. *Clinical & Experimental Pharmacol. & Physiology*, 23:76-82, 1996.
41. Stockand, J.D. and **S.C. Sansom**. Role of large Ca^{2+} -activated K channel in regulation of mesangial contraction by nitroprusside and ANP. *Am. J. Physiology, Cell Biology*, 270:, 1996.
42. Stockand, J.D. and **S.C. Sansom**. Mechanism of activation by cyclic GMP-dependent protein kinase of large Ca^{2+} -activated K^{+} channels in human glomerular mesangial cells. *Am. J. Physiol., Cell Biology*, 271:1669-1677, 1996.
43. Stockand, J.D. and **S.C. Sansom**. Activation by methylene blue of large Ca-activated K channels. *Biochimica et Biophysica Acta (Rapid Report)*, 1285:123-126, 1996.
44. **Sansom, S.C.**, J.D. Stockand, D. Hall and B. Williams. Regulation of large, calcium-activated potassium channels by protein phosphatase 2A. *Journal of Biological Chemistry*, 272:9902-9906, 1997.
45. Stockand, J.D. and **S.C. Sansom**. Regulation of filtration rate by glomerular mesangial cells in health and diabetic renal disease. *Am. J. of Kidney Diseases*, 29:971-981, 1997.
46. Stockand, J.D., M. Silverman, D. Hall, T. Derr, B. Kubacak, and **S. C. Sansom**. Arachidonic acid potentiates the feedback response of mesangial BK_{Ca} channels to angiotensin II. *Am. J. Physiol., Renal Physiol.*, 274: F658-F664, 1998.
47. Stockand, J.D. and **S.C. Sansom**. Glomerular mesangial cells: Electrophysiology and regulation of contraction. *Physiological Reviews*, 78 (3): 723-744, 1998.

48. **Sansom, S.C.**, P. Mehta, and D. Hall. Potentiating effects of hyperosmolality and epidermal growth factor on the release of arachidonic acid in human glomerular mesangial cells, *Diabetes Research and Clinical Practice* 43: 21-31, 1999.
49. Hall, D.A., P.K. Carmines and **S.C. Sansom**. Dihydropyridine-sensitive Ca²⁺ channels in human glomerular mesangial cells. *Am. J. Physiol. Renal.* 278:F954-F961, 2000
50. Ma, R., S. Smith, A. Child, P.K. Carmines and **S.C. Sansom**. Store-operated Ca²⁺ channels in human glomerular mesangial cells. *Am. J. Physiol. Renal.* 278:F97-F103, 2000
51. **Sansom, S.C.**, R. Ma, P.K. Carmines and D. Hall. Regulation of Ca²⁺-activated K⁺ channels by multifunctional Ca²⁺/calmodulin-dependent kinase. *Am. J. Physiol. Renal Physiol.* 279. F283-F288. 2000
52. Ma, R. and **S.C. Sansom**. Epidermal growth factor activates store-operated calcium channels in human glomerular mesangial cells. *Journal of the American Society of Nephrology.* 12. 47-53, 2001.
53. Fallet, R.W., J.P. Bast, K. Fujiwara, N. Ishii, **S.C. Sansom** and P.K. Carmines. Influence of Ca²⁺-activated K⁺ channels on rat renal arteriolar responses to depolarizing agonists. *Am. J. Physiol. Renal.* 280. F583-F591, 2001.
54. Ma, R., P. E Kudlacek, J. Pluznick and **S. C. Sansom**. Protein kinase C activates store-operated Ca²⁺ channels in human glomerular mesangial cells. *Journal of Biological Chemistry.* 276 (28), 25759-25765, 2001.
55. Ma, R., P.E. Kudlacek and **S.C. Sansom**. Protein kinase Calpha participates in activation of store-operated Ca(2+) channels in human glomerular mesangial cells. *Am.J. Physiol. Cell Physiol.* Vol. 283 (5). p. 1390-1398. 2002.
56. Pluznick, J.L., Wei, P., Carmines, P.K. and **S.C. Sansom**. Renal Fluid and Electrolyte Handling in BK_{Ca}- α 1^{-/-} Mice. *Am. J. Physiol. Renal.* 284. F1274-F1279, 2003.
57. Kudlacek, P.E., Pluznick, J.L., Ma, R. and **S.C. Sansom**. The role of Hbeta1 in activation of human mesangial BK channels by cGMP-kinase. *Am. J. Physiol. Renal.* Vol. 284. (2) p. 289-294. 2003
58. Li, W.-P., Tsiokas, L., **Sansom, S.C.** and R. Ma. Epidermal growth factor activates store-operated Ca²⁺ channels through an IP₃ independent pathway in human glomerular mesangial cells. *J. Biological Chemistry.* 279 (6), 4570-4577. 2004.
59. Wang, X., Pluznick, J.L., Wei, P., Padanilam, B.J. and **S.C. Sansom**. TRPC4 forms store-operated Ca²⁺ channels in mouse mesangial cells. *Am. J. Physiol. Cell.* 287 (2), 357-364. 2004.
60. Wei, P., Lane, J., Lane, P., Padanilam, B.J. and **S.C. Sansom**. Glomerular structural and functional changes in a high-fat diet mouse model of early-stage Type 2 diabetes syndrome. *Diabetologia.* 47: 1541-1549. 2004.
61. Pluznick, J.L., Wei, P., Grimm, P.R., and **S.C. Sansom**. The BK- β 1 subunit:

- Immunolocalization in the mammalian connecting tubule and its role in the kaliuretic response to volume expansion. *Am. J. Physiol. Renal Physiol.* 288: F846-F854. 2005
62. Ma, R., J.L. Pluznick and **S.C. Sansom**. Ion channels in glomerular mesangial cells: function, malfunction, or fiction. *Physiology*. 20: 102-111, 2005.
 63. Pluznick, J.L. and **S.C. Sansom**. BK channels in the kidney: Role in K⁺ secretion and localization of molecular components. *Am. J. Physiol. Renal Physiol.* 291: F517-F529. 2006
 64. **Sansom, S.C.** Re-emergence of maxi K as a K secretory channel. *Kidney International*. 71 (12): 1322-1324. 2007.
 65. Grimm, P. R., Foutz, R.M., Brenner, R. and **S. C. Sansom**. Identification and localization of BK- β subunits in the distal nephron of the mammalian kidney. *Am. J. Physiol, Renal Physiol.* 293: F350-359. 2007.
 66. Grimm, P.R. and **S.C. Sansom**. BK channels in the kidney. *Current Opinion in Nephrology and Hypertension*. 16 (5).430-436. 2007.
 67. **Sansom, S.C.** and P. A. Welling. Two channels for one job. *Kidney International*. 72 (5). 629-630. 2007.
 68. Wang, X., Pluznick, J.L., Settles, D.C. and **S. C. Sansom**. Association of VASP with TRPC4 in PKG-mediated inhibition of the store-operated calcium response in mesangial cells. *Am. J. Physiol., Renal Physiol.* 293 (6): 1768-1776. 2007.
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 71. Grimm, P.R., Irsik, D.L., Settles, D.C., Holtzclaw, J.D., and **S.C. Sansom**. Hypertension of *Kcnmb1*^{-/-} is linked to deficient K secretion and aldosteronism. *Proceedings of the National Academy of Sciences*. 106 (28): 11800-11805, 2009.
 72. Grimm, P.R, Irsik, D.L., Liu, L., Holtzclaw, J.D. and **S.C. Sansom**. Role of *Kcnmb1* in Na reabsorption by cortical collecting ducts of Na-deprived mice. *American Journal of Physiology: Renal*. 297 (2), 420-428, 2009.
 73. Meehan, D.T., Delimont, D., Cheung, L. Zallocchi, M., **Sansom, S.C.**, Holtzclaw, J.D., Rao, V. and D. Cosgrove Biomechanical strain mediated maladaptive gene regulation as a contributing factor in Alport glomerular disease. *Kidney International*. 76, 968-976. 2009.
 74. Holtzclaw JD, Grimm PR, and **S.C.Sansom**. Intercalated cell BK-alpha/beta4 channels

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76. Grimm, P.R. and **S.C. Sansom**. BK channels and a new form of hypertension. *Kidney Int.* 2010; 78(10); 556-662 PMID: 20720523
77. Holtzclaw, J.D., Cornelius, R.J.; Hatcher, L.I.; and **S.C. Sansom**. Coupled ATP and potassium efflux from intercalated cells. *Am J Physiol Renal Physiol.* 2011; 300(6): F1319-1326. PMID: 21454249
78. Holtzclaw, J.D, Grimm, P.R. and **S.C. Sansom**. Role of BK channels in hypertension and potassium secretion. *Curr. Opin. Nephrol. Hypertens.* 2011; 20(15); 512-517. PMID: 21670674
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81. Wen, D., Cornelius, R.J., Yuan, Y., and **S.C. Sansom** Regulation of BK- α expression in the distal nephron by aldosterone and urine pH. *Am J Physiol Renal Physiol.* 2013. 305(4): F463-F476. PMID: 237616735.
82. Wen, D., Cornelius, R.J., and **S.C. Sansom**. Interacting influence of diuretics and diet on BK channel-regulated K homeostasis. *Current Opinion in Pharmacology.* 2014, 15:28-32. PMID: 3984455
83. Wen, D., Cornelius, R.J., Rivero-Hernandez, D., Yuan, Y., Li, H. Ph.D.¹, Weinstein, A.M. and **S. C. Sansom**. Relation between BK- α/β 4-mediated K secretion and ENaC-mediated Na reabsorption. *Kidney International.* 2014, 86: 139-145. PMID: 24573316
84. Cornelius, R.J., Wen, D., Li, H., Yuan, Y. Wang-France, J., Warner, P.C. and **S.C. Sansom**. Low Na, high K diet and the role of aldosterone in BK-mediated K excretion. *PLoS One.* 2015 10 (1) e0115515. [PM:25607984](#)
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86. Wen, D., Yuan, Y., Cornelius, R.J., Li, H., Warner, P.C, Wang, B., Wang-France, J., Boettger, T. and **S.C. Sansom**. Deficient acid handling with distal RTA in the NBCe2 knockout mouse. *AJP: Renal,* 2015. 309 (6) 523-530 [PM:26109087](#)

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88. Cornelius, R.J., Wang, B., Wang-France, J., and **S.C. Sansom**. Maintaining K balance on the low Na, high K diet. *AJP: Renal*, 2016. 310 (7) 581-595 PM:[26739887](#)
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CHAPTERS:

- 1 **Sansom, S.C.** and G.H. Giebisch. Potassium Homeostasis: Control of Potassium Excretion. In ***Textbook of Nephrology***, 2nd Edition, edited by S. Massry and R. Glasscock. Williams & Wilkins, Baltimore, 1986.
2. **Sansom, S.C.** Mineralocorticoid Regulation of K Channels of the Basolateral Membrane of the Mammalian Cortical Collecting Duct (CCD). In: ***Aldosterone: Fundamental Aspects***, Eds. J.P. Bonvalet, N. Farman, M. Lombes, M.E. Rafestom-Oblim. Paris: Colloque INSERM/John Libbey Eurotext Ltd., pp. 195-303, 1991.
- 3 **Sansom, S.C.** and G.H. Giebisch. Potassium Homeostasis: Control of Potassium Excretion. In: ***Textbook of Nephrology***, 3rd Edition, eds. S. Massry and R. Glasscock, Williams & Wilkins, Baltimore, 1993.
- 4 **Sansom, S.C.** S. Muto and G.H. Giebisch. Potassium Homeostasis: Control of Potassium Excretion. In ***Textbook of Nephrology***, 2nd Edition, edited by S. Massry and R. Glasscock. Williams & Wilkins, Baltimore. 2000.
5. Stockand, J.D. and **Sansom, S.C.** Potassium channels in the renal circulation. In: ***Cardiovascular Biology***. Eds. S.L. Archer, and N.J. Rusch, Kluwer Academic/Plenum Publishers, New York, Chapter 28, pp.571-589. 2001.
6. Wen, D. Cornelius, R.J., and **S.C. Sansom**. BK channels in epithelia. In: ***Ion Channels and Transporters of Epithelia in Health and Disease***. Eds. Hamilton, Devor, and Harvey. Springer, APS. 2015.

TEACHING ACTIVITIES:

Courses

- | | |
|-----------|---|
| 1991-1997 | Fundamentals of Clinical Medicine, Department of Medicine, Division of Nephrology, University of Texas Medical School, Houston, Texas |
| 1988-1997 | Mammalian Physiology, Department of Physiology and Cell Biology, University of Texas Medical School, Houston, Texas |

1994-1997	Principles of Physiology, Graduate School of Biomedical Sciences, University of Texas Health Science Center, Houston, Texas
1992-1997	Research in Biomedical Sciences, Graduate School of Biomedical Sciences, University of Texas Health Science Center, Houston, Texas
1996	Problem Based Learning, University of Texas-Houston, Medical School
1997	Advanced Cardiovascular Physiology, Graduate Program in Physiology and Biophysics, UNMC
1998	Careers in Health Sciences, Department of Biology, The University of Northern Iowa
1998-present	Co-coordinator and lecturer, Ion Channels and Disease, Advanced graduate course in Cellular and Integrative Physiology, UNMC
1999-present	Lecturer, Intermediate Physiology (course #306/606/806), UNMC
1999-2005	Coordinator of Seminar-Journal club course, Graduate Program in Physiology and Biophysics, UNMC
2000-present	Lecturer, Advanced Renal Physiology, Graduate Program in Physiology and Biophysics, UNMC
2006-present	Lecturer, Core 2 (Cellular), First year medical students, UNMC
2011-present	Recitation in Intermediate Physiology, 3 hrs/year

Courses Originated

1998	Ion Channels and Disease, Advanced Physiology Course, Graduate Program in Cellular and Integrative Physiology, UNMC
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Sponsorships of Medical Student Research Projects:

1990	Diana Collins, UT-Houston Medical Student Summer Program. Project: Regulation of reconstituted ion channels of membrane vesicles of shark rectal gland.
1994	Brian Kubacak, UT-Houston Medical Student Summer program. Project: The interaction of insulin and prostaglandins on agonist-induced contraction in human mesangial cells in culture.
1995	Gabriel Ortiz, UT-Houston Medical Student Summer Program. Project: Effects of high glucose on cGMP levels in human mesangial cells.

- 2000 David A. Hall, UNMC Medical Student Summer Program. Project: Role of Hbeta2 in the activation of BK by NS1619.
- 2006 Christopher Balwanz, UNMC Medical Student Summer Program. Project: TRPC channels in podocytes.
- 2008 Jakeb Riggle, UNMC MD/PhD student rotation. Project: Differential responses of MDCK-intercalated cells and MDCK-principal cells to ATP-induced intracellular Ca increase
- 2009 Matthew Dennis, UNMC Medical Student Summer Program. Project: Role of BK-b4 in activation of BK by ATP
- 2013 Bangchen Wang, UNMC MD/PhD student rotation. Project: Effects of high K bicarbonate vs high K chloride diet on blood pressure of mice

Sponsorship of Graduate Student Projects:

- 1992-1996 **James D. Stockand**, Graduate Student, Ph.D. Graduate Advisor. Dissertation: A Role for Ca^{2+} -activated K^+ channels in regulation of mesangial cell tones. Current Position: Prof. of Physiology and Biophysics, Univ. of Tx. Hlt. Sci Ctr., San Antonio, TX
- 2000-2005 **Jennifer L. Pluznick**, Graduate Student, Ph.D. Graduate Advisor: Dissertation: Renal function and electrolyte balance in the BK-beta-/- hypertensive mouse model. Current Position: Assistant Professor, Dept. of Cellular and Molecular Physiology, Johns Hopkins School of Medicine, Baltimore, MD.
- 2004-2006 **Nicole S. Montagne**, Graduate student, MS. Graduate Advisor. Non-thesis: TRP channels in the kidney.
- 2005-2007 **Ruth M. Foutz**, Graduate student, MS. Graduate Advisor. Thesis: Effect of insulin on BK channels in mesangial cells.
- 2004-2009 **P. Richard Grimm**, Graduate Student, Ph.D. Graduate Advisor: Dissertation: The role of BK-beta1 in regulating extracellular volume. Present position: Postdoctoral fellow, Dept. of Physiology, University of Maryland School of Medicine, Baltimore, MD.
- 2009-2014 **Ryan J. Cornelius**, Graduate Student, PhD, Graduate Advisor
Dissertation: Regulation of BK-a/b4-mediated K secretion by aldosterone. Present Position: Postdoctoral Fellow, Renal Division, Department of Medicine, Oregon Health Science Center, Portland Oregon.

Sponsorship of student undergraduate research projects

- 1989-1990 Bao-Quoc La. Project: A Reconstitution of Cl^- channels from shark rectal gland apical membrane in planar lipid bilayers

- 1992-1993 Aisha Sultan. Project: Interactions of cadmium and nickel with K channels of vascular smooth muscle
- 1995 Thomas Derr. Project: Regulation of mesangial K channels by free fatty acids.
- 1998-2000 Angie Child. Project: Measurements of calcium concentration in human glomerular mesangial cells.
- 1999 Sonja Smith Project: Differential inhibition by La^{3+} and Cd^{2+} of store-operated Ca^{2+} channels in human glomerular mesangial cells
- 2002 Emilie Mercier. Project: Role of TRPC store-operated Ca channels in growth of mouse mesangial cells in culture.
- 2004 Joslin Bowen. Project: Effects of high insulin and high glucose media on store-operated Ca channel activity in mouse mesangial cells in culture
- 2006-2007 Andrew Huss. Project: Association between vasodilator associated phosphoprotein and IP3R in MDCK cells

SESSIONS and SYMPOSIUMS CHAIRED:

- 1988 Chairman, Session: Renal Ion Transport. Federation of American Societies for Experimental Biology, 72nd Annual Meeting.
- 1990 Chairman, Session: Renal Ion Transport. Federation of American Societies for Experimental Biology, 74th Annual Meeting.
- 1994 Chairman, Session: Renal Transport II. Experimental Biology 94.
- 1995 Co-Chairman, Symposium: Role of Mesangial Cell Ion Transport in Glomerular Physiology and Disease. Experimental Biology 95. Title: Regulation of Mesangial Cell Tone by Ca^{2+} -Activated K^+ Channels.
- 1999 Chairman, Session: Cell and Transport Physiology - Inorganic Ions (Na/K/Cl). American Society of Nephrology.
- 2004 Chairman, Symposium: TRP channels in the kidney. American Society of Nephrology
- 2006 Chairman, Symposium: TRP channels in the kidney. American Society of Nephrology
- 2010 Co-chairman, Featured Topic: Ion Channels. Experimental Biology 2010.

SESSIONS SERVED AS ABSTRACT REVIEWER OR JUDGE OF PRESENTATIONS

- 1994 FASEB: Student abstracts and presentations for Renal Award of Excellence
- 1996 American Society of Nephrology. Session: Cell and Transport Physiology - Inorganic Ions (Na/K/Cl).
- 1998 Experimental Biology 98: Student abstracts and presentations for Renal Award of Excellence
- 1999 American Society of Nephrology. Session: Cell and Transport Physiology - Inorganic Ions (Na/K/Cl).
- 2003-2005 Experimental Biology 98: Student abstracts and presentations for Renal Award of Excellence
- 2005 American Society of Nephrology. Abstracts reviewer.
- 2007 Nebraska Physiological Society. Judge of undergraduate poster session.
- 2009 Nebraska Physiological Society. Judge of graduate poster session

INVITED SEMINAR PRESENTATIONS (Recent):

- 1994 University of Texas at Austin, Department of Zoology. Title: Ca-activated K selective channels in smooth muscle cells in culture.
- 1995 University of Texas Medical Branch, Department of Physiology. Title: Physiological role of large Ca-activated K channels in human mesangial cells in culture.
- 1995 University of Nebraska Medical School, Department of Physiology, Omaha, Nebraska. Title: Role of large Ca-activated K channels in regulation of mesangial contraction by nitroprusside and ANP.
- 1995 Texas Tech University Health Science Center, Department of Physiology. Title: Mechanism of activation by cyclic GMP-dependent protein kinase of large, Ca-activated K channels in human mesangial cells.
- 1996 University of Texas at Austin, Department of Zoology. Title: Mechanism of activation by cyclic GMP-dependent protein kinase of large, Ca-activated K channels in human mesangial cells.
- 1998 Kansas State University, School of Veterinary Medicine, Department of Basic Sciences. Title: Signal transduction pathways for the regulation of tone of human glomerular mesangial cells.
- 1998 University of Northern Iowa, Department of Biology, Title: Signal transduction pathways for the regulation of tone of human glomerular mesangial cells@

- 1998 University of Nebraska Medical Center, Department of Pharmacology, Title: Signal transduction pathways for the regulation of tone of human glomerular mesangial cells.
- 1999 Emory University School of Medicine, Department of Physiology, Title: Calcium regulatory pathways in glomerular mesangial cells.
- 2000 University of Nebraska Medical Center, Veterans Administration, Dept. of Medicine. Title: Calcium regulatory pathways in glomerular mesangial cells.
- 2000 University of Nebraska Medical Center, Diabetes Research Initiative Program, Dept. of Endocrinology. Title: Regulation of store-operated Ca channels by EGF in human glomerular mesangial cells.
- 2001 Medical College of Wisconsin. Department of Pharmacology and Toxicology. Title: Role of the beta accessory subunits in the regulation of BK channels by cGMP-kinase.
- 2001 Stanford University Medical School. Department of Physiology and Biophysics. Title: Role of the beta accessory subunit in the regulation of BK channels by cGMP-kinase.
- 2002 University of Nebraska, Kearney. Department of Biology. Title: Role of K channels in the ANP-evoked elevation in glomerular filtration rate.
- 2005 University of Texas Health Science Center at San Antonio, Department of Physiology and Biophysics. Title: BK-beta1 subunit: immunolocalization in the mammalian connecting tubule and its role in the kaliuretic response to volume expansion.
- 2005 University of North Texas Health Science Center, Department of Integrative Physiology. Title: BK-beta1 subunit: immunolocalization in the mammalian connecting tubule and its role in the kaliuretic response to volume expansion.
- 2005 University of Oregon Health Science Center, Division of Nephrology, Dept. of Medicine. Title: BK-beta1 subunit: immunolocalization in the mammalian connecting tubule and its role in the kaliuretic response to volume expansion.
- 2007 Rosalind Franklin University, Chicago Medical School, Chicago, IL. Department of Physiology and Biophysics. Title: Localization and role of BK channels in the kidney.
- 2009 University of Texas Health Science Center at Houston, Department of Integrative Biology and Pharmacology. Title: The role of the large Ca-activated subunit Kcnmb1 in the regulation of volume and electrolyte homeostasis.
- 2009 University of Nebraska Medical Center, Veterans Administration, Dept. of Medicine. Title: BK channels and a new form of hypertension.

- 2010 University of Texas Health Science Center at San Antonio, Department of Physiology and Biophysics. Title: BK channels and a new form of hypertension.
- 2012 Yale University School of Medicine, Dept. of Cellular and Molecular Physiology. Title: Role of BK channels in the ancient diet - secrets of the Yanomami.
- 2013 University of Nebraska Medical Center, Department of Surgery. Title: Role of BK channels in the ancient diet - secrets of the Yanomami.
- 2013 McGill University, Dept. of Physiology. Title: Role of BK channels in the ancient diet - secrets of the Yanomami.
- 2014 Emory University School of Medicine, Division of Nephrology, Dept. of Medicine. Title: Role of BK channels in the ancient diet; secrets of the Yanomami.

INVITED SYMPOSIUM *PRESENTATIONS* AT NATIONAL/INTERNATIONAL MEETINGS:

- 1991 International Symposium on Aldosterone, Abbaye de Fontevraud, France. Title: Mineralocorticoid regulation of channels of the basolateral membrane of the mammalian cortical collecting duct (CCD).
- 1991 XXXI International Congress of Physiological Sciences, Helsinki, Finland. Title: Coupling between apical and basolateral membranes in the distal nephron.
- 1992 Symposium: Potassium Transport in the Kidney, Yale University, New Haven, Connecticut. Title: Regulation of K⁺ transport across basolateral membrane of cortical collecting duct.
- 1995 Symposium: Role of Mesangial Cell Ion Transport in Glomerular Physiology & Disease. Experimental Biology 1995. Title: Regulation of mesangial cell tone by Ca²⁺-activated K⁺ channels.
- 2005 Symposium: Role of K in glomerular mesangium. ISN Forefront Meeting. Kartause Ittingen, Switzerland.
- 2007 Symposium: Pennington Scientific Symposium. "Diabetic Complications". Baton Rouge, Louisiana. Title: Effects of simvastatin in reversal of diabetic nephropathy in type 2 diabetic mice.
- 2007 Symposium. Maxi K Channels and Their Role in Renal Potassium Secretion. American Society of Nephrology, 2007. Title: "Role of maxi K channels in K secretion".
- 2009 Symposium: The contributions of ROMK and BK channels to Renal K secretion. Experimental Biology 2009. Title: "Role of Kcnmb1 in the regulation of blood volume and K concentration".
- 2015 Symposium: Organizer and Co-chair: Title: Control of electrolyte balance by novel pathways in intercalated cells. Experimental Biology 2015.