BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.
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NAME	POSITION TITLE
Wingo, Charles S., M.D.	Principal Investigator
eRA COMMONS USER NAME (credential, e.g., agency login) cswingo	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
Stanford University, Stanford, CA	BS	1971	Physical Chemistry
Louisiana State University School of Medicine, New Orleans, LA	MD	1975	Medicine
University of Texas Medical School at Houston	Residency	1975-1978	Internal Medicine
University of Texas Southwestern Medical School	Fellowship	1978-1981	Nephrology

A. Personal statement

I am a nephrologist and clinician-scientist with a long history of NIH, and Department of Veterans Affairs funded extramural research and I have a firm commitment to the training of junior scientists. I have trained seven post-doctoral fellows and eight graduate students, many of whom have current academic positions. I consider training junior investigators to be essential for the improvement our understanding of basic mechanisms that advance medicine. My research is directed at understanding the molecular mechanisms and regulation of sodium, potassium, acid-base transport and systemic blood pressure control. My laboratory is currently focused on understanding the mechanisms that regulate the edn1 and ATP12a genes that express are responsible for expression of the proteins endothelin-1 and HKα2, respectively.

My contributions to nephrology have been acknowledged by my election to the American Society of Clinical Investigation, President of the Southern Society of Clinical Investigation, President of the 1998 International Symposium on Potassium Transport, and service as a permanent member of both VA and NIH study sections.

My contribution to this proposal is to provide mentorship to trainees under the T32 grant. I will provide supervision and training in cardiovascular and renal physiology, ion and membrane transport, signal transduction mechanisms, cell physiology, biochemistry and molecular biology.

B. Position and Honors

Research and Teaching Experience

1981-85	Assistant Professor of Medicine, University of Florida College of Medicine
1985-86	Assistant Professor of Medicine and Physiology, University of Florida College of Medicine
1986-92	Associate Professor of Medicine and Physiology, University of Florida College of Medicine
1992-Present	Professor of Medicine and Physiology, University of Florida College of Medicine
2003-08	Associate Chief of Staff-Research, North Florida-South Georgia Veteran's Health System
2008-Present	Craig and Audrae Tisher Endowed Chair in Nephrology & Professor of Medicine & Physiology
2008-2010	Interim Co-Chief of Nephrology, Division of Nephrology, University of Florida
2008 – 2011	Professor, University of Florida Research Foundation, University of Florida

Honors, Awards and Societies

Departmental Honors in Chemistry, 1971
National Kidney Foundation Research Fellowship, 1979-1981
Career Development Award, 1985-1987
Permanent Member, VA Nephrology Study Section, 1992-1995
President, Southern Society for Clinical Investigation, 1996 - 1997
Member, American Society for Clinical Investigation, 1990-Present
President, International Symposium on Potassium Transport and Transporters, 1998

Permanent Member, General Medicine B Study Section, 2000-2003
Craig and Audrae Tisher Endowed Chair in Nephrology & Professor of Medicine & Physiology, 2008-Present
University of Florida Research Foundation Professor of Research, 2009-2011

C. Selected peer review publications(15 of 96 total publications, in chronological order):

1. Wingo, C.S.: Active proton secretion and potassium absorption in the rabbit outer medullary collecting duct: Functional evidence for proton-potassium-activated adenosine triphosphatase. *J. Clin. Invest*. 84:361-365, 1989.
2. Lynch, I.J., Rudin, A., Xia, S-L., Stow, L.S., Shull, G.E., Weiner, I.D., Cain, B.D., and Wingo, C.S.: Impaired Acid Secretion in Cortical Collecting Duct Intercalated Cells from H,K-ATPase-deficient Mice: Role of HK Isoforms. *Am J Physiol Renal Physiol.* 2008 Mar;294(3):F621-7. PubMed PMID: 18057185.
3. Gumz, M.L., Stow, L.R., Lynch, I.J., Greenlee, M.L., Rudin, A. Cain, B.D., Weaver, D.R., Wingo, C.S.: The Circadian Clock Protein Period 1 Regulates Expression of the Renal Epithelial Sodium Channel in Mice. *J Clin Invest.* 119(8): 2423-34, 2009.
4. Stow, L.R., Gumz, M.L., Lynch, I.J., Greenlee, M., Rudin, A., Cain B.D., Wingo, C.S.: Aldosterone Modulates Steroid Receptor Binding to the Endothelin – 1 gene(edn1). *J Biol Chem.* 284(44): 30087-96, 2009.
5. Gumz, M.L., Lynch, I.J., Greenlee, M.M., Cain, B.D, Wingo, C.S.: The Renal H+, K+ ATPases: Physiology, Regulation, and Structure. *Am J Physiol Renal Physiol*. 298(1):F12-21, 2010.
6. Lynch, I. J., Greenlee, M. M., Gumz, M. L., Rudin, A., Xia, S-L., and Wingo, C. S. Heterogeneity of H,K-ATPase-mediated acid secretion along the mouse collecting duct . *Am J Physiol Renal Physiol* 298(2):F408-15, 2010.
7. Gumz,, M.L., Cheng,, K.Y., Lynch, I.J., Stow, L.R., Greenlee, M.M., Cain, B.D., Wingo, C.S.: Regulation of aENaC expression by the circadian clock protein Period 1 in mpkCCD(c14) cells. Biochim Biophys Acta. 1799(9):622-9. Epub 2010 Sep 22.
8. Greenlee, M.M., Lynch, I.J., Gumz, M.L., Cain, B.D., and Wingo, C.S. Mineralocorticoids Stimulate the Activity and Expression of Renal H+,K+-ATPases J. Am. Soc. Nephrol. 22: 49–58, 2011 [Epub ahead of print 2010 Dec 16].
9. Stow L.R., Richards J., Cheng K.Y., Lynch I.J., Jeffers L.A., Greenlee M.M., Cain B.D., Wingo C.S., Gumz M.L. The circadian protein Period 1 contributes to blood pressure control and coordinately regulates renal sodium transport genes. *Hypertension* 59(6):1151-6, 2012.
10. Welch A.K., Jacobs M.E., Wingo C.S., Cain B.D. Early progress in epigenetic regulation of endothelin pathway genes. *Br J Pharmacol.* 168(2):327-34, 2013.
11. Jacobs, M.E., Wingo, C.S., and Cain, B.D. An Emerging Role for MicroRNA in the Regulation of Endothelin-1. *Front Physiol* 4: 22, 2013. PM:23424003
12. Lynch, I.J., Welch A.K., Kohan D.E., Cain B.D. and Wingo C.S. Endothelin-1 inhibits sodium reabsorption by ETA and ETB receptors in the mouse cortical collecting duct. *Am J Physiol Renal Physiol* 305:(4) F568-F573, 2013. PM:23698114
13. Richards J., Cheng KY, All S., Skopis G., Jeffers L., Lynch I.J., Wingo, C.S., Gumz, ML. A role for the circadian clock protein Per1 in the regulation of aldosterone levels and renal Na+ retention. *Am J Physiol Renal Physiol* 305(12):F1697-704, 2013. PMID:24154698
14. Jacobs ME, Jeffers LA, Welch AK, Wingo CS, Cain BD. microRNA regulation of endothelin-1 mRNA in renal collecting duct cells. *Life Sci* S0024-3205(14)00315-4, 2014. PMID: 24632479
15. Richards J, Welch AK, Barilovits SJ, All S, Cheng KY, Wingo CS, Cain BD, Gumz ML. Tissue-specific and time-dependent regulation of the endothelin axis by the circadian clock protein Per1. *Life Sci.* S0024-3205(14)00382-8, 2014. PMID: 24721511

D. Research support

ACTIVE:

R01-DK082680-01 Period 9/1/09-8/31/15 PI: 4 calendar months
NIH/NIDDK $0 total direct costs – no cost extension
"An Aldosterone-Endothelin Feedback Mechanism on Sodium Homeostasis"
Major Goal: To understand the interaction between aldosterone and endothelin-1 and the potential role of this interaction as a feedback system on renal sodium transport.
Overlap: None

T32DK007518-25S1 Period: 7/1/85-6/30/13 Mentor 0 calendar months

NIH/NIDDK (Fellow salary only) $ 249,529 direct costs
"Pre and Postdoctoral Training in Nephrology and Hypertension"
Major Goal: The objective of this grant is to provide training of predoctoral and postdoctoral candidates into basic and clinical research related to nephrology with the purpose of providing the necessary training to become independent investigators.

T32 HL083810-01 Period 4/1/07-3/31/12 Mentor
NIH/NHLBI Training Grant recipient A. Welch
"Multidisciplinary Training Program in Hypertension",
Major Goal: 1) To establish a training program for graduate and postdoctoral/clinical fellows in Hypertension Research at the University of Florida.
Overlap: None

VA Merit Review Period 10/1/2012-9/30/2016 PI 4.2 calendar months
Role of H,K-ATPase in the Action of Mineralocorticoids
Major Goal; To determine the role of the HKalpha2-containing H,K-ATPase in salt and electrolyte homeostasis and systemic blood pressure control.
Overlap: None

PREVIOUS:
R01-DK49750 Period 12/1/04-11/30/11 PI 4.2 calendar months
NIH/NIDDK $225,000/yr direct costs (No cost extension 12/1/09-11/30/11)
"H,K-ATPase Function in Potassium Homeostasis"
Major Goal; To identify the role of each H,K-ATPase isoform in Potassium homeostasis, the role of KCNQ1 channels in their regulation, and the phenotype of mice null for HKα1 and HKα2 subunits
Overlap: None

AHA Period 7/1/07-6/30/09 Mentor
Predoctoral fellowship Recipient L. Stow (salary only) $43,540 Total award
"Characterization of Aldosterone-Induced Endothelin-1 in the Kidney"
Major Goals: 1) To characterize Aldosterone's Induction Kinetics of ET-1 in vivo; 2) To characterize Aldosterone's Effect on ET-1 Signaling Machinery; 3) To identify the Mechanism of Aldosterone's Induction of ET-1.

AHA Period 7/1/08 – 6/30/10 Mentor
Postdoctoral fellowship Recipient M. Gumz, Ph.D. (salary only) $96,476 total award
"Role of Per1 in Aldosterone-mediated Regulation of ENaC"
Major Goals: 1) To characterize the induction of Per1 by aldosterone in mIMCD-3 cells; 2) To characterize the role of Per1 in the aldosterone-mediated regulation of Na^+ transport.

VA Period 3/31/87-4/1/04 PI 4 calendar months
Merit Review Award
"Ion Transport in the Collecting Duct" $125,000/yr direct costs
Major Goal: To identify the major H,K-ATPase isoforms in the collecting duct and their regulation by aldosterone.
Overlap: None

R01-DK49750 Period 12/1/92-11/30/04 PI 4.2 calendar months
NIH/NIDDK $166,000/yr direct costs
"H,K-ATPase Function in Potassium Homeostasis"
Major Goal; To identify the mechanism of luminal acidification and potassium transport using transport studies in the isolated perfused tubule.
Overlap: None