BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
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NAME	POSITION TITLE
Vivek Bhalla	Assistant Professor of Medicine
eRA COMMONS USER NAME bhalla	

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

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of California, Berkeley	B.S.	1994	Elec Eng Comp Sci-Bioelectronics
University of California, San Diego	M.D.	1998	Medicine

A. Personal Statement

My current research programs include two components related to pediatric research. I have NIH-funded grants in the areas of: (1) obesity/insulin resistant-mediated salt-sensitive hypertension, which is a growing problem among children and adolescents and (2) the pathogenesis of diabetic kidney disease using models of Type 1 diabetes. I conduct both basic and translational research, and direct a specialty clinic at the interface of diabetes mellitus, hypertension, and kidney disease. I have also served on study sections at the NIH and AHA for my expertise in these areas. I have been committed to these two areas of research for the past several years, and am currently mentoring nephrology fellows, postdoctoral fellows, and undergraduate students in these areas.

B. Positions and Honors

Research and Professional Experience

09/05-12/07	University of California, San Francisco	Adjunct Assistant Professor of Medicine
01/08-	Stanford University	Assistant Professor of Medicine

Board Certifications

2001	American Board of Internal Medicine	Specialty	Internal Medicine #205268
2003	American Board of Internal Medicine	Subspecialty	Nephrology #205268

Other Experience and Professional Memberships

Memberships

2001-Present American Heart Association, Renal Division
2001-Present Renal Physicians Association
2001-Present American Society of Nephrology (Fellow, Investigator Track)
2004-Present American Society of Cell Biology
2006-Present National Kidney Foundation

Manuscript Reviewer (Ad-Hoc)

08/04-Present European Molecular Biology Organization (EMBO) Journal
04/05-Present Journal of the American Society of Nephrology
08/09-Present Pediatric Nephrology
12/09-Present Nephron
12/09-Present Proceedings of the National Academy of Sciences
01/10-Present PPAR Reviews
07/11-Present American Journal of Kidney Diseases
09/11-Present Diabetes
10/12-Present Journal of the American Medical Association

Manuscript Reviewer (Editorial Board)

07/2007-Present American Journal of Physiology, Renal Physiology

05/2010-Present Frontiers in Physiology – Renal and Epithelial Physiology
01/2011-Present Journal of Diabetes Mellitus

Study Sections

07/08 National Institutes of Health, Adhoc Reviewer, ZHL1 CSR-D (O1) 1 - Grand Opportunities in Large Scale DNA Sequencing and Molecular Profiling of Well Phenotyped NHLBI Cohorts

02/10 Food and Health Bureau of the Hong Kong SAR Government, Adhoc Reviewer, Health and Health Services Research Fund

04/11-Current American Heart Association, Molecular Signaling 4, Peer Review Committee

Honors

1992-1994	UC Berkeley	Tau Beta Pi, Engineering Honors Society
1992-1994	UC Berkeley	Eta Kappa Nu, Elec Eng Honors Society
1994	UC Berkeley	Phi Beta Kappa
1994	UC Berkeley	Graduation with Honors
1995	US Dept. HHS	Pre-Clinical Scholarship
2000	UC Los Angeles	Solomon Scholars Resident Research Award
2006	UC San Francisco	Excellence in Small Group Instruction, Nominee
2007	UC San Francisco	Teaching Awardee, Halie T. Debas Academy of Medical Educators
2011	Stanford University	Excellence in Teaching Award, School of Medicine

Invited Presentations (relevant to the current application)

05/07 "Molecular Determinants of Aldosterone-Sensitive Sodium Transport" – Oregon Health Sciences University, Division of Nephrology, Grand Rounds, Portland, OR

07/08 "Regulation of ENaC-Mediated Sodium Transport via Phosphorylation of Nedd4-2", - Epithelial Physiology and Cell Biology, Annual Meeting, Telluride, CO

04/10 "Phosphopeptide Screen Uncovers Novel Nedd4-2 Phosphorylation Sites that Potentiate its Inhibition of the Epithelial Na^+ channel (ENaC)", Featured Speaker, - Experimental Biology, Annual Meeting, Anaheim, CA

08/11 "Novel Method for Isolation and Culture of Murine Principal Cells", - Epithelial Physiology and Cell Biology, Annual Meeting, Telluride, CO

09/11 "Regulation of Ubiquitin Ligase Activity and Phosphorylation by SGK1"- 7th International Symposium on Aldosterone and ENaC/Degenerin Family of Ion Channels: Molecular Mechanisms and Pathophysiology, Quadrennial Meeting, Pacific Grove, CA

09/12 "Guyton's Kidney Factor: Influences of Obesity and Hyperinsulinemia on Epithelial Sodium Transport", - Renal Research Conference, Mount Sinai School of Medicine, NY

C. Selected Peer-Reviewed Publications (in chronological order)

Original articles relevant to the current application

1. **Bhalla V**, Nast CC, Stollenwerk N, Tran S, Barba L, Kamil ES, Danovitch G, Adler SG "Recurrent and De Novo Diabetic Nephropathy in Renal Allografts", *Transplantation.* 2003 Jan 15; 75(1): 66-71. PMID: 12544873

2. **Vivek Bhalla**, Dorothée Daidié, Hongyan Li, Alan C. Pao, Lila P. LaGrange, Jian Wang, Alain Vandewalle, James D. Stockand, Olivier Staub, and David Pearce, "SGK1 regulates ubiquitin ligase Nedd4-2 by inducing interaction with 14-3-3", *Molecular Endocrinology*, 2005 Dec;19(12): 3073-84. PMID: 16099816

3. **Bhalla V**, Oyster NM, Fitch AC, Wijngaarden MA, Neumann D, Schlattner U, Pearce D, Hallows KR, "AMP-activated kinase inhibits the epithelial Na- channel through functional regulation of the ubiquitin ligase Nedd4-2", *Journal of Biological Chemistry*, 2006, Sep 8; 281(36): 26159-69. PMID: 16844684

4. Pao AC, McCormick JA, Li H, Siu J, Govaerts C, **Bhalla V**, Soundararajan R, Pearce D, "The N-terminus of Serum and Glucocorticoid Regulated Kinase 1 Binds to Phosphoinositides and is Essential for Isoform-

Specific Physiologic Functions", *American Journal of Physiology, Renal Physiology,* 2007, Jun; 292(6):F1741-50. PMID: 173562130

5. **Bhalla V*^**, Hallows KR*, Oyster NM, Wijngaarden MA, Lee JK, Li H, Chandran S, Xia X, Huang Z, Chalkley RJ, Burlingame AL, Pearce D, "Phosphopeptide Screen Uncovers JNK1 as a Potentiator of Nedd4-2-Mediated Epithelial Na+ Channel Inhibition", *Journal of Biological Chemistry*, 2010, Jul 9; 285(28): 21671-8. PMID: 20466724
   *- co-first author; ^- corresponding author

6. **Bhalla V**, "In diabetic nephropathy, high doses of vitamin B decrease glomerular filtration rate and increase risk of the composite outcome of a vascular event or all-cause mortality compared with placebo", *Evidenced Based Medicine*, 2011, Feb; 16(1): 14-5. PMID: 21047842

7. Chandran S, Li H, Dong W, Krasinska K, Adams C, Alexandrova L, Chien A, Hallows KR, **Bhalla V,** "Neural Precursor Cell-expressed Developmentally Down-regulated Protein 4-2 (Nedd4-2) Regulation by 14-3-3 Protein Binding at Canonical Serum and Glucocorticoid Kinase 1 (SGK1) Phosphorylation Sites," *Journal of Biological Chemistry,* 2011, 2011 Oct 28; 286(43):37830-40. PMID: 21900244

8. **Vivek Bhalla**, Beinan Zhao, Kristen M.J. Azar, Elsie J. Wang, Sarah Choi, Eric C. Wong, Stephen P. Fortmann, Latha P. Palaniappan, "Racial/Ethnic Differences in the Prevalence of Proteinuric and Non-proteinuric Diabetic Kidney Disease", *Diabetes Care*, 2012, Dec 13, epub ahead of print. PMID: 23238659

9. **Bhalla V**, Velez MG, Chertow GM, "A Transcriptional Blueprint for Human and Murine Diabetic Kidney Disease", *Diabetes*, 2013 Jan; 62(1):31-3. PMID: 23258910

Reviews and book chapters relevant to current application

1. McCormick JA, **Bhalla V**, Pao AC, Pearce D, "SGK1: A Rapid Aldosterone-Induced Regulator of Renal Sodium Reabsorption", *Physiology*, 2005 Apr; 20: 134-9. PMID: 15772302

2. **Bhalla V**, Soundararajan R, Pao AC, Li H, Pearce D, "Disinhibitory Pathways for Control of Sodium Transport: Regulation of ENaC by SGK1 and GILZ", *American Journal of Physiology, Renal Physiology*, 2006, Oct; 291(4): F714-21. PMID: 16720863

3. **Bhalla V**, Hallows KR, "Mechanisms of ENaC Regulation and Clinical Implications", *Journal of the American Society of Nephrology*, 2008, October; 19(10): 1845-54. PMID: 18753254

4. David Pearce, **Vivek Bhalla**, John Funder, John Stokes, "Aldosterone Regulation of Solute Transport", Brenner and Rector's The Kidney, 9th edition, Section 1, Chapter 6, 2011.

5. MG Velez, **Bhalla V**, "The Role of the Immune System in the Pathogenesis of Diabetic Nephropathy", *Journal of Nephrology and Therapeutics S2*, 2012, Mar; S2-007.

Additional publications

1. **Bhalla V**, Grimm PC, Chertow GM, Pao AC, "Melamine Nephrotoxicity- An Emerging Epidemic in the Era of Globalization", *Kidney International*, 2009, Apr; 75 (8): 774-9. PMID: 19212415.

2. Prakash S, Hernandez G, Dujaili I, **Bhalla V**, "Lead poisoning from an Ayurvedic herbal medicine in a patient with chronic kidney disease", *Nature Reviews Nephrology*, 2009, May, 5(5): 297-300. PMID: 19384331.

3. Krishnan E, Lingala B, **Bhalla V, "**Low-level lead exposure and the risk for gout: Results from the NHANES study", *Annals of Internal Medicine*, 2012, Aug 21, 157(4): 233-241. PMID: 22910934.

D. Research Support

Ongoing

DK09156501A1 Bhalla (PI) 09/11-08/16
NIH / NIDDK, Parent Grant Program (R01)
ENaC Transport in Insulin Resistance: Role of Insulin & IGF-I Receptors
Role: Principal Investigator
Goal: This project will address the mechanisms which lead to salt-sensitive hypertension in the insulin resistance syndrome using principal cell-specific knockout mice.

DK09156502S1 Bhalla (PI) 09/12-08/13
Research Supplements to Promote Diversity in Health-Related Research
ENaC Transport in Insulin Resistance: Role of Insulin & IGF-I Receptors
Role: Principal Investigator
Goal: This supplemental funding will be of utmost importance to further the scientific experience of a promising underrepresented minority student as he chooses his career track in medicine and biomedical research.

Bhalla (PI) 10/12-09/13
Translational Research and Applied Medicine (TRAM) Pilot Grant
Validation of Novel Biomarkers for Human Diabetic Kidney Disease
Role: Principal Investigator
Goal: This grant will allow us to validate candidate autoantibodies for their association with kidney disease (albuminuria) in patients with Type 2 diabetes mellitus.

Bhalla (PI) 03/11-03/13 (No-Cost Extension)
Abbott Renal Care, Investigator-Initiated Study
Oxidative/Carbonyl Stress and Vitamin D in Diabetic Nephropathy
Role: Principal Investigator
Goal: This project will address the role of carbonyl stress in the pathophysiology of diabetic nephropathy, and the role of Vitamin D in carbonyl stress.

Pending

None

Completed

Bhalla (PI) 07/11-04/12
NIH / Clinical and Translational Science Award (UL1 RR025744)
Office of Community Health-sponsored substudy
Validation of Biomarkers for Diabetic Nephropathy in a Community-Based Healthcare Setting
Role: Principal Investigator

1DK071648 Bhalla (PI) 09/05-08/12
NIH / NIDDK, Mentored Clinical Scientist Award (K08)
Role of Nedd4-2, SGK1, and 14-3-3 in ENaC Trafficking
Role: Principal Investigator

1DK083613 Bhalla (PI) 07/10-06/12
NIH / NIDDK, Small Grant Program (R03)
Molecular Mechanisms of Distal Sodium Transport in Insulin Resistance
Role: Principal Investigator

Bhalla (PI) 09/10-08/11
American Society of Nephrology – Carl W. Gottschalk Research Grant
Molecular Mechanisms of Salt-Sensitive Hypertension in Insulin Resistance
The funds for the second year of the award were declined due to overlap with our recently awarded R01.

Bhalla (PI)

NIH / AMDCC Pilot & Feasibility Program 06/10-12/12 (No-Cost Extension)
Reduction of Carbonyl Stress for the Prevention of Diabetic Kidney Disease
Role: Principal Investigator
Goal: For this project we will explore the role of a detoxifying enzyme, aldehyde dehydrogenase 2, in the pathogenesis of diabetic kidney disease using a novel pharmacologic probe. We will further address the role of carbonyl stress in diabetic complications in general.