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| BIOGRAPHICAL SKETCH Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2. Follow this format for each person.  **DO NOT EXCEED FOUR PAGES.** | | | | |
|  | | | | |
| NAME  Kumar Sharma | | POSITION TITLE  Professor of Medicine | | |
| eRA COMMONS USER NAME (credential, e.g., agency login)  Kumar.sharma | |
| 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 |
| Boston University, Boston, MA | BA | | 1981 | Biology |
| Albert Einstein College of Medicine, Bx, NY | MD | | 1985 | Medicine |
| Temple University Hospital, Philadelphia, PA |  | | 1986 | Internship, Int Med |
| Bronx Municipal Hospital, Bronx, NY |  | | 1986-89 | Residency, Int Med |
| University of Pennsylvania, Philadelphia, PA |  | | 1990-94 | Fellowship, Nephrology |

**A. Personal Statement**

The study of organ dysfunction with novel techniques and integrative biology has been our approach to tackle major public health concerns. I have had a dedicated and consistent translational approach for diabetic complications for the past 15 years and have expertise in developing phenotype analysis using imaging, molecular and biochemical methods, genomics, microarray, proteomics and metabolomics. I have had two consecutive cycles of funding on the U01 Animal Models of Diabetic Complications Consortium and have developed the standards for many of the biochemical phenotyping methods. Our group has had numerous studies linking clinical phenotypes of patients with genomics and biomarkers. Recent studies have employed systems biology approaches to understand novel mechanisms related to obesity-related complications, diabetic kidney disease and novel therapies. I have led translational research for nephrology as Chair of the International Society of Nephrology Nexus Symposium since 2007. Our work has had a major impact in the field with respect to novel anti-fibrotic therapies for chronic kidney disease and we have recently completed the multi-center, interventional NIH funded clinical trial with an oral anti-fibrotic agent. My major focus in the past 5 years has been to develop novel biomarkers for chronic kidney disease and diabetic complications. In particular, recent metabolomic studies in humans have led to novel insights into the pathogenesis of diabetic complications. Recent funding from the Juvenile Diabetes Research Foundation and the NIH DP3 award have supported Dr. Sharma’s initiatives to apply metabolomics for clinical conditions. At UCSD, I lead the coordination and development of the Institute for Metabolomic Medicine. The Institute has brought together many of the leading groups at UCSD to coalesce resources and develop applications for widespread use of metabolomics for translational and clinical applications. I will be the Principal Investigator for the proposed clinical trial to evaluate pirfenidone for a dose-ranging tolerability and efficacy study.

**B. Positions and Honors**

**Positions**

1986 - 1988 Internship and Residency- Internal Medicine-

Bronx Municipal Hospital Center, Bronx, NY

1988-1989 Chief Resident

Bronx Municipal Hospital Center, Bronx, NY

1989 - 1990 Instructor in Internal Medicine

Cornell Medical Practice- New York Hospital, NY

1990 - 1994 Fellowship in Nephrology- Univ. of Pennsylvania School of Medicine, Philadelphia, PA

1994 - 1999 Assistant Professor of Medicine- Division of Nephrology

Thomas Jefferson University, Philadelphia, PA

1995-present Director, Cell and Molecular Biology of Kidney Diseases, Nephrology, Thomas Jefferson University

1996-present Director, Center for Diabetic Kidney Disease, Thomas Jefferson University

1999-2004 Associate Professor of Medicine, Thomas Jefferson University

2004-2007 Professor of Medicine, Thomas Jefferson University

2006-2007 Endowed Chaired Professorship of Medicine, Thomas Jefferson University

2006-2007 Director of Center for Novel Therapies for Kidney Disease

2007-present Professor of Medicine, University of California at San Diego/VA Medical Center

2007-present Director, Center for Renal Translational Medicine, UCSD/VA

2012-present Director, Institute of Metabolomic Medicine, UCSD

**Other Experience and Professional Memberships**

American Diabetes Association, President of ADA Board, San Diego 2009-10

Member of ADA Research Council 2010-2013

National Kidney Foundation,

American Society of Nephrology

International Society of Nephrology

**Honors**

1977 - 1981 Dean’s Honor List, Boston University

1981 BA in Biology *with Distinction*, Boston University

1992 - 1994 National Research Service Award- National Institutes of Health

1995 - 1996 Young Investigator Grant- National Kidney Foundation

1996 - 2001 Clinical Investigator Award- National Institutes of Health

1997 – 2000 American Diabetes Association Research Award

1. Merck Young Investigator Award

2003-present Member of Study Section General Medicine B, Pathobiology of Kidney Disease 2002-2006

2002 Editorial board-Diabetes, AJP-Renal

2003 Inaugural Fellow of the American Heart Association, FAHA

2002- American Society of Nephrology Chronic Kidney Disease Advisory Group (2002-2005)

2005- Editorial Board, Journal of the American Society of Nephrology, Journal Clinical Investigation

2007- Associate Editor- AJP-Renal

2008- Chair, International Society of Nephrology Nexus Symposia Committee

2009- Outstanding Foreign Investigator Award in Diabetes Complications, Japan Society of Diabetes Complications

C. Selected Peer-reviewed Publications (15 out of total of 104)

**Most relevant to the current application**

1. Susztak, K., Bottinger, E.P, Novetsky, A., Liang, D., Zhu, Y, Ciccone, E., Wu, D., Dunn, S., McCue, P., **Sharma, K.** Molecular profiling of diabetic mouse kidney reveals novel genes linked to glomerular disease. ***Diabetes*,** 53:784-794 2004**.**

2. Ewen, K., Ziyadeh, F, **Sharma, K**., Spielman, R. Candidate SNP analysis in Diabetic Nephropathy. ***Diabetes,*** 54: 3305-3318, 2005.

3. **Sharma, K**, Lee, S-H, Han, S, Lee, S, Francos, B, McCue, P, Shaw, M.A., RamachandraRao, S, Two dimensional fluorescence difference gel electrophoresis (DIGE) analysis of the urine proteome in human diabetic nephropathy. ***Proteomics* 5:2648 – 2655,** 2005.

4. **Sharma, K.** RamachandraRao, S., Qiu, G., Kataoka Usui, H, Zhu, Y., Dunn, S.R., Ouedraogo, R., Hough. K., McCue, P., Chan, L., Falkner, B., Goldstein, B. Adiponectin regulates albuminuria and podocyte function in mice. ***Journal of Clinical Investigation***, 118(5): 1645-1656, 2008.

5. **Sharma, K,** Ix, J.H., Mathew, A.V., Cho, M, Pflueger, A., Dunn, S.R., Francos, B., Sharma, S, Falkner, B., McGowan, T., Donohue, M., RamachandraRao, S., Xu, R., Fervenza, F., Kopp, J.B. Pirfenidone for Diabetic Nephropathy: A Randomized Placebo Controlled Clinical Study. ***Journal of the American Society of Nephrology*** 22:1144-1151, 2011.

**Additional recent publication of importance to the field (in chronological order)**

1. Ziyadeh FN., Hoffman BB., Han DC., Iglesias-De La Cruz MC., Hong SW., Isono M., Chen S., McGowan TA., **Sharma K.** Long-term prevention of renal insufficiency, excess matrix gene expression, and glomerular mesangial matrix expansion by treatment with monoclonal anti-transforming growth factor-beta antibody in db/db diabetic mice. ***Proceedings of the National Academy of Sciences-USA****.* 97:8015-8020, 2000**.**

2. Madesh, M., Hawkins, B., Milovanova, T., Bhanumathy, C., Joseph, S., RamachandraRao, S., **Sharma, K**., Kurosaki, T., Fisher, A. Selective role for superoxide in InsP3 receptor-mediated mitochondrial dysfunction and endothelial apoptosis. ***Journal of Cell Biology***, 170:1079, 2005

3. Zhu, Y., Casado, M., Vaulont, S., **Sharma, K**. Role of Upstream Stimulatory Factors in Regulation of Renal Transforming Growth Factor-b1. ***Diabetes*** 54: 1976-1984, 2005.

4. Breyer, M., Bottinger, E.B., Brosiun, F., Coffman, T., Harris, R., Heilig, C., **Sharma, K.** Mouse models of diabetic nephropathy. ***Journal of the American Society of Nephrology*,** 16(1):27-45, 2005.

5. [Pearson KJ](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Pearson%20KJ%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus), [Baur JA](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Baur%20JA%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus), [Lewis KN](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Lewis%20KN%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus), [Peshkin L](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Peshkin%20L%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_RVAbstractPlus), [Price 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Resveratrol Delays Age-Related Deterioration and Mimics Transcriptional Aspects of Dietary Restriction without Extending Life Span. ***Cell Metabolism,*** 8:157-168, 2008

6. Huan Y, DeLoach S, Daskalakis C, Dunn SR, **Sharma K**, Falkner B.[Regulation of transforming growth factor-beta1 by insulin in prediabetic African Americans.](http://www.ncbi.nlm.nih.gov/pubmed/20393450) Kidney Int. 2010 Aug;78(3):318-24.

7. Ix JH, **Sharma K.** [Mechanisms Linking Obesity, Chronic Kidney Disease, and Fatty Liver Disease: The Roles of Fetuin-A, Adiponectin, and AMPK.](http://www.ncbi.nlm.nih.gov/pubmed/20150538?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=6) ***J Am Soc Nephrol*** 2010 Mar;21(3):406-12.

8. Declèves AE, **Sharma K**. [New pharmacological treatments for improving renal outcomes in diabetes.](http://www.ncbi.nlm.nih.gov/pubmed/20440278) Nat Rev Nephrol. 2010 Jun;6(6):371-80.

9. Sanchez AP, Zhao J, You YH, Diamond-Stanic M, **Sharma K**. [Role of the USF1 Transcription Factor in Diabetic Kidney Disease.](http://www.ncbi.nlm.nih.gov/pubmed/21543418) ***Am J Physiol Renal Physiol.*** 2011 May 4. [Epub ahead of print].

10. Decleves, A-E., Mathew, A.V., Cunard, R., **Sharma, K.** AMPK Mediates the Initiation of High Fat Induced Kidney Disease. ***Journal of the American Society of Nephrology*** 2011 Oct;22(10):1846-55.

**D. Research Support**

**Ongoing Research Support**

NIH/NIDDK 1DP3DK094352 (PI: Sharma, Kumar) 09/01/2011-08/30/2015

*Novel Paradigms in Diabetic Complications*

Major goal: Apply a systems biology approach to the analysis of cellular, mouse, and human models to characterize the chain of events that lead to the complications of excess energy. Use of urine metabolomics for patients with diabetic complications will evaluate prognostic value of metabolomic signature.

5101BX000277-02 (Sharma, Kumar) 10/01/2010 - 9/30/2013

VA San Diego Healthcare System

*Adiponectin and Podocytes* Study effect of adiponectin receptors and podocytes in models of diabetes and obesity

NIH/NIDDK 2R44 DK083142-02A1 (Rychak, Joshua) 07/01/11-06/30/13

Ultrasound Based Treatment of Kidney Diseases

Dr. Sharma is the PI of the academic sub-contract to develop mouse models of diabetic kidney disease and optimize ultrasound imaging for targeting novel treatments.

NIH/NIDDK 7 U01 DK076133-02 (PI:Sharma, Kumar) 09/01/2007 - 06/30/2012

*Adiponectin and Nox 4 in Diabetic Kidney Disease* Development of adiponectin KO and Nox4 transgenic mice for diabetic complications. (in no cost extension)

Bristol Myers Squibb (Sharma, Kumar and Vallon, Volker- coPIs) 7/1/10-6/30/12

*SGLT and diabetic kidney disease.* Evaluate the role of SGLT in cell culture and mouse models of kidney disease.

Johnson and Johnson, Inc. (PI: Sharma, K) 7/1/11-6/30/12

*Role of TNF-a in metabolic kidney disease*. Evaluate the role of novel TNF-a antagonists in models of kidney disease using functional, structural and metabolomic analysis in mouse models.

**Completed in last 3 years**

JDRF Academic R & D (PI: Sharma, Kumar) 12/01/08-11/30/2011

*Urine exosome biomarkers in anti-fibrotic trials for diabetic nephropathy* Application to study urine metabolomics and exosomes in clinical anti-fibrotic trials

JDRF Innovative Grant (PI: Sharma, Kumar) 1/01/11-12/31/2011

*Urine Metabolomics for Diabetic Kidney Disease: Bedside to Bench* Application to study urine metabolomics in natural history of diabetic kidney disease

NIH/NIDDK 1P30 DK079337-01A1 (PI: Agarwal, Co-Director of Core A, Sharma) 07/01/2008-8/30/2011

*UAB-UCSD O’Brien Core Center for Acute Kidney Injury Research* Co-director of Core A for biomarker analysis and repository for acute kidney injury projects

ADA 7-07-RA-145 (PI:Sharma, Kumar) 07/01/2007 - 06/30/2010

*Role of USF1 in Diabetic Induced Renal and Vascular Disease*  Study role of the transcription factor USF1 in diabetic vascular complications in a mouse model

NIH/NIDDK 7 R01 DK053867-07 (PI:Sharma, Kumar) 05/01/2006 - 04/30/2010

*TGF-b signaling in diabetic kidney disease* Study downstream signaling pathways activated by TGF-b in diabetic kidney disease.