

BIOGRAPHICAL SKETCH

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|--|---|---------|-------------------|
| NAME Jeffrey R. Schelling | POSITION TITLE Professor of Medicine | | |
| eRA COMMONS USER NAME jschelling | | | |
| 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 |
| Northwestern University, Evanston, IL | B.A. | 1981 | Biology |
| Case Western Reserve University, Cleveland, OH | M.D. | 1985 | Medicine |
| University Hospitals, V.A. Med Ctr, Cleveland, OH | | 1988 | Internal Medicine |
| University of Colorado, Denver, CO | | 1992 | Nephrology |

A. Personal statement. I have been an NIH-funded nephrology investigator for over 20 years, with a persistent focus on mechanisms of chronic kidney disease progression. My research programs utilize in vitro molecular and cellular methods, animal models and human studies to investigate glomerular and tubulointerstitial pathophysiology.

B. Positions and Honors

1988 C.C.J. Carpenter award, outstanding internal medicine resident
1988 ABIM diplomate in Internal Medicine
1990 ABIM diplomate in Nephrology
1992-94 Senior Instructor, Case Western Reserve University School of Medicine, Cleveland, OH
1994-01 Assistant Professor, Case Western Reserve University School of Medicine, Cleveland, OH
1996-02 Ad hoc reviewer, V.A. Merit Review Study Section
1999-01 Established Investigator, American Heart Association
2000-03 Member, National Peer Review Committee, Cardio-Renal Section, American Heart Association
2001 Reviewer, NIH Study Section, Animal Models of Diabetic Complications Consortium (AMDCC)
2001 Award of Tenure, Case Western Reserve University
2001-08 Associate Professor, Case Western Reserve University School of Medicine, Cleveland, OH
2003- Director, Division of Nephrology, MetroHealth System, CWRU School of Medicine, Cleveland, OH
2003-07 Ad hoc reviewer, Juvenile Diabetes Research Foundation
2004-06 Ad hoc reviewer, NIH Study Sections ZRG1 HOP-Q and ZRG1 RUS-B
2005-07 Member, National Kidney Foundation Grant Review Committee
2006 Ad hoc reviewer, NIH Study Section, Genetic Association Information Network (GAIN) RFA
2006-08 Ad hoc reviewer, National Science Foundation
2007- Editorial Board, *Am J Physiol Renal Physiol*
2008- Professor, Case Western Reserve University School of Medicine, Cleveland, OH
2009 Ad hoc reviewer, NIH Special Emphasis Panels ZDK1 GRB-S (M3), ZDK1 GRB-R (M3) 1, ZRG1-DKUS-A 58, ZDK1 GRB-W 02 1, and ZDK1 GRB-9 (J2)
2009 Ad hoc reviewer, Nephcure Foundation study section
2010 Ad hoc reviewer, NIH Special Emphasis Panel ZDK1 GRB-G M4 1, NIDDK Ancillary R01 Application Review
2011 Program Committee, American Society of Nephrology annual meeting, Philadelphia, PA

C. Publications (selected from a total of 87 publications)

Schelling JR, Nkemere N, Kopp JB, Cleveland RP. Fas-dependent fratricidal apoptosis is a mechanism of tubular epithelial cell deletion in chronic renal failure. *Lab Invest* 78:813-824, 1998.
Schelling JR, Cleveland RP. Involvement of Fas-dependent apoptosis in renal tubular epithelial cell deletion in chronic renal failure. *Kidney Int*, 56:1313-1316, 1999.
Khan S, Cleveland RP, Koch C, **Schelling JR**. Hypoxia induces renal tubular epithelial cell apoptosis in chronic renal disease. *Lab Invest* 79:1089-1099, 1999.

- Khan S, Konieczkowski M, Koepke A, Jarad G, Schlessman K, Wang B, **Schelling JR**. Apoptosis and JNK activation are differentially regulated by Fas expression level in renal tubular epithelial cells. *Kidney Int* 60:65-76, 2001.
- Jarad G, Wang B, Khan S, DeVore J, Miao H, Wu KL, Nishimura SL, Wible BA, Konieczkowski M, Sedor JR, **Schelling JR**. Fas activation induces renal tubular epithelial cell $\beta 8$ integrin expression and function in the absence of apoptosis. *J Biol Chem* 277:47826-47833, 2002.
- Wu KL, Khan S, Lakhe-Reddy S, Wang L, Jarad G, Miller RT, Konieczkowski M, Brown AM, Sedor JR, **Schelling JR**. Renal tubular epithelial cell apoptosis is associated with caspase cleavage of the NHE1 Na^+/H^+ exchanger. *Am J Physiol* 284:F829-F839, 2003.
- Jarad G, Lakhe-Reddy S, Blatnick J, Koepke M, Khan S, El-Meanawy MA, Sedor JR, **Schelling JR**. Renal phenotype is exacerbated in *Os* and *lpr* double mutant mice. *Kidney Int* 66:1029-1035, 2004.
- Wu KL, S Khan, Lakhe-Reddy S, Jarad G, Obejero-Paz CA, Mukherjee A, Konieczkowski M, Sedor JR, **Schelling JR**. The NHE1 Na^+/H^+ exchanger recruits ERM proteins to regulate Akt-dependent cell survival. *J Biol Chem* 279:26280-26286, 2004.
- Constantiner M, Sehgal AR, Humbert L, Arce L, Constantiner D, Sedor JR, **Schelling JR**. A dipstick protein and specific gravity algorithm predicts pathologic proteinuria. *Am J Kidney Dis* 45:833-841, 2005.
- O'Connor AS, **Schelling JR**. Diabetes and the kidney. *Am J Kidney Dis* 46:766-773, 2005.
- Lakhe-Reddy S, Khan S, Konieczkowski M, Jarad G, Wu KL, Reichardt LF, Takai Y, Bruggeman LA, Wang B, Sedor JR, **Schelling JR**. $\beta 8$ integrin binds RhoGDI-1 and activates Rac1 to inhibit mesangial cell myofibroblast differentiation. *J Biol Chem* 281:19688-19699, 2006.
- Khan S, Wu KL, Abu Jawdeh BG, Sedor JR, **Schelling JR**. The NHE1 Na^+/H^+ exchanger regulates cell survival by activating and targeting ezrin to specific plasma membrane domains. *Cell Mol Biol* 52:115-121, 2006.
- Kopp JB, Smith MW, Johnson RC, Freedman BI, Bowden DW, Oleksyk T, McKenzie LM, Ahuja TS, Cho ME, Dart RA, Kimmel PL, Korbet SM, Michael DM, Mokrzycki MH, **Schelling JR**, Simon E, Trachtman H, Vlahou D, Kajiyama H, Nelson GW, Winkler CW. MYH9 is a major-effect risk gene for focal segmental glomerulosclerosis. *Nat Genet* 40:1175-1184, 2008.
- Kao WHL, Klag MJ, Meoni LA, Reich D, Bertier-Schaad Y, Li M, Coresh J, Patterson N, Powe NR, Fink NE, Sadler J, Weir M, Adler S, Kamp K, Kohn OF, Leehey DJ, Nicholas S, Pahl M, **Schelling JR**, Sedor JR, Thornley-Brown D, Winkler C, Smith MW, Parekh RS. MYH9 is associated with nondiabetic end-stage renal disease in African Americans. *Nat Genet* 40:1185-1192, 2008.
- Bleyer AJ, Sedor JR, Freedman BI, Iyengar SK, O'Brien A, Russell G, **Schelling JR**. Risk factors for development and progression of diabetic kidney disease and treatment patterns among diabetic siblings of diabetic patients with kidney failure treated by dialysis. *Am J Kidney Dis* 51:29-37, 2008.
- Schelling JR**, Abboud HE, Nicholas SB, Pahl MV, Sedor JR, et al. Genome-wide scans for estimated GFR in multi-ethnic diabetic populations: The Family Investigation of Diabetes and Nephropathy. *Diabetes* 57:235-243, 2008.
- Schelling JR**, Abu Jawdeh BG. Regulation of cell survival by Na^+/H^+ exchanger-1 (NHE1). *Am J Physiol Renal Physiol* 295:F625-F632, 2008.
- Schelling JR**. Tissue transglutaminase inhibition as treatment for diabetic glomerulosclerosis: It's good to be glueless. *Kidney Int* 76:363-365, 2009.
- Khan S, Lakhe-Reddy S, McCarty JH, Sorenson CM, Sheibani N, Kim JH, Reichardt LF, Wang B, Sedor JR, **Schelling JR**. Mesangial cell $\alpha v\beta 8$ integrin provides glomerular endothelial cell cytoprotection by sequestering TGF- β and regulating PECAM-1. *Am J Pathol* 178:609-620, 2011.
- Abu Jawdeh BG, Khan S, Goel M, Babcock G, Lock JT, Lakhe-Reddy S, DeCaro G, Yadav SP, Schilling WP, Ficker E, **Schelling JR**. Phosphoinositide binding differentially regulates NHE1 Na^+/H^+ exchanger-dependent proximal tubule cell survival. *J Biol Chem*, in revision.

D. Research Support

Ongoing

R01 DK067528

8/1/05 – 7/31/11

Principal Investigator

NIDDK

Mechanisms of tubular atrophy in renal disease

The goal of this grant is to determine the role of the NHE1 Na^+/H^+ exchanger as a survival factor and target of apoptosis in the pathogenesis of tubular atrophy.

R01 DK072348 7/1/08 – 4/30/13 Principal Investigator
NIDDK
Mechanisms of glomerular disease progression
The goal of this grant is to characterize the role of the β 8 integrin in mesangial cell function.

DK061021 (Rahman) 7/1/09 – 4/30/13 Co-Investigator
NIDDK
Chronic renal insufficiency cohort (CRIC) study
The goal is to determine longitudinal renal and cardiovascular outcomes in patients with chronic kidney disease.

2T32 DK07470 (Sedor) 7/1/03 – 6/30/14 Mentor
NIDDK
CWRU Training Grant
The goal of this grant is to train post-doctoral nephrology fellows for careers in biomedical research.

Completed

U01 DK57329 (Sedor) 9/30/99 – 8/31/08 Co-Investigator
NIH/NIDDK
Genetic regulation of renal disease progression
The goal of this grant is to participate in a consortium to identify diabetic nephropathy genes by whole genome scan.

R01 DK59997 9/3/02 – 5/31/08 Principal Investigator
NIH/NIDDK
Renal disease progression in African Americans
The goal of this grant is to determine whether African Americans are at increased genetic risk for development of progressive diabetic nephropathy.

R01 DK064719 (Sedor) 9/1/03 – 6/30/09 Co-Investigator
NIDDK
Mechanisms of glomerular scarring
The goal of this grant is to characterize the role of WT1-interacting protein (WTIP) in glomerular disease pathophysiology.

1-07-CR-56 1/1/07 – 12/31/09 Principal Investigator
American Diabetes Association
Regulation of diabetic nephropathy progression
The goal of this grant is to enroll new patients and maintain the longitudinal cohort and phenotyping for future genetic studies.

DDRI Challenge grant (Sedor) 1/1/08 – 12/31/09 Co-Investigator
Diabetes Association of Greater Cleveland
Mapping diabetic nephropathy genes
The goal is to screen SNPs from two candidate genes for association with diabetic nephropathy.

Fellowship grant 0825593D (Abu Jawdeh) 7/1/08 – 6/30/10 Sponsor
American Heart Association
Mechanisms of divergent NHE1 function in renal tubule versus cardiac myocyte cells
The goal of this grant is to establish cell-specific differences in NHE1 regulation of cell death pathways.