Year-in-Review

As the year wraps up, everyone at KidneyCure wants to thank you for your continued support. In 2022 we established the KidneyCure Diversity, Equity, Inclusion, and Justice Research Scholar Grant with a donation from Otsuka and Visterra, launched the Cele Fogarty Travel Support Program for Patients (“Cele’s Champions”), expanded the Kidney Week Endowed Lecture Program, and awarded approximately $3 million to 23 kidney investigators through our research grant programs—none of which would have been possible without you!

Wishing you and yours a happy and safe holiday season.

Grant Recipient Video: Kana N. Miyata, MD

Kana N. Miyata, MD, an assistant professor in the Department of Internal Medicine, Division of Nephrology, at Saint Louis University School of Medicine, received a 2019 Ben J. Lipps Research Fellowship Grant. Hear about her work in diabetic kidney diseases, her hope that the next generation sees “kidney disease end completely,” and how receiving a KidneyCure grant came at a critical time to ensure her research could continue.

Grant Recipients at Work

Current and former KidneyCure grant recipients are working across the research spectrum to advance our understanding and treatment of kidney diseases. Find highlights of recent publications, press, etc. as submitted by former KidneyCure grant recipients.

If you have any questions, please contact us at kidneycure@asn-online.org or 202-640-4660.
Grant Recipients at Work

Highlights of recent works and publications as submitted by current and former KidneyCure grant recipients. Grant award year is indicated in parentheses.

Jeannine M. Basta, PhD (2022)
- Press:
  - *Kidney Translational Research Center Focuses on Development of Kidney Atlas*
  - *Pediatric Center of Excellence in Nephrology established with NIH funding*

Ulf H. Beier, MD, DrMed (2017)
- *Thermogenic T cells: a cell therapy for obesity?*

Fabian Bock, MD, PhD (2021)
- *Kidney collecting duct cells make vasopressin in response to NaCl induced hypertonicity*
- *Reversal of the renal hyperglycemic memory in diabetic kidney disease by targeting sustained tubular p21 expression*

Subhashini Bolisetty, PhD (2019)
- *Functional consequence of myeloid ferritin heavy chain on acute and chronic effects of rhabdomyolysis-induced kidney injury*

Dorin-Bogdan Borza, PhD (2003)
- *The Alternative Pathway Is Necessary and Sufficient for Complement Activation by Anti-THSD7A Autoantibodies, Which Are Predominantly IgG4 in Membranous Nephropathy*
- *Endopeptidase Therapy for Anti-Glomerular Basement Membrane Disease: Beware of Anti-Hinge Antibodies!*
- *Editorial: Collagen IV nephropathies: Alport syndrome and beyond*

Benjamin Charles Bowe, III, PhD, MPH (2019)
- *Acute and postacute sequelae associated with SARS-CoV-2 reinfection*

Ying Maggie Chen, MD, PhD, FASN (2013)
- *Targeting endoplasmic reticulum for novel therapeutics and monitoring in acute kidney injury*
- *Blocking CHOP-dependent TXNIP shuttling to mitochondria attenuates albuminuria and mitigates kidney injury in nephrotic syndrome*

Wei Chen, MD, MS, FASN (2017)
- *Outcomes of PD for AKI Treatment During COVID-19 in New York City: A Multicenter Study*
- *Associations of Dysnatremia with COVID-19 status and Mortality*

Emilie Cornec-Le Gall, MD, PhD (2015)
• **Monoallelic pathogenic ALG5 variants cause atypical polycystic kidney disease and interstitial fibrosis**

Michelle Denburg, MD (2012)
- **Long-term kidney and cardiovascular complications in pediatric cancer survivors**
- **Skeletal Outcomes in Children and Young Adults with Glomerular Disease**
- **Immunosuppression Exposure and Risk of Infection-Related Acute Care Events in Patients with Glomerular Disease: An Observational Cohort Study**

Michael David Donnan, MD, FASN (2020)
- **Formation of the glomerular microvasculature is regulated by VEGFR-3**

Stuart E. Dryer, PhD, FASN (2011)
- **TRPC6 Inactivation Reduces Albuminuria Induced by Protein Overload in Sprague Dawley Rats**
- **Ion channels and channelopathies in glomeruli**
- **Paraoxonase 2 (PON2) Deficiency Reproduces Lipid Alterations of Diabetic and Inflammatory Glomerular Disease and Affects TRPC6 Signaling**

Jacqueline M. Emathinger (2022)
- **Soluble ACE2 is Filtered into the Urine**

Samira S. Farouk, MD, MS, FASN (2020)
- **Acute Kidney Injury in a Patient with a Kidney Transplant and Posttransplant Lymphoproliferative Disorder: A Quiz**
- **Ensuring health equity for sexual and/or gender minority individuals**
- **A Chronic Kidney Disease Diagnosis: Now What?** (Podcast)

Eman Y. Gohar, MS, PhD (2022)
- **Publications:**
  - G protein-coupled estrogen receptor 1 contributes to cisplatin-induced acute kidney injury
  - Aromatase inhibition elevates blood pressure and markers of renal injury in female rats
- **Press:**
  - APSselect

Michael L. Granda, MD, MS (2022)
- **Tubular Secretion and Estimated GFR Decline in the Jackson Heart Study**
- **Metabolomic Profiling Identifies New Endogenous Markers of Tubular Secretory Clearance**

Susan B. Gurley, MD, PhD (2009)
- **Soluble ACE2 is Filtered into the Urine**

Irma Husain, MD (2021)
- **Publication:**
  - Blocking CCL8-CCR8–Mediated Early Allograft Inflammation Improves Kidney Transplant Function
- **Press:**
  - ANIO GP Kaushal Annual Outstanding Trainee Award 2022
Nishank Jain, MBBS, MPH, FASN (2018)
- Platelet-Dependent Inflammatory Dysregulation in Patients with stages 4-5 Chronic Kidney Disease- A Mechanistic Clinical Study
- Screening for Cardiovascular Disease in CKD: PRO

Eirini Kefalogianni, PhD (2021)
- TNF or EGFR inhibition equally block AKI-to-CKD transition: opportunities for etanercept treatment

Abhilash Koratala, MD, FASN (2022)
- Diagnosis of Fluid Overload: From Conventional to Contemporary Concepts
- Incorporating Training in POCUS in Nephrology Fellowship Curriculum
- Point of care Ultrasound in Cirrhosis-associated Acute Kidney Injury: Beyond Inferior Vena Cava

Ronak Lakhia, MD (2021)
- Enhancer and super-enhancer landscape in polycystic kidney disease

Seolhyun Lee, MD (2020)
- Improving Solute Clearances by Hemodialysis
- Removal of Uremic Solute by Activated Carbon

Karel F. Liem, Jr., MD, PhD (2015)
- A pathogenic variant in TULP3 causes renal and hepatic fibrocystic disease

Kenneth Lim, MD, PhD, FASN (2022)
- FGF23 and Cardiovascular Structure and Function in Advanced Chronic Kidney Disease
- Initiation of Dialysis Is Associated with Impaired Cardiovascular Functional Capacity
- Myocardial Cytoskeletal Adaptations in Advanced Kidney Disease

Eugene Lin, MD, MS, FASN (2021)
- Publications:
  - Association Between Nephrologist Ownership of Dialysis Facilities and Clinical Outcomes
  - Association Between Preoperative Hemodialysis Timing and Postoperative Mortality in Patients with End-stage Kidney Disease
  - Medicare Advantage Plans Pay Large Markups to Consolidated Dialysis Organizations
- Press:
  - New Dialysis Studies Inform Delivery of Care, Ways to Improve Patient Outcomes
  - Hidden Physician Financial Conflicts of Interest in Dialysis
  - Largest Medicare Advantage Plans Pay Large Markups for Dialysis, Could Increase Out-of-Pocket Spending

Jamie S. Lin, MD, FASN (2017)
- Tertiary lymphoid structure signatures are associated with immune checkpoint inhibitor related acute interstitial nephritis
• Urinary T cells are detected in patients with immune checkpoint inhibitor-associated immune nephritis that are clonotypically identical to kidney T cell infiltrates

• Case Report: Successful treatment of late-onset immune checkpoint inhibitor-associated membranous nephropathy in a patient with advanced renal cell carcinoma

Omar H. Maarouf, MD (2013)

• Urinary Neutrophil Gelatinase–Associated Lipocalin Predicts Intensive Care Unit Admission Diagnosis: A Prospective Cohort Study

• Hyponatremia

• A Critical Review of Medication Adherence in Hypertension: Barriers and Facilitators Clinicians Should Consider

Amar J. Majmundar, MD, PhD (2020)

• Activation of 2-oxoglutarate receptor 1 (OXGR1) by α-ketoglutarate (αKG) does not detectably stimulate Pendrin-mediated anion exchange in Xenopus oocytes

• Genetic Variants in ARHGEF6 Cause Congenital Anomalies of the Kidneys and Urinary Tract in Humans, Mice, and Frogs

Tanecia Mitchell, PhD (2021)

• Publication:
  o Novel Translational Approaches to Study Kidney Disease

• Press:
  o Mitchell awarded $2.7 million R01 grant for kidney stone disease research

Alla Mitrofanova, PhD (2021)

• Activation of Stimulator of IFN Genes (STING) Causes Proteinuria and Contributes to Glomerular Diseases

• Mitochondrial Contribution to Inflammation in Diabetic Kidney Disease

• Benefit of B7-1 staining and abatacept for treatment-resistant post-transplant focal segmental glomerulosclerosis in a predominantly pediatric cohort: time for a reappraisal

Kana N. Miyata, MD (2019)

• Dual therapy with an angiotensin receptor blocker and a JAK1/2 inhibitor attenuates dialysate-induced angiogenesis and preserves peritoneal membrane structure and function in an experimental CKD rat model

• Factitious Hypobicarbonatemia in a Patient with Hypertriglyceridemia

Naoka Murakami, MD, PhD, FASN (2019)

• Outcomes of Kidney Transplantation in Patients with Myeloma and Amyloidosis in the US

• Afucosylation of HLA-specific IgG1 as a potential predictor of antibody pathogenicity in kidney transplantation

• Therapeutic Advances in COVID-19

Javier A. Neyra, MD, MS, FASN (2014)

• Prediction of Mortality and Major Adverse Kidney Events in Critically Ill Patients With Acute Kidney Injury

Ester Oh, PhD (2022)
Sex hormones and the risk of cardiovascular disease and mortality in male and female patients with chronic kidney disease: A systematic review and meta-analysis

Rulan S. Parekh, MD, MS, FASN (2000)
- Longitudinal changes in Cardiac Structure and Function in Pediatric Kidney Transplant Recipients
- Effect of Wearing a Face Mask on Hand-to-Face Contact by Children in a Simulated School Environment: The Back-to-School COVID-19 Simulation Randomized Clinical Trial
- Family functioning and quality of life among children with nephrotic syndrome during the first pandemic wave

Yu Leng Phua, PhD (2015)
- Publication:
  - Persistent DNA damage underlies tubular cell polyploidization and progression to chronic kidney disease in kidneys deficient in the DNA repair protein FAN1
- Press:
  - Polyploid tubular cells and chronic kidney disease
  - UPMC Children’s Nephrology Research Team Uncovers Roles of the DNA Repair Protein FAN1 in Kidney Tubular Repair and Regeneration

Sian Piret, PhD (2020)
- Transcriptional regulation of proximal tubular metabolism in acute kidney injury

Felix Poppelaars, MD, PhD (2021)
- Factor H related proteins modulate complement activation on kidney cells

Nabin Poudel, PhD (2019)
- Sphingosine 1-phosphate signaling in perivascular cells enhances inflammation and fibrosis in the kidney

Reena Rao, PhD (2007)
- Publication:
  - Myofibroblast depletion reduces kidney cyst growth and fibrosis in autosomal dominant polycystic kidney disease
- Press:
  - Microenvironment Drives Cyst Growth in ADPKD

Yuvaram N.V. Reddy, MBBS, MPH, FASN (2020)
- DEI fellowship focuses on kidney health disparities
- Medical education has woken up, and that’s a good thing

Rhiannon D. Reed, DrPH (2018)
- Greater community vulnerability is associated with poor living donor navigator program fidelity
- Change in Body Mass Index and Attributable Risk of New Onset Hypertension among Obese Living Kidney Donors
- Reducing Racial Disparities in Access to Transplant in the United States: One Step at a Time

Timo Rieg, MD, PhD (2010)
• Sodium phosphate cotransporter 2a inhibitors: potential therapeutic uses
• NHE3 in the thick ascending limb is required for sustained but not acute furosemide-induced urinary acidification

Aylin R. Rodan, MD, PhD, FASN (2013)
• Apolipoprotein L1 Genotypes and the Association of Urinary Potassium Excretion with CKD Progression
• WNK kinases sense molecular crowding and rescue cell volume via phase separation
• Intracellular Ion Control of WNK Signaling

Dorry L. Segev, MD, PhD (2009)
• Delirium, changes in cognitive function, and risk of diagnosed dementia after kidney transplantation
• Hurricanes and Mortality among Patients Receiving Dialysis
• Listing at non-local transplant centers is associated with increased access to deceased donor kidney transplantation

Johannes S. Schlondorff, MD, PhD (2009)
• Gain-of-function, focal segmental glomerulosclerosis Trpc6 mutation minimally affects susceptibility to renal injury in several mouse models
• Trpc6 gain-of-function disease mutation enhances phosphatidylserine exposure in murine platelets

Nikolaos Skartsis, MD, PhD (2017)
• The dichotomous outcomes of TNFa signaling in CD4+ T cells
• Regulatory T cell homeostasis: Requisite signals and implications for clinical development of biologics

Ken Sutha, MD, PhD (2019)
• Disability Identity Among Diverse Learners and Employees at an Academic Medical Center
• Utilising low-cost, easy-to-use microscopy techniques for early peritonitis infection screening in peritoneal dialysis patients

Roderick J. Tan, MD, PhD (2018)
• Suppression of NRF2 Activity by HIF-1α Promotes Fibrosis after Ischemic Acute Kidney Injury

Sandhya S. Thomas, MD, FASN (2022)
• SIRPα Mediates IGF1 Receptor in Cardiomyopathy Induced by Chronic Kidney Disease
• Progress in the management of patients with diabetes and chronic kidney disease
• Decoding the transcriptome of denervated muscle at single-nucleus resolution

Sri Lekha Tummalaapalli, MD, MBA, FASN (2019)
• Early Findings from Medicare’s End-Stage Renal Disease Treatment Choices Model
• Is Home Dialysis the Way Forward for Medicare? Assessing Potential Cost Savings Associated with Peritoneal Dialysis
• Comparing Costs of Hemodialysis and Peritoneal Dialysis (Podcast)

Dan Wang, PhD (2021)
• Kidney-on-a-Chip: Mechanical Stimulation and Sensor Integration
  Xiaonan H. Wang, MD (2002)
  • The impact of senescence on muscle wasting in chronic kidney disease

Jason A. Watts, MD, PhD (2020)
  • A common transcriptional mechanism involving R-loop and RNA abasic site regulates an enhancer RNA of APOE
  • Kidney epithelial cells make functional vasopressin in response to hypertonicity

Le Xiao, PhD (2022)
  • Cryo-EM structures of the active NLRP3 inflammasome disk

Ting Yang, MD, PhD (2020)
  • Cell - Specific Actions of the Prostaglandin E - Prostanoid Receptor 4 Attenuating Hypertension: A Dominant Role for Kidney Epithelial Cells Compared with Macrophages