CRIC Funded Ancillary Studies

Study Title
Principal Investigator
University Affiliation
Year funded
Keywords

Nutrition Assessment in Chronic Renal Insufficiency Cohort (CRIC) Study Population
Cheryl Anderson, PhD, MPH
The Johns Hopkins University
2002
nutrition, cerebrovascular disease, protein-energy malnutrition, metabolism

A Structural Approach to Renal Bone Disease in CRIC
Mary Leonard, MD, MSCE
Children’s Hospital of Philadelphia
2003
renal bone disease, renal osteodystrophy, bone mineral density

Hypertension and Hypercholesterolemia Control in Patients with CKD
Paul Muntner, PhD
University of Alabama at Birmingham
2003
hypertension, hypercholesterolemia, cardiovascular disease, hemodynamics, nutrition

CRIC Heart Failure Detection Cohort and the CRIC Heart Failure Progression Cohort
Michael Shlipak,
University of California, San Francisco
2003

Development and Validation of GFR Estimating Equations
Andrew Levey, MD
Tufts University
2004
estimated glomerular filtration rate, meta analysis, equation

Carotid Intima-Media Thickness in Chronic Kidney Disease
Sylvia Rosas, MD, MSCE
University of Pennsylvania
2004
carotid intima-media thickness, carotid plaque, progression, cardiac outcomes

Hispanic Recruitment in CRIC
Julio Vijil, Jr., MD
University of Illinois, Chicago
2004
recruitment, Hispanic

*Please note that this list is limited to approved CRIC ancillary studies that have received funding. The CRIC Steering Committee reviews and approves new proposals on a rolling basis and maintains a separate list of approved but not yet funded proposals which are also considered when vetting new submissions.*
CRIC Funded Ancillary Studies

Study Title
Principal Investigator
University Affiliation
Year funded
Keywords

Cognitive Function in Chronic Renal Insufficiency
Kristine Yaffe, MD
University of California, San Francisco
2005
cognitive function, gfr, depression

Pulse Wave Velocity and Chronic Kidney Disease
Raymond Townsend, MD
University of Pennsylvania
2005
pulse wave velocity, hypertension, cardiovascular disease

Sleep Disturbances as a Non-traditional Risk Factor in CKD
Eve Van Cauter, PhD
University of Chicago
2005
sleep, risk factor, c-reactive protein

Diabetic and Hypertensive Retinopathy and CRI
Juan E. Grunwald, MD
University of Pennsylvania
2005
retinopathy, hypertension, diabetes, ophthalmology

Hispanic Chronic Renal Insufficiency Cohort
James Lash, MD
University of Illinois, Chicago
2005
hispanic, cardiovascular disease, progression

Cytokine Gene Polymorphism in the CRIC Cohort
Dominic Raj, MD
George Washington University
2006
cytokine, polymorphism, inflammation

Genetics of Atherosclerosis in Renal Disease
Muredach P. Reilly, MBBCH, MSCE
University of Pennsylvania
2006
genetics, atherosclerosis, metabolic syndrome, inflammation
CRIC Funded Ancillary Studies

Study Title
Principal Investigator
University Affiliation
Year funded
Keywords

Vitamin D Deficiency, Physical Performance and Cardiovascular Disease
Mary Leonard, MD, MSCE
Children's Hospital of Philadelphia
2006
vitamin D, calcidiol, frailty, PTH

Sodium and Cardiovascular Disease in Patients with CKD
Jiang He, MD, PhD
Tulane University
2006
Sodium, electrolyte excretion, potassium, cardiovascular disease, cardiac outcomes

Study of Advanced Chronic Renal Insufficiency
Chi-yuan Hsu, MD, MSc
University of California, San Francisco
2006
progression, transition to ESRD, GFR

KDQOL and the Spanish-Speaking CKD Population
Julio Vijil, Jr., MD
University of Illinois, Chicago
2007
KDQOL , hispanic, HCRIC

Health Literacy and Acculturation in Hispanic Patients with Chronic Kidney Disease
Claudia Lora, MD
University of Illinois, Chicago
2007
HCRIC, health literacy, Hispanic, acculturation, risk factor, cardiovascular disease

Genomics of myocardial transcription factors in cardiac remodeling
Thomas P. Cappola, MD, ScM
University of Pennsylvania
2007
genetics, cardiac remodeling, transcription factors

Pulse Wave Velocity and Chronic Kidney Disease
Stephanie DeLoach, MD
Thomas Jefferson University
2007
pulse wave velocity, cardiovascular disease
<table>
<thead>
<tr>
<th>Study Title</th>
<th>Principal Investigator</th>
<th>University Affiliation</th>
<th>Year funded</th>
<th>Keywords</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Corin Allele and Heart Disease</em></td>
<td>Daniel L. Dries, MD</td>
<td>Yale University</td>
<td>2007</td>
<td>genetics, cardiovascular disease, natriuretic peptide system, cardiac hypertrophy, corin</td>
</tr>
<tr>
<td><em>CRIC Plus – Race Group Analysis</em></td>
<td>Vanessa Grubbs, MD, MPH</td>
<td>University of California, San Francisco</td>
<td>2007</td>
<td>racial disparities, progression, CRIC-plus, ESRD</td>
</tr>
<tr>
<td><em>Carotid Intima-Media Thickness in Chronic Kidney Disease (Renewal)</em></td>
<td>Sylvia Rosas, MD, MSCE</td>
<td>University of Pennsylvania</td>
<td>2007</td>
<td>carotid intima-media thickness, carotid plaque, progression, cardiac outcomes</td>
</tr>
<tr>
<td><em>Using 2-D Gel to Identify Patterns of Urine Protein Excretion that Predict Loss of GFR</em></td>
<td>Chi-yuan Hsu, MD, MSc</td>
<td>University of California, San Francisco</td>
<td>2008</td>
<td>two-dimension differential gel electrophoresis, GFR, proteinuria</td>
</tr>
<tr>
<td><em>Molecular Predictors of Progressive Renal Failure in the Chronic Renal Insufficiency Cohort</em></td>
<td>Matthias Kretzler, MD</td>
<td>University of Michigan</td>
<td>2008</td>
<td>progression, molecular predictors, biomarkers</td>
</tr>
<tr>
<td><em>Clinical Outcomes of Pre-ESRD CKD Patients with Hepatitis C Infection</em></td>
<td>Akinlolu O. Ojo, MD, PhD, MPH</td>
<td>University of Michigan</td>
<td>2008</td>
<td>HCV, pre-ESRD</td>
</tr>
<tr>
<td><em>Genetic of Lipoprotein Metabolism and CVD in CKD</em></td>
<td>Daniel J. Rader, MD</td>
<td>University of Pennsylvania</td>
<td>2008</td>
<td>lipoproteins, metabolism, genetics</td>
</tr>
</tbody>
</table>
CRIC Funded Ancillary Studies

**Study Title**  
Principal Investigator  
University Affiliation  
Year funded  
Keywords  

*Role of FGF-23 in Mineral Metabolism and CVD in Pre-dialysis CKD*  
Myles S. Wolf, MD, MMSc  
University of Miami  
2008  
FGF-23, phosphate therapy, hyperphosphatemia, left ventricular mass  

*The Renin-Angiotensin-Aldosterone System and Cardiac Arrhythmias*  
Rajat Deo, MD  
University of Pennsylvania  
2009  
atrial fibrillation, renin, aldosterone, angiotensin, cardiovascular disease  

*CKD, Metabolic Syndrome and Cardiovascular Disease*  
Harold I. Feldman, MD, MSCE  
University of Pennsylvania  
2009  
metabolic syndrome, insulin resistance, cardiovascular disease, progression  

*GWAS in CKD: The CRIC Study*  
Harold I. Feldman, MD, MSCE  
University of Pennsylvania  
2009  
GWAS, genetics, GFR, progression  

*Chronic Kidney Disease Biomarker Validation*  
Chi-yuan Hsu, MD, MSc and Kathleen D. Liu, MD, PhD, MAS  
University of California, San Francisco  
2009  
biomarkers, kidney injury  

*The Role of Neuregulin in Human Cardiac Remodeling and Heart Failure*  
Bonnie Ky, MD, MSCE  
University of Pennsylvania  
2009  
NRG-1, cardiac remodeling  

*Hypertension in Advanced Chronic Kidney Disease*  
Nisha Bansal, MD, MAS  
University of California, San Francisco  
2010  
hypertension, progression, ESRD, blood pressure, cardiovascular disease
CRIC Funded Ancillary Studies

Study Title
Principal Investigator
University Affiliation
Year funded
Keywords

The Effect of Sickle Cell Trait upon Progression of Chronic Kidney Disease
Vimal Derebail, MD, MPH
University of North Carolina
2010
risk factors, sickle cell trait, hemoglobinopathy

Elevated Nighttime BP – Clinical and Demographic Features, Correlates, and Changes Over Time
Paul E. Drawz, MD, MHS
Case Western Reserve University
2010
hypertension, blood pressure, nighttime ABP

Joint Analysis of Longitudinal Outcomes and Clinical Events in Chronic Kidney Disease Cohorts
Tom Greene, PhD
University of Utah
2010
longitudinal analysis, statistical methods, multi-state models, causal models

Health Literacy, Acculturation and Social Support in Hispanics with Chronic Kidney Disease
Claudia Lora, MD
University of Illinois, Chicago
2010
HCRIC, health literacy, Hispanic, acculturation, risk factors, cardiovascular disease

Validation of the Beck Depression Inventory in Hispanics with Chronic Kidney Disease
Ana C. Ricardo, MD, MPH, MS
University of Illinois, Chicago
2010
Beck depression inventory, Hispanic, depression,

Carbamylated LDL and Cardiovascular Events
Sudhir V. Shah, MD
University of Arkansas
2010
carbamylated LDL, cardiovascular disease, risk factors, atherosclerosis

Pulse Wave Velocity (Renewal)
Raymond Townsend, MD
University of Pennsylvania
2010
pulse wave velocity, hemodynamics, blood pressure
CRIC Funded Ancillary Studies

**Study Title**

**Principal Investigator**

**University Affiliation**

**Year funded**

**Keywords**

*Modifiable and Novel Risk Factors for and Consequences of Acute Kidney Injury in the Setting of Chronic Kidney Disease: a CRIC Ancillary Study*

Amanda Hyre Anderson, PhD, MPH

University of Pennsylvania

2011

acute kidney injury, progression, mortality

*Do patient safety events account for adverse outcomes in CKD?*

Jeffrey Fink, MD

University of Maryland

2011

safety incidents, outcomes, metabolic disturbance

*Abrupt Transition to ESRD from CKD*

Chi-yuan Hsu, MD, MSc

University of California, San Francisco

2011

ESRD, transition

*CKD Blood Biomarker Discovery (sub-protocol of the CKD Biomarkers Consortium)*

Lesley Inker, MD, MS

Tufts University

2011

biomarkers, progression, proteomics

*Hispanic Chronic Renal Insufficiency Cohort (Renewal)*

James Lash, MD

University of Illinois, Chicago

2011

Hispanic, cardiovascular disease, progression

*Novel Paradigm to Understand Diabetic Complications*

Kumar Sharma, MD

University of California, San Diego

2011

mitochondria, urine metabolomics, nephropathy, retinopathy

*Cognitive Decline in Chronic Renal Insufficiency (Renewal)*

Manjula Tamura, MD, MPH and Kristine Yaffe, MD

Stanford University

2011

cognitive function, gfr, decline, oxidative stress markers
Health Disparities in Chronic Kidney Disease
James Lash, MD
University of Illinois, Chicago
2012
socioeconomic status, health literacy, health disparities

Acidosis, Net Acid Excretion and Morbidity in CKD
Julia Scialla, MD, MHS
Duke University
2012
metabolic acidosis, nutrition, bone and mineral metabolism, urinary electrolytes, progression, cardiovascular disease, mortality

Genetics of Race and Disordered Mineral Metabolism in CKD
Myles S. Wolf, MD, MMSc
Northwestern University
2012
phosphate, FGF23, klotho, CKD, CVD, genetics, ancestry, racial disparities

Mexico Chronic Renal Insufficiency Cohort (MCRIC)
James Lash, M.D.
University of Illinois, Chicago
2012
Chronic kidney disease progression, Hispanics, Mexico

Metabolomic Studies in Chronic Kidney Disease
Harold I. Feldman, MD, MSCE
University of Pennsylvania
2012
metabolomics

Gender Disparities and Endogenous Estrogen in Chronic Kidney Disease Outcomes
Ana Ricardo, MD, MPH, MS
University of Illinois, Chicago
2013
Sex hormones, gender disparities
CRIC Funded Ancillary Studies

Study Title
Principal Investigator
University Affiliation
Year funded
Keywords

Mediators & Prognostic Value of Muscle Mass & Function in Chronic Kidney Disease
Perry Wilson, M.D.
Yale University
2013
Sarcopenia, creatinine generation rate, chronic kidney disease, myostatin, caspase-3, activin A, inflammation, tnf-alpha, tgf-beta, frailty

FGF-23 and Clinical Outcomes in ADPKD Patients
Myles S. Wolf, MD, MMSc
Northwestern University
2013
FGF23, CKD, ADPKD, phosphate

Validation of the Kidney Knowledge Survey (KiKS) in Hispanics with Chronic Kidney Disease.
Claudia Lora
University of Illinois at Chicago
2013
Hispanics, Chronic Kidney Disease Knowledge, Spanish language

Estimating GFR from a Panel of Endogenous Filtration Markers (Panel eGFR)
Lesley Inker
Tufts Medical Center
2013
GFR, beta trace protein, beta 2 microglobulin, cystatin C, creatinine

Serum Bicarbonate and Cardiovascular Risk in Patients with Chronic Kidney Disease
Mirela Dobre, M.D.
Case Western Reserve University
2013
metabolic acidosis, metabolic alkalosis, cardiovascular disease, mortality

Role of Sclerostin in Disordered Mineral Metabolism in CKD
Tamara Isakova, MD, MMSc
Northwestern University
2013
CKD, sclerostin, FGF23, PTH, phosphate

Pathophysiological Role of Prorenin
Alfred Cheung, M.D.
University of Utah
2013
Prorenin, chronic kidney disease, retinopathy, cardiovascular disease, diabetes
CRIC Funded Ancillary Studies

**Study Title**

**Principal Investigator**

**University Affiliation**

**Year funded**

**Keywords**

Enhancing appreciation of the clinical significance of acute kidney injury
Raymond Hsu
University of California, San Francisco
2013
Acute kidney injury (AKI), chronic kidney disease (CKD)

Vitamin D catabolism in chronic kidney disease
Ian de Boer
University of Washington
2013
Vitamin D, mineral metabolism, CKD

Plasma KIM-1 and Chronic Kidney Disease
Sushrut Waikar
Brigham and Women’s Hospital
2014
Tubular injury; biomarkers of progression

Novel metabolites associated with renal outcomes
Tammy Sirich
Stanford University
2014
mass spectrometry, metabolomic, CKD

Is there a digital divide in chronic kidney disease?
Clarissa Diamantidis
Duke University
2014
CKD, health information technology, e-literacy, patient safety

Performance of Vitamin D-Binding Protein (DBP) ELISA by Genotype: Validation using Mass Spectrometry
Mary Leonard, Michelle Denburg
Stanford University/Children’s Hospital of Philadelphia
2014
Vitamin D, vitamin D-binding protein, genotype

Visceral adiposity and fitness among CRIC participants (phase 3)
Sankar Navaneethan
Cleveland Clinic
2014
Obesity, fitness, and kidney disease
CRIC Funded Ancillary Studies

Study Title
Principal Investigator
University Affiliation
Year funded
Keywords

*Measures of fibrosis and clinical outcomes in chronic kidney disease*
Amanda Hyre Anderson, PhD, MPH
University of Pennsylvania
2015
fibrosis, CKD progression, cardiovascular disease, galectin-3, CTGF or CCN2, collagen type III, MMP-2

*Heart failure and arrhythmias in CKD*
Nisha Bansal, MD, MAS
University of California, San Francisco
2015
heart failure, prediction, cardiac arrhythmias, biomarkers

*Whole-exome sequencing study of diabetic nephropathy*
Tanika Kelly
Tulane University
2015
diabetic nephropathy; next-generation sequencing; whole-exome sequencing; rare variants; low frequency variants

*Longitudinal Changes in Metabolomic Biomarkers and CKD Progression*
Eugene Rhee
Massachusetts General Hospital/Broad Institute
2015
metabolomics, CKD, CKD progression

*Oxalate in CKD Pathogenesis and Progression*
Sushrut Waikar
Brigham and Women’s Hospital
2015
oxalate; chronic kidney disease; cardiovascular disease; decline in GFR

*Epigenetic dysregulation in diabetic kidney disease*
Katalin Susztak
University of Pennsylvania
2015
cytosine methylation, epigenetics

Prognostic biomarkers in chronic kidney disease
Farsad Afshinnia
University of Michigan
2015
chronic kidney disease, progression, end stage renal disease, biomarker, metabolomics, Mass spectrometry
# CRIC Funded Ancillary Studies

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</thead>
<tbody>
<tr>
<td>Pilot Study on Proteomics of Kidney Disease Progression in the CRIC Study</td>
<td>Rajat Deo</td>
<td>University of Pennsylvania</td>
<td>2015</td>
<td>proteomics, progressive kidney disease, SOMAscan</td>
</tr>
<tr>
<td>Targeted Biomarkers of Chronic Kidney Disease (CKD) and its Complications</td>
<td>Jeffrey Schelling</td>
<td>Case Western Reserve University</td>
<td>2015</td>
<td>Chronic kidney disease, diabetic nephropathy, biomarker, case-cohort study</td>
</tr>
<tr>
<td>Identifying Modifiable Biomarkers/Mediators for Cardiovascular Disease in Chronic Kidney Disease</td>
<td>Peter Ganz</td>
<td>University of California, San Francisco</td>
<td>2016</td>
<td>cardiovascular risk prediction model; chronic kidney disease; proteomics</td>
</tr>
<tr>
<td>Tubular Secretion and Chronic Kidney Disease Complications</td>
<td>Bryan Kestenbaum</td>
<td>University of Washington</td>
<td>2016</td>
<td>tubular secretion, biomarkers, kidney, hippurate</td>
</tr>
<tr>
<td>Assessing the accuracy of information in the CMS Medical Evidence Report (form CMS-2728)</td>
<td>Chi-yuan Hsu</td>
<td>University of California, San Francisco</td>
<td>2016</td>
<td>incident ESRD, co-morbidity, information bias</td>
</tr>
<tr>
<td>Novel Diagnostics and Therapeutic Targets for Calcification in CKD</td>
<td>Tamara Isakova</td>
<td>Northwestern University</td>
<td>2016</td>
<td>vascular calcification; calcification propensity; calciprotein particles</td>
</tr>
<tr>
<td>Assessment of nicotine exposure from toenail clippings of CRIC participants</td>
<td>Edgar Jaimes</td>
<td>MSKCC</td>
<td>2016</td>
<td>nicotine, smoking, chronic kidney disease (CKD)</td>
</tr>
</tbody>
</table>
CRIC Funded Ancillary Studies

Study Title
Principal Investigator
University Affiliation
Year funded
Keywords

Metabolomics for Identifying Biomarkers of Dietary Intake & Kidney Disease Progression
Casey Rebholz
Johns Hopkins University
2016
diet; metabolomics; kidney disease progression

The Gut Microbiome and the metabolome in CKD
Amanda Anderson
University of Pennsylvania
2016
gut microbiota, metabolomics, metabolic profiling, CKD

Weight trajectory in chronic kidney disease and risk of adverse outcomes
Elaine Ku
University of California, San Francisco
2016
Weight loss, BMI, CKD, ESRD

Vitamin K status, CVD and arterial stiffness in chronic kidney disease: The Chronic Renal Insufficiency Cohort
Kyla Shea
Tufts University
2017
Vitamin K, matrix gla protein, kidney function, CVD, arterial stiffness

MicroRNAs in progressive renal disease – a pilot study in CRIC (MIRROR-TRIC)
Christos Argyropoulos
University of New Mexico
2017
microRNAs, Chronic Kidney Disease, Proteinuria, RNA-seq, biomarkers, measures of renal function

Developing and validating prognostic metabolic signatures of diabetic kidney disease
Loki Natarajan
University of California, San Diego
2017
Diabetic kidney disease; metabolomics; prognostic models; variable selection

Health literacy and Self-Management in Chronic Kidney Disease: a CRIC Ancillary Study
Sarah Schrauben
University of Pennsylvania
2017
Self-management; CKD progression; Health literacy
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Hispanic CRIC Study renewal</td>
<td>James Lash</td>
<td>University of Chicago Illinois</td>
<td>2017</td>
<td>Hispanic/Latino; chronic kidney disease</td>
</tr>
<tr>
<td>Soluble Fms-Like Tyrosine Kinase-1 (sFlt-1), Placental growth factor (PlGF) and CVD in Participants with CKD</td>
<td>Saif Anwaruddin and Rajat Deo</td>
<td>University of Pennsylvania</td>
<td>2018</td>
<td>Cardiovascular disease, soluble Fms-Like Tyrosine Kinase-1, Placental growth factor (PlGF)</td>
</tr>
<tr>
<td>The effects of protein carbamylation in chronic kidney disease (CKD)</td>
<td>Sahir Kalim</td>
<td>Massachusetts General Hospital</td>
<td>2018</td>
<td>Protein carbamylation; CKD; kidney function; mortality; chronic renal insufficiency cohort (CRIC), CKD progression</td>
</tr>
<tr>
<td>Statistical Methods for Genomics of CKD</td>
<td>Andrea Foulkes</td>
<td>Mount Holyoke</td>
<td>2018</td>
<td></td>
</tr>
<tr>
<td>Acute kidney injury among patients with chronic kidney disease</td>
<td>Chi Hsu</td>
<td>University of California, San Francisco</td>
<td>2018</td>
<td>Acute kidney injury (AKI)</td>
</tr>
<tr>
<td>The role of functional iron deficiency in systemic complications of CKD</td>
<td>Monique Cho</td>
<td>University of Utah</td>
<td>2018</td>
<td>Iron, chronic kidney disease, hepcidin, cardiovascular disease</td>
</tr>
<tr>
<td>Sleep disordered breathing as a predictor of outcomes in chronic kidney disease</td>
<td>Ana Ricardo</td>
<td>University of Illinois at Chicago</td>
<td>2019</td>
<td>Sleep apnea, chronic kidney disease progression, cardiovascular disease</td>
</tr>
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CRIC Funded Ancillary Studies

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<tbody>
<tr>
<td>Population-Based Limits of 24-Hour Urinary Creatinine Excretion</td>
<td>Bryan Kestenbaum</td>
<td></td>
<td>2019</td>
<td>Urine creatinine, excretion, height, weight</td>
</tr>
<tr>
<td>Mixed Methods Study of Chronic Kidney Disease Self-Management</td>
<td>Sarah Schrauben</td>
<td>University of Pennsylvania</td>
<td>2019</td>
<td>Self-management; CKD progression</td>
</tr>
<tr>
<td>Dynamic Prediction of Renal Failure Using Longitudinal Prognostic Information among Patients with Chronic Kidney Disease and Kidney Transplant</td>
<td>Liang Li</td>
<td>University of Texas MD Anderson Cancer Center</td>
<td>2019</td>
<td>Dynamic prediction; Prediction model; CKD; Kidney transplant; ESRD; Graft failure</td>
</tr>
<tr>
<td>American Indian Chronic Renal Insufficiency Cohort Study (AI-CRIC Study)</td>
<td>Vallabh Shah</td>
<td>University of New Mexico HSC</td>
<td>2019</td>
<td>Native American, Disparity, CKD, CVD</td>
</tr>
<tr>
<td>Access to Health Care and Health Outcomes in Chronic Kidney Disease</td>
<td>Stephanie Toth-Manikowski</td>
<td>University of Illinois</td>
<td>2019</td>
<td>Access to care, Healthcare Access, Chronic kidney disease, Health disparities</td>
</tr>
<tr>
<td>Characterization of Illness Representation Groups in Chronic Kidney Disease</td>
<td>Eleanor Rivera</td>
<td>University of Pennsylvania</td>
<td>2019</td>
<td>Chronic kidney disease, illness representation, treatment adherence, health literacy, health care utilization</td>
</tr>
<tr>
<td>AREG in urine and serum as a biomarker of CKD severity and progression</td>
<td>Andreas Herrlich</td>
<td>Washington University School of Medicine in St. Louis</td>
<td>2019</td>
<td>Amphiregulin (AREG), epidermal growth factor (EGF), epidermal growth factor receptor (EGFR)</td>
</tr>
</tbody>
</table>
CRIC Funded Ancillary Studies

Study Title
Principal Investigator
University Affiliation
Year funded
Keywords

Health Disparities in Chronic Kidney Disease Mentoring Program
Jim Lash
University of Illinois, Chicago
2019
Health disparities, chronic kidney disease, physical activity, sleep disorders