



# THE JARED GRANTHAM KIDNEY INSTITUTE NEWSLETTER

## A MESSAGE FROM THE DIRECTOR

This was a month of celebration for the Kidney Institute as we hosted yet another successful Grantham Symposium (the 8th) and honored James Calvet, Ph.D. on the occasion of his retirement. It was truly moving to hear so many former mentees talk about his impact on their careers and their personal lives. At the same time, few of us were aware of Dr. Calvet's pre-PKD research focused on small RNA molecules, which resulted in groundbreaking publications in *Cell*, *Science* and *PNAS*. In this issue of the JGKI newsletter, you can read all about the extraordinary 42-year career of Dr. Calvet at KUMC, and his legacy of scientific leadership.

This issue highlights other research faculty at the Kidney Institute that are busy building a new legacy. Some are poised for stardom, like Reem Mustafa, a physician-scientist who is internationally recognized for her work on evaluating evidence, developing guidelines, and advancing methods for the new and rapidly growing discipline of implementation science. Others are just at the start of their journey, like Kyle Jansson, who did all of his training as an M.D., Ph.D. student, Internal Medicine resident, chief resident, and Nephrology fellow at KUMC, and joined the Nephrology Division faculty last year. You can read all about the exciting and novel ideas that he is exploring in his new laboratory.

I sincerely hope you enjoy hearing the latest news about the JGKI, learning more about some of the Institute members, and celebrating the achievements of your fellow Jayhawks.



**Alan Yu, M.B.,B.Chir.**

Director, Jared Grantham  
Kidney Institute

Director, Division of  
Nephrology and Hypertension,  
KU School of Medicine

Harry Statland and Solon  
Summerfield Professor of  
Medicine, Nephrology and  
Hypertension

# JGKI RESEARCH

## DR. JAMES CALVET'S EXTRAORDINARY LEGACY

James Calvet arrived at the University of Kansas Medical Center in 1981 to join the Department of Biochemistry as an assistant professor. As a biochemist and cancer researcher, Calvet didn't initially have much knowledge about or interest in the kidney. At the time, Calvet's work focused on cancer biology, RNA biochemistry, and the still-novel recombinant DNA technology. Jared Grantham's name wasn't associated with the Kidney Institute; in fact, there wasn't yet a Kidney Institute. So, when a colleague invited Calvet to sit in on one of Grantham's seminars, he passed on the opportunity. After all, Calvet's work on cancer had nothing to do with kidneys.

But Calvet's department chair at the time, Kurt Ebner, thought differently. Grantham spoke about his work trying to understand the cause of polycystic kidney disease (PKD), a genetic condition which involves the abnormal growth of cells in kidney tubules that results in the formation of thousands of fluid-filled cysts in the kidneys, leading ultimately to kidney failure. Ebner arranged a meeting between Calvet and Grantham, and Calvet realized that Grantham's work on PKD had something in common with his background in cancer research. Although PKD cysts didn't behave exactly like cancer and didn't metastasize, they seemed to involve uncontrolled cellular proliferation, just like cancer. PKD might provide a new system for Calvet, who wanted to better understand what happens when cells divide unchecked. Grantham, for his part, needed Calvet's expertise in biochemistry and genetics. With that collaboration, Calvet began his almost four decades of work in elucidating the basic biology of PKD. As he retires from a productive career, Calvet hopes that the next generation of scientists can transform the discoveries he and his colleagues have made into effective therapies for the condition that affects over 500,000 people in the United States.



***"I've been very fortunate in my research career to have been able to work with people who are very smart, who can figure out ways to solve problems we're thinking about."***

When Calvet and Grantham began collaborating in the mid-80s, their first task was to understand what PKD was. "The field in the 1980's was very embryonic. There were very few people around the world working on PKD, and Jared Grantham was clearly the research leader," Calvet says. "We were all in the dark. The genes hadn't been isolated yet. We had no idea."

Calvet's background in cancer research made him curious about the role of protooncogenes in PKD. It was an astute choice. Experiments carried out with the involvement of Ben Cowley, a nephrology fellow at the time, showed that these genes were highly expressed in polycystic kidneys, and this formed the first evidence that PKD was a neoplastic disorder like cancer. Further work in the Kidney Institute and elsewhere showed that kidney injury could induce this abnormal proliferation and increase cyst formation in mouse models, suggesting that this might happen in people with PKD. A watershed period in the field occurred over the years 1994-1996 when several groups

identified the PKD1 and PKD2 genes as the major causes of autosomal dominant PKD. This gave Calvet a new task: figuring out what these genes did. An analysis of the amino acid sequences of PKD1 and PKD2 showed that they were clearly membrane proteins, but their functions weren't obvious.

Once again, Calvet's recombinant DNA training came in handy. Sequencing the 3' end of PKD1 identified a motif that was characteristic of G-protein coupled receptors (GPCRs), which proved to be an important breakthrough. This served as the basis for the PhD studies of his student at the time, Stephen Parnell, who is now a faculty member in the Jared Grantham Kidney Institute (JGKI). Biochemical characterization of PKD1 and PKD2 showed that although they were unusual GPCRs, they were nonetheless part of that protein family. Subsequent work by Calvet and others hinted that both PKD1 and PKD2 help to regulate intracellular calcium.

"These two proteins are doing something very fundamental. We still don't know what that is," Calvet says. One of his first PhD students, Robin Maser, who is now a professor in the JGKI, is working on deciphering the functions of this unusual GPCR.

PKD cells taken from patient kidneys and cultured in the lab showed that their proliferation could be stimulated by cyclic AMP, a signaling molecule that normally has the opposite function. This description of the basic PKD cellular phenotype by Grantham, Larry Sullivan, and Darren Wallace was hugely important because it has given researchers potential targets for the development of therapeutics.

Importantly, one of the major generators of cyclic AMP is the vasopressin receptor, another GPCR. Since tubule cells in PKD patients were being transformed into a hyperproliferative state by cyclic AMP and cyclic AMP was being produced in response to a signal from the vasopressin receptor, Vince Gattone, who was a faculty member in Anatomy & Cell Biology and the Kidney Institute, hypothesized that blocking the vasopressin receptor would slow cyst growth. In a range of mouse models, including those engineered to carry PKD mutations and those with

spontaneously occurring variants, a drug called tolvaptan, used for congestive heart failure, was shown to be effective in PKD. Tolvaptan remains the only approved therapy for PKD.

"I've been very fortunate in my research career to have been able to work with people who are very smart, who can figure out ways to solve problems we're thinking about," Calvet says. Essential to his success over the years was having Brenda Magenheimer running his lab and actively participating in all his research projects. She was hired as a technician in 1987 when Calvet got his first NIH grant on PKD and rose to the rank of Senior Scientist in the JGKI over more than 30 years in Calvet's lab.

Developing more effective PKD therapies with fewer side effects and less toxicity will require researchers to dig deeper into the normal functions of PKD1 and PKD2. These proteins, Calvet says, seem to regulate intracellular calcium and G-protein signaling, which help to regulate a multitude of other pathways, creating a pyramid that becomes deeper and wider as you go down. At the ends of all these seemingly disparate pathways are changes in gene expression that transform a normal tubule cell in PKD patients into one with excessive proliferation. Tolvaptan works near the top of this signaling pyramid, but the entire process is lengthy and rich with targets that could help block the signals PKD cells receive to continue to divide. Knowing more about these biochemical pathways will be a key in the development of newer therapeutics.

In this sense, Calvet's career has come full circle to his training in cancer biology. He says that many anti-cancer drugs have been developed using this strategy, which work by killing cells or slowing proliferation by blocking one pathway or another. The goal in PKD is similar, he points out, although PKD therapy has a major advantage compared to cancer. Treating a tumor requires complete eradication or the disease could return. In PKD, however, the kidneys can continue to function even with a large number of cysts. It's only decades into disease that the kidneys become so compromised that they can no longer function. Even just slowing down PKD progression could have a big impact on patient outcomes.





The long-term nature of any PKD therapy—a drug that a patient takes for decades or an entire lifetime—means that the treatments have to be safe and well-tolerated. Researchers also need to develop several different options so that people with PKD have a range of therapeutics to switch between. Creating multiple well-tolerated therapies is going to be the next big challenge in PKD, Calvet says, and will require additional basic science work from researchers at the JGKI and around the world. One important fact is that, for all of the cysts that can eventually destroy a kidney in PKD, most of the hundreds of thousands of tubules in a kidney don't become cystic. It's why those with PKD can live decades with relatively normal kidney function, since they still have so many tubules that can function as intended. Clinical trials of some drugs that had a reasonable side-effect profile and mechanism of action haven't panned out, although other trials are still underway. The silver bullet for the condition would be to prevent cyst formation completely, although the field has yet to settle on exactly what mechanism causes this.

Nor do all the strategies need to be pharmaceuticals. Other researchers are testing the idea that dietary changes can help slow cyst growth, and it may be possible that preventing infections and acute injury could delay kidney failure in PKD. Calvet says that scientists should be testing whether it would be possible to increase PKD1 expression and thus help keep a tubule cell above the critical threshold, below which the cell begins to proliferate. When he isolated the PKD1 gene promoter, Calvet found it was upregulated by retinoic acid, a compound that is found in the diet or could perhaps be added as a supplement if there is a deficiency. There may be other ways as well. Another regulator of PKD1 is p53, a tumor suppressor gene commonly associated with cancer, which binds to the gene promoter and suppresses PKD1 transcription. Calvet suspects that in PKD, p53 levels may increase and may worsen the disease by causing the initiation of new cysts. Calvet has also investigated the role of Hsp90, a ubiquitous chaperone protein found in all cells that plays a major role in the cell cycle, stress response, and cellular homeostasis. Hsp90 inhibitors are used to treat cancer, and Calvet believes this might be a viable approach for PKD.

He teamed up with a colleague, Joseph Tash, who was testing an Hsp90 inhibitor as a male contraceptive. This drug, Calvet found, along with Xiaogang Li, could slow down cyst growth in mouse models of PKD.

But further development of these therapeutics will be someone else's task. After almost four decades working on PKD, Calvet says it's time to hand over the reins. Currently, the PKD group is thriving as one of three NIH funded PKD Centers, now headed by Darren Wallace – and promises to continue to be successful into the future.

"I was very lucky to have met Jared Grantham. That got me into the field. But I've also benefitted tremendously by being able to interact with so many people in the JGKI over the years – so many wonderful PKD colleagues, students, trainees, and staff. It's what I would say has been a highly collaborative, community effort. We've all worked very well together, and with Alan Yu as its director, have made the Jared Grantham Kidney Institute what it is now – an outstanding research environment."

So now that Calvet is retiring, will we see him around the JGKI? "Yes, certainly, I will stay in touch. Or maybe you'll see me out on the road." Jim and his wife Susan have a new minivan which they've converted into a small campervan. Calvet says they will be enjoying the van life as they tour the national parks and travel around the country seeking new adventures, all of which, hopefully, you'll be able to follow on Calvet's Instagram site at [@vetcalvet](https://www.instagram.com/vetcalvet).



***Dr. Calvet looks forward to more time with his family and adventures in his new minivan.***

**Instagram: @VetCalvet**

# JGKI RESEARCH

## DR. MUSTAFA WORKING WITH KDIGO ON PKD GUIDELINES

Although chronic kidney disease affects 1 in 7 Americans, with an estimated global prevalence of 800 million, Dr. Reem Mustafa learned as a young resident that many aspects of this group of conditions were under-researched. Even for those aspects that Mustafa could research, such as by examining patient medical records, she quickly realized that she wasn't sure physicians and scientists were collecting data in an unbiased manner or if they were focusing on the questions that were most important to patients. The realization sparked her interest in pursuing an MPH and PhD after her residency to study implementation science.

It's a field that identifies methods to help promote the spread of evidence-based practices across medicine. For Mustafa, it's a chance to bring those principles to polycystic kidney disease (PKD) and other chronic kidney conditions. She's interested not only in improving the use of evidence-based practices, but also in understanding the questions patients most want answered. By taking the time to ask patients what aspects of their disease have the most impact on their lives and what they need from research, it gives scientists and physicians alike a chance to improve patients' lives.

"We're not collecting data on the patient's daily experience. That's a big thing that we're missing. We need to know what kinds of treatments people will accept, and how PKD is impacting their lives," she says.

For the past decade, Mustafa's work in implementation science has shown inconsistencies in outcome measures in autosomal dominant PKD trials. This inconsistency was not just in how certain indicators such as kidney function and blood pressure were measured, but also whether the trials assessed patient-centered outcomes such as pain and quality of life. Taken together, this can impact how researchers determine the effects of a therapy or intervention. Now, she is collaborating with the Kidney Disease: Improving Global Outcomes (KDIGO) research consortium,



Dr. Reem Mustafa

***"We need more information about true life experiences, and we need to incorporate this data very quickly into decision-making"***

to create clinical practice guidelines with actionable recommendations for the international community of healthcare providers managing people with PKD and for people with PKD themselves.

"For the first time ever, KDIGO is working on guidelines for PKD, and it's a very exciting time in the field," Mustafa says. "We still have a long way to go, and I think it is very important that we identify additional treatments that have fewer side effects and include patient-reported outcomes in trials."

When Mustafa first began this work at the University of Buffalo in New York, and later at McMaster University in Canada and then at the University of Kansas, she quickly learned that the metrics on which researchers were the most focused were not the ones that were the highest priority for patients. Physicians had the greatest concerns about death. To Mustafa's surprise, while patients were concerned about mortality, at the top of their list was delaying the start of dialysis and other, more immediate concerns, such as pain and brain fog. Mustafa says she never would have thought that those with PKD prioritized these issues without directly asking them. Outcomes like sleep quality, sports participation, and other quality of life issues had a big impact on patients, but the scientific literature almost never asked about them. PKD patients Mustafa worked with also wanted to know about dietary changes, exercise, and medications that might help maintain

kidney function – questions that Mustafa and other physicians didn't have answers for. The more time Mustafa spent with the PKD patient community, the more she realized how many times researchers were missing people-reported outcomes, or those symptoms and criteria that patients used to assess their illness and overall well-being. While it's easier than ever before to collect granular data on a daily basis, the issue isn't as simple as "build it and they will come." For that, researchers like Mustafa need validated tools to ensure that the collection of information isn't biased, and they need better strategies to analyze massive data sets. Figuring out how to surmount these challenges will help scientists know how well patients can tolerate and implement various pharmaceutical or lifestyle interventions and find which efforts are most likely to be successful.

"We need more information about true life experiences, and we need to incorporate this data very quickly into decision-making," Mustafa says.

This data will also need to be tracked over time, especially for prevention trials targeting younger PKD patients who still have well-functioning, normal sized kidneys. Most trials are focused on interventions that can show an effect on outcome in a short period of time. Researchers at the Jared Grantham Kidney Institute are beginning to investigate links between the kidney size (formally measured as total kidney volume) and various urine biomarkers to identify patients at risk of rapid disease progression and see whether a more aggressive treatment approach will provide benefit.

Mustafa wants to hear about the experience of PKD patients around the world. The spread of video-conferencing and related tools in the wake of the pandemic has made it easier to help organize global PKD groups to gather information, especially from low-income and lower-resourced areas. This international participation is key in creating accurate evidence syntheses and systematic reviews on PKD, she says.

Building on this cross-border collaboration are the international guidelines being created by the Kidney Disease KDIGO. Mustafa is also hoping that KDIGO can make inroads on genetic testing for PKD and other diseases to create an individualized, precision medicine approach for patients.

Besides her clinical work, Mustafa also works with international students to help them improve their success at applying for residency programs and increase the nephrology workforce around the world. Her work brings a truly multi-disciplinary, multicultural perspective to the world of PKD.



Dr. Mustafa presents her work on EMPOWER PKD

## DR. KYLE JANSSEN COMPLETES FELLOWSHIP AND FOCUSES ON PKD AND CKD RESEARCH

Until Kyle Jansson began work in Gusavo Blanco's lab at the Jared Grantham Kidney Institute as a fledgling MD/PhD student, he had never heard of polycystic kidney disease (PKD). But once he started working on the molecular mechanisms driving cyst growth in PKD, he was hooked.

"The more I hung around here, the more interested I became in PKD," Jansson says.

Now, as a junior faculty member at the Kidney Institute, Jansson is focusing his work on abnormal mineral deposition in PKD and chronic kidney disease more broadly. During his relatively short career at the Kidney Institute, Jansson has seen huge advances in our understanding of PKD. Although 80 to 85% of PKD cases are caused by mutations in the polycystin-1, next-generation sequencing has allowed researchers to uncover the huge range of polycystin-1 genetic variants linked to PKD. This underlying genetic heterogeneity helps to explain the clinical variability in PKD, but Jansson says attention is also beginning to turn to connections between PKD1 mutations and other genetic variants. These gene-gene interactions may moderate or accelerate PKD progression. "The more you understand the mechanisms and what it is that influences them, the more targets you can find to intervene," Jansson says.



# JGKI RESEARCH

Researchers have also begun to examine the environmental factors that may play a role in PKD. As the disease progresses, more and more healthy kidney is taken over from tubule-derived cysts. These large cysts ultimately disrupt kidney structure and function as they grow, laying down fibrotic scar tissue. Biochemistry studies indicate that altered glucose metabolism affects cyst growth. The presence of both growing cysts and scar tissue indicates immune system involvement, although scientists are still trying to discover precisely what this means.

Despite this, the majority of tubule cells don't form cysts when carrying the same PKD1 or PKD2 mutations as cyst-forming cells. It makes Jansson wonder what goes wrong in cyst forming tubule cells, and what allows most cells to remain healthy. Some factor—and no one yet knows what—tips over the tubule cells from a healthy state into a cyst-forming one. Studies in animal models show that kidneys prone to PKD grow faster after ischemia-reperfusion injuries, which makes Jansson suspect that altered repair mechanisms and/or immune system involvement may play a role in PKD. This knowledge would let physicians intervene in the earliest stages of disease, long before kidney damage has progressed to the point that dialysis or transplant is necessary.

To Jansson, this indicates that “the environments the cyst is growing in is just as important as the genetic mutation itself. And both of those things really impact the course of disease.”

Another potential source of kidney injury that Jansson is exploring is abnormal mineral deposits, especially of phosphorous. He believes that the kidney's response to high serum phosphate levels leads to phosphate deposits in kidney tissue, which drives an inflammatory response that contributes to cyst formation in PKD and kidney dysfunction.

As kidney function declines, serum phosphate levels rise. The kidney responds by pulling more phosphate out of the blood and into the urine to maintain homeostasis and pH balance. It's a solid short-term solution, but over time, the extra



Dr. Kyle Jansson

***“The Kidney Institute at KUMC is the ideal place to work, thanks to the broad range of faculty working on PKD”***

phosphate removed from serum builds up in the kidney, leading to further damage and creating a vicious cycle. This process isn't unique to PKD but is shared across the millions of people with chronic kidney disease. Jansson hopes that by understanding patterns of phosphate deposition and the inflammatory pathways this pathology activates, scientists can develop a therapeutic to inhibit or minimize these processes.

These therapies are especially important for PKD as the only existing therapy—tolvaptan—is very expensive and can have severe toxicity. For a drug that needs to be taken for many years, the situation is far from ideal. But tolvaptan was developed at the Jared Grantham Kidney Institute thanks to basic science work on the underlying mechanisms of disease. Jansson hopes that the next generation of work on elucidating mechanisms of PKD will open the door to more effective and more tolerable therapies.

Jansson says that the Kidney Institute at KUMC is the ideal place to do this work, thanks to the broad range of faculty working on PKD. Jansson says he can always find a colleague to provide mentorship or to give input on an idea or project.

“We're at the point where there's been a lot of work done over the years on the basic mechanisms side, and there's some promising clinical trials some in repurposing drugs like metformin and some with novel pharmaceuticals. But I think that therapies for PKD is the next big bridge that needs to be crossed,” Jansson says.



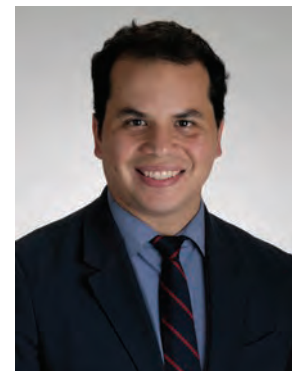
# NEW FACULTY

The Jared Grantham Kidney Institute is proud to welcome our new Clinical Director, **Dr. Duncan Johnstone**. During medical school at the University of Washington, Dr. Johnstone was inspired by nephrology mentors Dr. Pat Fleet and Dr. Leah Haseley while working at Harborview Medical Center. He admired their dedication to clinical excellence combined with their social outreach, and he was able to see how nephrologists could help so many people. Dr. Johnstone enjoys the detective work that can accompany clinical nephrology. “I learned to always keep challenging myself to ask if there are alternative explanations for what is happening to a patient” said Dr. Johnstone.



Dr. Johnstone has experience with both basic research and clinical care with a particular focus on glomerular diseases. During his time at the University of Pennsylvania, he studied Myosin Heavy chain in mice and APOL1 mediated kidney disease in the only person worldwide known to not express the APOL1 protein. At Temple University, he decided to dedicate himself to clinical care and became the Nephrology Fellowship Training Director. Dr. Johnstone was also involved with clinical trials as part of the Neptune consortium, which examined the frequency of single gene mutations in adults with different glomerular diseases. His future goals are to help the clinical division continue to grow, encourage young doctors to become nephrologists, and recruit additional clinical trials to KU. His hobbies include canoeing, hiking, and gardening.

**Dr. Pablo Portocarrero** is a new assistant professor joining the division in July. He was inspired to pursue transplant nephrology after he saw firsthand how transformative a kidney transplant could be. A family member with end stage renal disease had been on dialysis for many years, which was very difficult for the entire family. Eventually, this family member was able to get a kidney transplant and regain his health. “I realized how much the transplant nephrologist was able to help him and his family,” said Portocarrero. Ever since, he has wanted to become a transplant nephrologist. After attending medical school in Peru, Dr. Portocarrero came to the United States in 2015 to continue his studies. During his residency at the Loyola Medicine MacNeal Hospital, Portocarrero was inspired by the way that his mentor, Dr. Andy Kowalski, was “empathetic with patients and colleagues and passionate about his work”. Dr. Portocarrero aims to bring this same mindset to work every day.



During his fellowship at Northwestern University, Portocarrero researched kidney transplant outcomes in patients with scleroderma, and found that transplants were a good option for these patients. He was excited to see how the transplants changed these patients’ lives. In the future, Dr. Portocarrero would like to research kidney transplants in the Latino population and start a project to create a Latino kidney transplant clinic. He said, “there is a healthcare discrepancy for the Latino population, and we need to take a different approach”. After interviewing at KU, Dr. Portocarrero knew that it was the right place for him. His hobbies include playing soccer, listening to music, and enjoying Kansas City barbecue.





# NEW STAFF

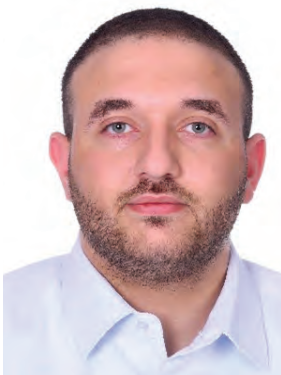
**Muayad Azzam, MD**, is a new postdoctoral research fellow mentored by Dr. Reem Mustafa.

**Morgan Cosgrove** is a new research assistant in Dr. Steven Parnell's research unit. Cosgrove had been an Animal Laboratory Tech but decided to switch over once she heard about Dr. Parnell's lab. In the future, she would like to continue to learn and do research in labs. Her hobbies include crocheting and spending time with friends.

**Hassan Kawtharany, MD**, is a new postdoctoral research fellow mentored by Dr. Reem Mustafa.

**Rachel Reaves** is a new research assistant in Dr. Darren Wallace's research unit. Reaves looks forward to collaborating and continuing her career in research, and she aims to get her PhD in the future. Her hobbies include traveling, reading, and playing with her dog Ozzie.

**Viji Remadevi, MSc**, is a new research associate in Dr. Reena Rao's research unit. Remadevi is interested in making advancements in PKD research and working with other researchers in the field. Helping individuals is always her main goal during research. Her hobbies include gardening and reading.



Dr. Muayad Azzam



Morgan Cosgrove



Dr. Hassan Kawtharany



Rachel Reaves



Viji Remadevi

# PROMOTIONS & AWARDS

## FACULTY PROMOTIONS

**Aditi Gupta, MD:** Promoted to Professor of Medicine

**Robin Maser, PhD:** Promoted to Professor

**Jeffrey Klein, MD:** Promoted to Associate Professor of Medicine

## FACULTY AWARDS

**Michele Pritchard, PhD**

Received Rising Trendsetters STEMMy award from Central Exchange

## POSTDOC AND STUDENT ACHIEVEMENTS

**2023 ASN Kidney Students and Residents STARS:** Awarded to Vinamratha Rao, Jordan Trant and Matthew Kavanaugh

**Anubhav Chakraborty, PhD student** (Mentor: Alan Yu)

Awarded a Biomedical Research Training Program Predoctoral Fellowship

2023 KUMC Student Research Forum 2nd prize for Poster Presentation award

**Sonali Choudhury** (Mentor: Alan Yu)

Accepted into IGPBS program, incoming class of 2023

**Abeda Jamadar, Postdoctoral Fellow** (Mentor: Reena Rao)

Abstract has been selected for an oral presentation at the American Society of Nephrology- Kidney Week conference. Title: "Deletion of the circadian clock gene Bmal1 in renal collecting ducts leads to rapid cyst growth in Autosomal Dominant Polycystic Kidney Disease"

**Matthew Kavanaugh, MD-PhD student** (Mentor: Pamela Tran)

Awarded ASN KidneyCure Predoctoral Fellowship, July 2023-June 2025

**Arturo Lopez, MD, Nephrology Fellow**

Completed his fellowship in Nephrology in June, 2022, and Transplant Nephrology fellowship in June 2023. He is in private practice at Renal Associates in Eagle Pass, Texas. He is affiliated with Baptist Medical Center in San Antonio

**Brittany Martinez, PhD student** (Mentors: Pamela Tran and Irfan Saadi)

Graduated with Honors in Summer 2023, Received Student Achiever STEMMy award by Central Exchange

**Duamene Nyimanu, Postdoctoral Fellow** (Mentor: Alan Yu)

PKD Foundation Postdoctoral Fellowship award

**Abdallah Qasim, MD, Nephrology fellow**

Graduated from the University of Kansas Nephrology Fellowship program in June, 2023. He has since joined a nephrology practice at Marshfield Clinic in Marshfield, Wisconsin



# PKD CENTER OF EXCELLENCE

## KANSAS PKD CENTER NAMED A CENTER OF EXCELLENCE

The PKD Foundation has named The University of Kansas Health System's PKD clinic as a Center of Excellence. The foundation's Centers of Excellence (COE) program was launched and accepted its first clinic applicants in 2022. Its inaugural list of 28 Centers of Excellence, which includes our clinic, was announced in January 2023. This award provided funding for patient navigator services for our polycystic kidney disease patients. Korri Anderson joined our team in March to help develop our patient navigator program.

Our KU Polycystic Kidney Disease Center is proud of this designation, which recognizes us as a leader in offering the most advanced diagnosis and treatment options in the world, including access to the latest clinical trials and treatments. Congratulations to our PKD team! [Learn more >](#)



**PKD FOUNDATION  
CENTERS OF EXCELLENCE**

KU Nephrology PKD Clinic  
2000 Olathe Boulevard  
Kansas City, KS 66160  
Tel. 913.588.6048



Kerri McGreal, MD  
Nephrologist  
PKD COE Director



Franz Winklhofer, MD  
Nephrologist



Alan Yu, M.B., B.Chir.  
Nephrologist  
PKD Clinical Core Director



Reem Mustafa, MD, MPH  
Nephrologist  
Director, Outcomes and  
Implementation Research



Kristian Fowler, ARNP  
Nurse Practitioner



Hannah Burke, LPN  
Clinic Nurse



Darren Wallace, PhD  
PKD Biomarkers and  
Biomaterials Core  
U54 PKD Center Director



Cathy Creed, RN  
Senior Clinical Research  
Nurse Coordinator



Debbie Griffin, RN  
Senior Clinical Research  
Nurse Coordinator



Korri Anderson  
PKD Patient Navigator



Casey Tan  
Clinical Research  
Coordinator



Katelyn Keith, RN  
Clinic Nurse



THE UNIVERSITY OF  
KANSAS HEALTH SYSTEM

**KU** THE JARED GRANTHAM  
KIDNEY INSTITUTE  
The University of Kansas



# PUBLICATIONS

## FACULTY REPORTED PUBLICATIONS

### DALE ABRAHAMSON, PHD

[The Graham and Karnovsky horseradish peroxidase ultrastructural method: A premier JHC citation classic.](#)

Abrahamson DR. J Histochem Cytochem. 2023 Jan;71(1):43-45. doi: 10.1369/00221554221146838. Epub 2022 Dec 21. PMID: 36541711

### JAMES CALVET, PHD

[Single-Cell and CellChat Resolution Identifies Collecting Duct Cell Subsets and Their Communications with Adjacent Cells in PKD Kidneys.](#) Li LX, Zhang X, Zhang H, Agborbesong E, Zhou JX, Calvet JP, Li X. Cells. 2022 Dec 22;12(1):45. doi: 10.3390/cells12010045. PMID: 36611841

[The GPCR properties of polycystin-1- A new paradigm.](#) Maser RL, Calvet JP, Parnell SC. Front Mol Biosci. 2022 Nov 4;9:1035507. doi: 10.3389/fmolb.2022.1035507. eCollection 2022. PMID: 36406261

[Transcription factor FoxM1 promotes cyst growth in PKD1 mutant ADPKD.](#) Yu W, Wang G, Li LX, Zhang H, Gui X, Zhou JX, Calvet JP, Li X. Hum Mol Genet. 2023 Mar 20;32(7):1114-1126. doi: 10.1093/hmg/ddac273. PMID: 36322156

[Prdx5 regulates DNA damage response through autophagy-dependent Sirt2-p53 axis.](#) Agborbesong E, Zhou JX, Li LX, Harris PC, Calvet JP, Li X. Hum Mol Genet. 2023 Jan 27;32(4):567-579. doi: 10.1093/hmg/ddac218. PMID: 36067023

### ADITI GUPTA, MD

[The association of tacrolimus formulation on cerebral blood flow and cognitive function.](#) Mahaparn I, Lepping RJ, Montgomery RN, Mukherjee R, Billinger SA, Brooks WM, Gupta A. Transplantation Direct. 2023 Jul 12;9(8):e1511. doi: 10.1097/TXD.0000000000001511. PMID: 37456588; PMCID: PMC10348734. (Senior Corresponding author)

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# RECENT GRANTS & CONTRACTS

## FACULTY REPORTED GRANTS

### ADITI GUPTA, MD

Lied Pre-Clinical and Clinical/Population Health Pilot Grants  
Internal-KUMC Research Institute

NIDDK Investigator Award to Support Mentoring of Early  
Career Researchers from Diverse Backgrounds  
NIH supplement

### REEM MUSTAFA, MD

**Conducting systematic reviews to inform Amyloidosis  
Diagnostic Guideline**

American Society of Hematology

**Conducting systematic reviews to inform Venous  
Thromboembolism Treatment in Pediatric Guideline**

American Society of Hematology

**Conducting systematic reviews to inform Venous  
Thromboembolism Prophylactic in Pediatric Guideline**

American Society of Hematology/International Society on  
Thrombosis and Haemostasis:

**Conducting systematic reviews to inform Lupus Nephritis  
Guideline**

American College of Rheumatology

### STEPHEN PARNELL, PHD

**Re-expression of Pkd1 in mouse models of ADPKD**

Vertex Pharmaceuticals

### MADHULIKA SHARMA, PHD

**Assessing common mediators of injury in blood brain and  
glomerular filtration barriers in diabetes**

KUMC Internal - KINBRE bridging, with Co-PI: Aditi Gupta

### PAMELA TRAN, PHD

**A novel nutrient sensor pathway in ADPKD**

PKD Foundation Grant

## CLINICAL TRIALS

### KELLY LIANG, MD

**A Study of the Prevalence of Apolipoprotein L1  
(APOL1) Alleles Among Individuals With Proteinuric  
Kidney Disease Who Are of Recent African Ancestry  
or Geographic Origin**

Clinical Trial Sponsor: Vertex

**A Phase 2/3 Adaptive, Double-blind, Placebo-  
Controlled Study to Evaluate the Efficacy and Safety  
of VX-147 in Subjects Aged 18 Years and Older  
With APOL1-mediated Proteinuric Kidney Disease  
(AMPLITUDE)**

Clinical Trial Sponsor: Vertex

**A Prospective Observational Registry of Patients  
Treated with LUPKYNIS™ (voclosporin) in the US  
(ENLIGHT)**

Clinical Trial Sponsor: Aurinia

**Randomized, double-blind, parallel group, placebo-  
controlled, multi-center phase 3 trial to evaluate  
efficacy, safety and tolerability of lanalumab on top  
of standard -of-care in patient with active lupus  
nephritis. (SIRIUS-LN)**

Clinical Trial Sponsor: Novartis

### ALAN YU, M.B., B.CHIR

**Phase 1b, Double-Blind, Placebo-Controlled, Multiple  
Ascending Dose Study in Patients with ADPKD to  
Evaluate the Safety, Tolerability, Pharmacodynamics,  
and Pharmacokinetics of RGLS8429**

Clinical Trial Sponsor: Regulus

**Evaluation of Imaging Techniques in Adults with  
ADPKD and Healthy Volunteers - An Early Phase  
1, Exploratory Study Evaluating 18F-NaF Positron  
Emission Tomography (18F-NaF PET) and Diffusion  
Magnetic Resonance Imaging (Diffusion MRI) to Assess  
Baseline Differences Between Adults with Autosomal  
Dominant Polycystic Kidney Disease (ADPKD) and  
Healthy Volunteers**

Clinical Trials Sponsor: Vertex



# CLINICAL TRIALS

The Jared Grantham Kidney Institute clinical trials teams is deeply grateful for our patients who participate in clinical trials. Thank you for being our partners in research. The knowledge gained through patient participation in trials is what leads to medical advances. Without you, many of the medical treatments and cures we have today wouldn't exist.

Our clinical research unit continues to develop and identify new and promising trials to participate in. Our goal is to provide access to high quality trials and increase diversity enrollment so that all communities can benefit from scientific advances.

[Learn more](#) about our active clinical trials.



Kidney transplant clinical trials team members at KUMC's Clinical Trials Appreciation Day. John Moore, RN, Dr. Diane Cibrik, Jessica Reed, Tommy Winkhofer, Sean O'Brien



General nephrology clinical trials team members at health fair.

Dr. Duncan Johnstone, Cathy Creed, RN, Debbie Griffin, RN, Lyn Harris



Dr. Emmanuel Adomako presents on APOL1 at Internal Medicine Grand Rounds. We are conducting a clinical trial for a new drug that seeks to address the underlying cause of APOL1-mediated kidney disease rather than managing its symptoms. [Learn more >](#)



# COMMUNITY



## Way to go, Renal Avengers!

Top fundraising team at the PKD Foundation's annual Walk for PKD. Thanks to Emily Daniel, KUMC IGPBS student, for the amazing team t-shirt design!

Follow our **Twitter @KUJGKI:**  
[twitter.com/KUJGKI](https://twitter.com/KUJGKI)

## COMMUNITY OUTREACH

Community engagement efforts help strengthen partnerships between community members and promotes social connections. Recent highlights include:

- JGKI's Renal Avengers Walk for PKD team raised \$7,126 for this year's walk and was recognized as the leading KC area fundraising team. We also hosted two information booths at the event: 1) Ask a Scientist and 2) PKD Center of Excellence program at KUMC
- Dr. Aditi Gupta presented Access to Transplantation Care for Latinos at the 14th annual Heartland Conference on Health Equity and Patient Centered Care
- Offered Nephrology outreach clinics at Jaydoc, our KUMC student run clinic that provides non-emergency urgent and preventative care to the underinsured populations of Greater Kansas City
- Hosted a clinical trials information booth and offered free blood pressure checks at the National Pan-Hellenic Council of Kansas City's health fair
- Dr. Emmanuel Adamako gave an Internal Medicine Grand Rounds presentation on "APOL1 : Race, Risk Variants and Therapeutic Approaches"
- Shared info about our APOL1 clinical trial at KUMC's Juneteenth Jazz Festival
- Participated in NKF's Renal Roundtable Lecture Series
- Dr. Reena Rao's lab volunteered at Harvesters to pack produce for food banks
- Hosted *Curiosity to Cures: Kidney Research in Kansas* to celebrate World Kidney Day

## WHAT'S AHEAD

**Join our Renal Avengers team** for the NKF Kidney Walk on Sunday, 10/8/23, in the Power and Light District.



# SPECIAL PROGRAMS

## PKD CENTER HOSTS SUMMER STUDENTS

The JGKI's PKD Center hosted 8 summer students as part of our [U54 funded](#) Summer Student Enrichment Program and 1 KINBRE funded scholar. The program partners a student with a PKD Center faculty mentor to become immersed in a polycystic kidney disease related research project for a full-time, ten-week period over the summer. The students are:

Rayyan Abid, Case Western University Sophomore, Mentor: Dr. Pam Tran

Noah Rookstool, KU Sophomore, Mentor: Dr. Robin Maser

Kaitlyn Sy, KU Junior, Mentor: Dr. Alan Yu

Sadiya Abid, Blue Valley High School Junior, Mentor: Dr. Reem Mustafa

Sydine McMahan, KU Senior, Mentor: Dr. Kyle Jansson

Ashley Diaz Rocha, Rockhurst KINBRE student, Dr. Madhulika Sharma

Anishka Kapoor, High School Junior, Mentor: Dr. Chris Ward

Iman Haider, KU Sophomore, Mentor: Dr. Darren Wallace

Henrietta Ehirim, KUMC Medical Student, Mentor: Dr. Madhulika Sharma



## LYNNELLE PIERCE HONORED AS JUDY GREATHOUSE AWARD 2023 RECIPIENT

The Division of Nephrology presented the Judy Greathouse Excellence in Nephrology Nursing award to Lynelle Pierce, RN on May 3rd. Lynelle has served as a Critical Care Clinical Nurse Specialist at KUMC since 1997. Over the last 15 years, she has worked closely with the Division of Nephrology to care for critically ill patients with kidney disease. During her time serving as the primary Clinical Nurse Specialist for our CRRT program, Lynelle helped establish and expand CRRT practices at KUMC. The safety of critically ill patients is always her top priority and she works tirelessly with both the ICU nurses and Nephrologists to ensure the highest quality of care is delivered to patients with kidney disease who require CRRT. Thank you, Lynelle!





# GRANTHAM SYMPOSIUM

## JARED J GRANTHAM SYMPOSIUM: THE FUTURE OF PKD RESEARCH

To honor Dr. Jared Grantham in his retirement, we hosted the first Jared J. Grantham Symposium in 2014 in Kansas City. Dr. Grantham's vision was to invite all of the Lillian Jean Kaplan award recipients to lead a forward-thinking and interactive forum to focus on future directions and innovations in polycystic kidney disease research. All twelve of the Kaplan Awardees were present at the inaugural symposium to give talks on their vision of "The Future of PKD Research." The Kidney Institute continues to host the Grantham Symposium annually with support from the PKD Foundation. Over 100 researchers attended the symposium this year on September 8, 2023. The keynote presenters were:

Terry Watnick, MD: "The evolution of the PKD field from the perspective of a physician scientist"  
Vishal Patel, MD: "Endogenous PKD1 mRNA therapy for Polycystic Kidney Disease"

The afternoon session of this year's symposium featured a tribute to Dr. James Calvet's legacy in honor of his retirement from KUMC as a University Distinguished Professor Emeritus.



Grantham Symposium speakers enjoying dinner at Season's 52

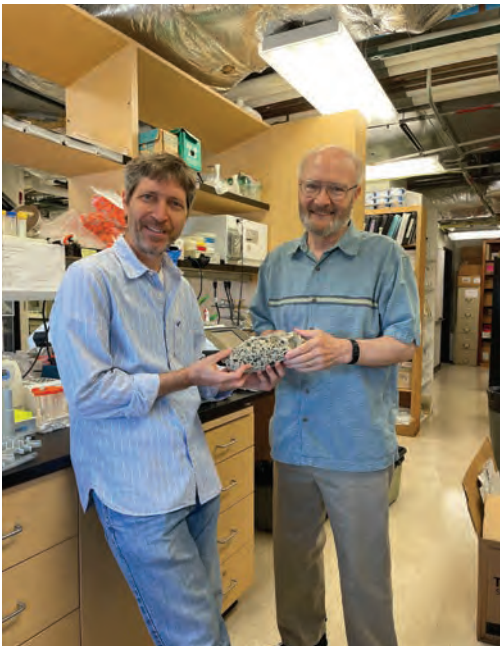




# PHOTO GALLERY



LUNCH FOR DR. CALVET ON HIS LAST DAY AT KUMC. HE'S OFF IN HIS VAN SOMEWHERE NOW...



STEPHEN PARNELL PRESENTS JIM CALVET WITH A PKD KIDNEY ROCK, REEM MUSTAFA'S SUMMER STUDENTS AND POSTDOCS DO LUNCH





# PHOTO GALLERY



PKD CENTER OF EXCELLENCE BOOTH AT PKD WALK



REENA RAO'S LAB VOLUNTEERS AT HARVESTERS



THESE RENAL AVENGERS ARE ALL IN



ADITI GUPTA PRESENTING ON ACCESS TO TRANSPLANT CARE



ALAN YU'S LAB AT DINNER



PKD SUMMER RESEARCH STUDENTS





JGKI FACULTY AND STAFF DOING AMAZING THINGS!



LEFT: NEPHROLOGY FELLOWS GRADUATION DINNER, RIGHT: LYNELLE PIERCE, RN WITH JUDY GREATHOUSE'S FAMILY



# UPCOMING EVENTS

## NKF WALK

SUNDAY, OCTOBER 8, 2023

FESTIVITIES BEGIN: 9:00 AM, WALK BEGINS: 10:30 AM

[> JOIN THE TEAM ONLINE](#)

## JGKI HOLIDAY PARTY

SATURDAY, DECEMBER 2, 2023

*Top Golf*

*10611 Nall Avenue*

*Overland Park, KS 66207*

**6-7PM: DINNER**

**7-9PM: PLAY**



The University of Kansas Medical Center

Mail Stop 3018  
3901 Rainbow Boulevard  
Kansas City, KS 66160

## SHARE YOUR NEWS!

**Please send your news and photos to be included in the next newsletter to Lyn Harris, [lharris3@kumc.edu](mailto:lharris3@kumc.edu). Special thanks to Lizzy Johnstone, Communications Summer Student Intern, for helping with this newsletter!**

## SUPPORT THE KIDNEY INSTITUTE

If you would like to support our research and teaching mission or contribute to the Division of Nephrology's programs and services, please send your contribution to:

Jared Grantham Kidney Institute - KUMC

Attn: Lyn Harris

MS: 3018

3901 Rainbow Blvd

Kansas City, KS 66160

[> Donate Online Here](#)



X: @KUJGKI [www.kumc.edu/ki](http://www.kumc.edu/ki)