

# NEPHROLOGY

# **APOL1 Consortium Ready To Investigate Long-Term Donor-Transplant Outcomes**

n one of the most comprehensive research efforts focused on kidney disease in the country, Washington University transplant nephrologists are poised to start a long-term study on two gene mutations to see if they negatively impact living or deceased kidney donation.

"The timing is right. We have a critical mass of patients, we already are considered a nationally recognized podocyte and focal segmental glomerulsclerosis (FSGS) study center, and we have just created a new and innovative national research collaborative to focus on this effort," says Daniel Brennan, MD, Alan A, and Edith L. Wolff Professor of Renal Diseases and director of transplant nephrology.

Two alleles of the apolipoprotein L1 (ApoL1) gene, called G1 and G2, were identified in 2010 as major risk factors for the development of non-diabetic nephropathy. The gene variants are found almost exclusively in patients with African American or African Caribbean ancestry, thereby pointing to a potential reason African Americans are more likely than Caucasians or Europeans to develop renal diseases such as FSGS, chronic kidney disease, or kidney failure.

Research has found that recipients who have both G1 and G2 variants have poorer kidney transplant outcomes than those who have no gene variants or just one. But what about living or deceased donors with the gene mutations and their impact on



At center is Dr. Brennan. Left to right around Dr. Brennan are: April Pottebaum, PharmD, Sagar Gupta, MD, Anuja Java, MD, Brittany Heady, PA-C, and Fahad Edrees, MBBS

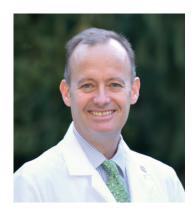
transplant recipients? Small, short-term studies have shown little impact, but researchers say long-term studies are needed to determine whether new screening criteria for African American donors and recipients should be developed.

To address the issue, the National Institutes of Health put out a call for transplant centers to establish multidisciplinary study groups as part of its ApoL1 Long-Term Kidney Transplantation Outcomes (APOLLO) Research Network. Brennan already has signed up 11 organ procurement organizations and 33 adult and pediatric transplant centers for Washington University's APOLLO Consortium for the Responsible and Ethical Evaluation of organ Donation (APOLLO-CREED). He's hoping for a go-ahead from the NIH later this year.

In the meantime, Brennan's colleague, Tarek Alhamad, MD, Assistant Professor of Medicine, is studying the use of Acthar to treat recurrence of primary FSGS after kidney transplantation. The drug, used to treat multiple sclerosis and other conditions, was found to have completely stopped recurrent FSGS in one patient here. Now, with a grant from Mallinckrodt Pharmaceuticals and working with collaborators at Johns Hopkins University, Alhamad has found at least 50 percent of patients enrolled in the study to date have benefited from the drug, which is significant because an estimated one-third of patients have recurrence of primary FSGS after transplant.

"We have built a nephrology transplant program that has some of the best outcomes in the country," says Brennan. "To further improve patient outcomes, we are committed to initiating new and relevant research efforts."

# Message from the Chief



I was delighted to see many of you at the ASN meeting in Chicago this past fall. Over time, attending ASN becomes a reunion with old friends — a wonderful opportunity to regularly catch up and talk about career moves, latest research efforts, updates on clinical practices and academic nephrology.

In this edition of Nephrology Update, one of those names is familiar to almost everyone. James Delmez is a former fellow

who joined the faculty in 1978 as an instructor in our Division and the associate medical director of the Chromalloy American Kidney Center. For more than 40 years he has been at the forefront of renal care and research. Last year, he "tested" the retirement waters and this year, took the plunge to full retirement. We wish him the best and know that he will continue to visit with his colleagues here and keep up on the latest advancements.

Another alumnus of our faculty, Lee Hamm, now serves as dean of Tulane University School of Medicine. I'm sure you will enjoy reading about his national leadership roles and his memories of Washington University.

As you see below, we have many alumni to thank for contributions to our division. Your donations help support a variety of noteworthy efforts, including funding for the Eduardo Slatopolsky Lectureship, travel

expenses for fellows presenting at major meetings, and innovative research. I know we are all pulled in multiple directions for charitable requests and I am thankful that you recognize the strong foundation that you developed while in our Division and want to give back in some fashion.

I look forward to seeing you at the next ASN annual meeting in New Orleans this fall. Make sure to attend our Alumni and Friends Reception. In the meantime, reach out via email and update me on your career journey. You can reach me at humphreysbd@wustl.edu.

Benjamin D. Humphreys, MD, PhD Joseph P. Friedman Associate Professor and Chief

Division of Nephrology Washington University School of Medicine

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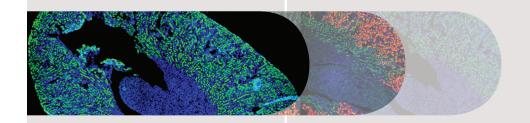
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# Fellowship Notes



By Seth Goldberg, MD, **Assistant Program Director** 

Having a longitudinal view within a training program is a distinct advantage when considering what changes to make. One knows what has been attempted in the past, what has worked, and what has

not. As Program Director Steven Cheng and I both completed our Nephrology fellowship here, we lean on our combined 27 years of experience at Washington University. With (slightly) gray hair to prove it, I can recall those days when the first version of the work-hour rules was implemented. A number of significant changes have followed since, all with the ultimate goal of simultaneously improving education and quality of life for trainees.

With this backdrop, we can proudly point to our most recent service modifications as a striking success for work-life balance. Weekend calls now are being covered by well-rested off-service fellows, freeing up those on the consult teams to get outside and enjoy time with their families and friends. Life does not stop during one's training, and neither should family and friendships be put on hold during the months on clinical service.

Meanwhile, the time spent away from the inpatient rotations remains as flexible as ever. We continue to provide protected time for our second-year fellows to attend meetings and present research findings at the ASN conference. Additionally, our institution's commitment to global health has allowed for Pooja Koolwal, MD, a first-year

fellow, to travel to Guatemala and contribute to our evolving understanding of Mesoamerican Nephropathy. The resulting research earned an award at a regional meeting.

As we head into the end of another year, we note that 60 percent of our graduating class is remaining at Washington University to pursue additional specialized training. Whether it is in transplantation, critical care nephrology, interventional nephrology, or other clinical or research area of their choosing, there is no shortage of opportunity when mapping out one's career path here to find how to best make a difference.

# **James Delmez Retires**

James Delmez, MD, has a great retirement plan. "Four big trips a year, that's the plan. Our plan," he adds, as he looks fondly at his wife, Katie. Delmez, the former medical director of the Chromalloy American Kidney Center and director of the peritoneal dialysis program, retired in January after having been a faculty member of the Division of Nephrology for 39 years — 44 years, if you count his time as a resident and fellow in the Division, too. "Well, actually, you can count even more than that because I also was born here in 1947," Delmez says with a smile.

His travel bucket list includes Israel, Scotland, and southern India. Also on his mind is potentially going on a biblical archeological dig. "It's still an adjustment to retire,"

he says. "I miss the daily routine, but I still see many colleagues so it's a matter of figuring out how to make the most of my day."

Delmez was drawn to nephrology in medical school at the University of Rochester. "It was challenging because you had to know both normal and abnormal physiology because the rules change for every system of the body when you develop kidney disease," he says. He followed his mentor and advisor, William Peck, MD, to Washington University, where Peck became chief of medicine and then dean of the School of Medicine. "The pathophysiology of bone disease and the handling of fluid and electrolytes was cutting edge at the time," recalls Delmez.

With dialysis guidelines in their infancy then, Delmez was part of several groundbreaking studies. "One of the earlier studies was when we asked all

dialysis units in the metro St. Louis area to measure BUN levels both pre- and post-dialysis. The standard at the time was to only measure before dialysis. We found, however, that 50 percent of patients had inadequate post-dialysis BUN levels. I was among the first to realize that nutrition and monitoring adequacy were imperatives."

He also conducted research into the pathophysiology of bone disease and the benefits of phosphorous control in dialysis patients. While leading one of the earliest programs in the country for peritoneal dialysis, Delmez also worked to better quantify the amount of dialysate needed and improve infection control.

"I've got four kids and eight grandkids, so I intend to keep busy," says Delmez. "I feel very fortunate to have worked with wonderful co-workers and



James Delmez, MD, retired in January after more than 40 years in the Division of Nephrology.



Dr. Delmez enjoys hiking while on a recent trip to Antarctica.

chiefs, but I've always felt it was easy to work the long hours in the Division if you felt like you were part of a greater good. That's what I'll remember."

# Alumni Connections

## L. Lee Hamm III, MD

Former Faculty, Division of Nephrology, 1982–92

L. Lee Hamm, MD, senior vice president and dean of Tulane University School of Medicine in New Orleans, believes the field of nephrology is on the cusp of some major shifts in the clinical care of patients with renal disease, particularly where it relates to chronic kidney disease, dialysis therapy and transplant care.

"Over the past 10 to 15 years, there have been incremental impacts and not necessarily dramatic clinical changes, but I think now nephrology investigators are beginning to turn that around and we're seeing things that will soon result in better patient care, like the discoveries of the roles of FGF-23, ApoL1, and antibodies to phospholipase A2 receptor," he says.

Prior to joining Tulane in 1992 as Chief of Nephrology and Hypertension, Hamm held faculty appointments in Washington University's Division of Nephrology and the Department of Cell Biology and Physiology for 10 years. He says his experiences here have helped to shape his academic

career in patient care, research, education and administration.

"What drew me to Washington
University for my first faculty position
was that it was known as a nephrology
powerhouse with prominent senior faculty
members and outstanding research opportunities," he says. "I had great institutional
role models that I wanted to emulate and,
because of them, I aspired to serve in leadership roles, which led me to Tulane. I've
been here for 25 years."

Interested in epithelial transport and acid-base homeostasis and its role in cell metabolism and function as a postdoctoral nephrology fellow at the University of Texas Health Sciences Center, Hamm saw that he could fill a missing niche in renal research at Washington University School of Medicine. "When I arrived, the division was primarily focused on mineral metabolism and there were giants in the field, notably Saulo Klahr, Eduardo Slatopolsky, Marcos Rothstein, Aubrey Morrison, James Delmez, Kevin Martin, Keith Hrsuka, David Windus, and George Shriner, some of who are still on faculty," he recalls. "Because I was interested in epithelial transport, I'd like to think I helped to round out the research program at that time. There was a fabulous group of faculty to work among as well as excellent fellows. All in all, it was a very



L. Lee Hamm III, MD

good atmosphere, both intellectually and on a personal level."

Hamm has authored more than 120 original articles and book chapters and is co-editor of a major reference book on acid-base and electrolyte disorders. During his tenure at Tulane, where he also served as associate chairman for research and chair of the Department of Medicine before becoming dean, he increased the number of renal faculty, added a transplant fellowship, and enhanced patient care by expanding the number of renal clinics and dialysis units. He maintains ongoing research collaborations with physician scientists who are working on the same fundamental issues he addressed while at Washington University, including studies of acid-base, citrate and ammonia transport.

"What's gratifying now as dean is being able to put into place leadership in various programs and departments and seeing them prosper in their academic mission," he says. "I see the institution as a whole and I believe that the lessons I learned both at Washington University and the University of Texas helped me to expand my vision for clinical, research and educational excellence."



# Program Spotlight

### **Third Nurse Practitioner Joins Division**

In the acute dialysis unit at Barnes-Jewish Hospital, Dennis Littleton, ANP, helps to manage more than a dozen patients with end stage renal disease (ESRD). An experienced ICU nurse and nurse practitioner, Littleton is on the frontlines for initial inpatient consultations and monitoring any potential emergencies. "He is a constant presence in the acute dialysis unit, which benefits patient care and, I believe, patient satisfaction," says Anitha Vijayan, MD, medical director of Acute Dialysis Services. "There is improvement in communications between the hospital and the dialysis unit, as well, with regards to discharge instructions in dry weight, medications and their overall dialysis prescription."

Littleton is one of three nurse practitioners in the Division. "We serve as an extension of a physician's role," explains Lisa Koester, ANP, CNN-NP, a member of the dialysis team. "They respect my

decisions and give me a tremendous degree of autonomy and, together, we work to ensure patient-centered care along with continuity of care for our patients."

A study of several hundred patients published in the Journal of the American Society of Nephrology found the use of renal nurse practitioners (NPs) and physician assistants (PAs) on renal teams lessened the decline of kidney function in patients with chronic kidney disease and improved overall outcomes.

Physician assistant Brittany Heady, PA-C, and renal nurse practitioner Helen Wijeweera, ANP, are members of the WU's renal transplant team, rotating through the inpatient service and outpatient clinic. "We perform ultrasound-guided renal biopsies or provide renal replacement therapy if indicated as well as manage patients who are readmitted for post-operative complications, infections, or acute kidney injuries," says Wijeweera.



Left to right: Dennis Littleton, ANP, Helen Wijeweera, ANP, Brittany Heady, PA-C and Lisa Koester, ANP,

In one memorable case, Heady helped to diagnose adenovirus nephropathy in a transplant patient. She says, "Because of that, we were able to successfully treat and prolong the life of his transplant."

Koester, whose role in dialysis has evolved to encompass outcomes management, quality assurance and staff education in addition to patient care, sees the impact of her contributions almost daily. "One patient was scared about going on home dialysis, but she did it," she says. "She later told me how impactful I was in helping her to make that decision. She told me it was life-changing."

# 2016 ASN Highlights

Washington University's Division of Nephrology was well represented at the annual ASN meeting in Chicago last November, which had the distinction of being the 50th anniversary of the ASN. In honor of that, special recognition was given to all award recipients from the last half-century. Among those honored were Eduardo Slatopolsky, MD, who received the Belding H. Scribner Award in 1999, and Jeffrey Miner, PhD, who, in 2004, was the first PhD-only researcher to be honored with a Young Investigator Award.

Division Chief Benjamin Humphreys, MD, PhD, delivered the prestigious Barry M. Brenner, MD, Endowed Lectureship. He spoke on Fibrotic Changes Mediating AKI to CKD Transition.

Timothy Yau, MD, received the ASN's Nathan Hellman Social Media



Eduardo Slatopolsky and Jytte Olgaard



Motoko Yanagita and Yoichiro Ikeda



and colleague

Innovation of the Year Award for his Washington University Nephrology Web Series on YouTube. The video series continues to generate a large and dedicated group of followers. Yau, who has embraced social media as a way to educate the next generation of nephrologists, previously received the ASN's Innovation in Kidney Education Award and a NephJC Kidney Award from the Renal Fellow Network. In January, he was appointed as the Social Media Editor for the *American Journal for Kidney* Diseases and will develop and edit

content for the AJKD's blog site (ajkdblog.org) and its Facebook and Twitter pages.

All totaled, WU physicians and scientists were invited to present 26 lectures, posters and podcasts as well as moderated town halls and panels. Thanks to all of you who visited with us at our ASN Alumni & Friends Reception. We look forward to seeing you at the ASN annual meeting this fall in New Orleans!

# Research Highlights

"Research is formalized curiosity. It is poking and prying with a purpose." Zora Neale Hurston

# NIH Grant To Study Treatment Options for Kidney Fibrosis

Andreas Herrlich, MD, PhD, was awarded a five year, \$1.125 million grant from the National Institutes of Health to fund his research project titled, *The Role of Adam17 Substrates in Progressive Kidney Disease*. Dr. Herrlich will be looking at kidney fibrosis in CKD patients, a common kidney

disease with extremely high morbidity and mortality. "To date only blood pressure control has been shown to slow progression of CKD. We hope that our studies will expand treatment options by defining the first kidney-specific therapeutic targets that might slow progression of this disease," says Herrlich.

#### **Young Investigators Receive Grants**

Hani Suleiman, MD, PhD, has received two grants to extend research with his super-resolution imaging technique to study podocytes. The first, a NEPTUNE Career Development Fellowship to study Sarcomere-Like Structures as an Indicator for Podocyte Injury in Nephrotic Syndrome, will focus on developing a new novel diagnostic tool to identify proteinuric glomerular disease. The Division of Nephrology is the only repeat NEPTUNE winner, with Maggie Chen, MD, PhD, receiving the award in 2015. Suleiman also received an American Heart Association AWRP Summer 2016 Scientist Development grant. The AHA grant, which is given to promising scientists as they transition from research training to becoming independent researchers, will allow Suleiman to focus on using super-resolution imaging to better understand how podocytes work so that better therapies can be identified.

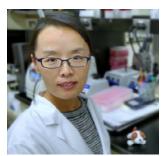
Receiving a second American Heart Association AWRP Summer 2016 Scientist Development grant is **Yong-Feng Gong**, **PhD**. She will use her grant to investigate how chloride metabolism by the kidney contributes to blood pressure regulation. Understanding chloride transport is significant in understanding hypertension, heart failure and stroke.







Hani Suleiman, MD, PhD



Yong-Feng Gong, PhD

# 2017 Translational Innovation and Micro Grants Awarded

For the second year in a row, the Division of Nephrology has awarded grants to fund innovative research efforts of faculty and staff.

Seth Goldberg, MD, and Moe
Mahjoub, PhD, received a Translational
Innovation Grant, which funds collaborative research efforts between basic scientists and clinical investigators. Their proposal,
Midbody Accumulation and Secretion in
Polycystic Kidney Disease, will look at how defects in the cell cytoskeleton contribute to polycystic kidney disease (PKD).
Lai Kuan Dionne, PhD, a postdoctoral fellow in the Mahjoub laboratory, will perform the study.

Three teams were awarded microgrants to focus on ways to improve care and enhance the lives of patients seen in the Division's clinics and dialysis centers.

Patty Anderson, RN, Lori Gawat-Abuelo, RN and George Jarad, MD, will focus on medication adherence. Every month, up to seven dialysis patients are admitted to the hospital due to non-adherence complications such as fluid overload, hypertension and hyperkalemia. The team will use laptops, medication organizers and measuring bottles to help patients follow their medications and keep sodium intake low to avoid fluid overload as well as monitor potassium levels, with a goal of reducing hospital admissions.

Connie Mayo, RN, Michelle Bloom, RN, Lois Seibel, RN, Cheryl Land, RN, and Will Ross, MD, will use their grant to assist low-income patients by providing them with educational materials, digital home blood pressure monitors and medication planners to improve compliance.

The third team is working on a website and communications around clinical studies. The team is made up of

Jean Audrain, RN, Rebecca Cusanelli, RN, Sue Dombek, RN, Brittany Heady, PA, Joanne Lauber, RN, Helen Wijeweera, NP, Daniel Brennan, MD, Daniel Coyne, MD, and Rowena Delos Santos, MD.



# Faculty News and Awards

#### **Physicians Win Prestigious Medical Book Award**

The British Medical Association (BMA) awarded one of its top honors — First Prize in Medical Books — to Sanjay Jain, MD, PhD, associate professor in the Division of Nephrology and his colleague, renal pathologist Joseph Gaut, MD, PhD. The two collaborated and are co-authors of Diagnostic Pathology: Kidney Diseases, 2nd Edition. More than 600 textbooks were submitted for recognition in multiple categories, with the BMA honoring 20 with First Prize recognition.

"In this second edition, every chapter was revised and 40 new chapters were added that cover major pathological, clinical and genetic information for more than 240 diagnoses," says Jain, who also is director of the Kidney Translational Research Core (KTRC). "In particular, we included major advances that have occurred since the first edition, such as newly recognized immunological and genetic diseases, classification of MPGN/complement-related diseases, lupus nephritis, transplant pathology and the latest technology in genomic medicine."

The book contains more than 3,500 illustrations depicting common and rare kidney diseases. Jain notes that because the design of the book is progressive with a focus on incorporating clinical presentation, molecular mechanisms, laboratory



Left: Sanjay Jain, MD, PhD, Associate Professor of Medicine; right: Joseph P. Gaut, MD, PhD, Assistant Professor of Pathology & Immunology

studies, pathogenesis and differential diagnoses, it better prepares readers for more informed pathological diagnosis. Diagnostic Pathology: Kidney Diseases (Elsevier 2015, ISBN: 9780323377072) is presented as part of Elsevier's highly regarded Diagnostic Pathology series.

### **National Appointments for Two Faculty**

Two faculty members in the Division of Nephrology were recently named to national work groups to enhance dialysis care and safety of blood, blood products, organs and tissue.

Anitha Vijayan, MD, Professor of **Medicine**, co-chairs one of four work groups of the Nephrologists Transforming Dialysis Safety Project (NTDS), a collaborative project between the Centers for Disease Control and Prevention and the American Society of Nephrology that is focused on ways to eliminate infections in dialysis facilities over the next three years. An estimated

10 percent of all patients diagnosed with end stage renal disease die after developing an infection. Vijayan and her colleagues will create educational programs and webinars that showcase infection prevention as well as initiate a nationwide contest to develop better tools for early detection and treatment of infections in dialysis units.

Daniel Brennan, MD, Alan A. and Edith L. Wolff Professor of Renal Diseases. was appointed to the Advisory Committee on Blood and Tissue Safety and Availability, a federal advisory committee for the Department of Health and Human Services that focuses on a broad range of policy issues related to the safety of blood, blood

stem cells, organs and tissues. They include identification and review of the medical, public health, ethical, economic, and legal issues related to blood transfusion, organ and tissue transplantation, and the availability and use of stem cells and other blood products.



Dan Brennan, MD, and Anitha Vijayan, MD



#### **Connie Mayo** Named **Star Performer**

Connie Mayo, RN, CNN, clinical nurse coordinator, was named a STAR Performer — Some-

one who Took an Active Role — by the Washington University Faculty Practice Plan. The STAR Performer award recognizes clinical staff who provide exceptional, compassionate care to patients and families. Mayo has been at Washington University

Medical Center since 1983, first as a dialysis nurse in the Chromalloy Kidney Center and then at St. Louis Children's Hospital. She rose to become Risk Management

Connie Mayo, RN, CNN, is all smiles and celebrates with her colleagues after being named a Washington University School of Medicine STAR Performer.

Coordinator and then a WU Nursing Administrator before returning to direct patient care, becoming a certified nephrology nurse and clinical nurse coordinator.



## **High Five!**

The Division of Nephrology's Fellowship Training Program is five for five!

With five open spots in its fellowship programs, the Division filled all positions during Match Day. The five come from as far away as Florida, Wisconsin and Texas in addition to St. Louis.

"Seth Goldberg (associate program director) and I were sitting in my office clicking refresh on my email inbox over and over for 20 minutes waiting to see the results," says **Steven Cheng, MD,** director of the Nephrology Fellowship Program. "We did extremely well in recruitment and we attribute that to the depth and breadth of our program, the expertise of faculty and the collegial environment that we have here."

Match Day for renal fellowships is extremely competitive for training programs nationwide because typically there are more open fellowship slots than there are renal fellows to fill them. "We always tell prospective fellows about the unique opportunities that we have, including an incredibly diverse array of patients and an abundance of clinical and research opportunities that can be tailored to individual interests," Cheng says. "But the number one selling point for us and the reason we do so well is that candidates immediately notice something when they visit

with us. They see that our faculty is wholly invested in teaching, easy to work with, and tremendously smart in their respective fields. There also is a strong sense of camaraderie, which fosters strong collaboration and support among faculty



Nephrology Fellowship Program Director Steven Cheng, MD, is all smiles with his team after a successful Match Day!

and trainees. We really work together like a family."

WU's Division of Nephrology offers both Nephrology Fellowship and Nephrology Transplant Fellowship programs. The new fellows begin their training this July.

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