

# Medicine Matters

SEPTEMBER 2019

NEWS FROM THE UVA DEPARTMENT OF MEDICINE



DEPARTMENT OF MEDICINE

## MISSION

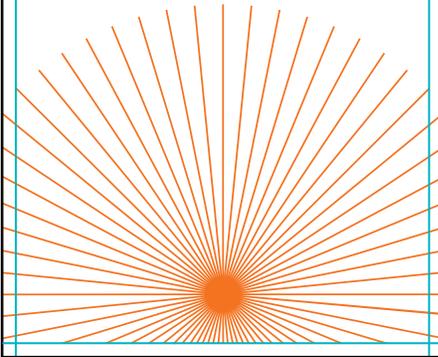
We are dedicated to preventing disease and treating illness, educating and inspiring future leaders in the field of internal medicine, and supporting innovative biomedical research.

## VALUES

We strive for a sense of community, connection, and synergy among all faculty, staff, and trainees.

## PLEDGE

We will conform to the highest ethical standards, uphold the values of our partner organizations, and give back to our community through public service.



SUBSCRIBE

GIVE TO DOM

## MESSAGE FROM THE CHAIR

### QUICK LINKS

[DoM WEBSITE](#)

[DoM CALENDAR](#)

[GRAND ROUNDS](#)

[HIGHLIGHTED DIVISION](#)

[HOOS WELL](#)

[MINDFULNESS MATTERS](#)



Welcome back from summer! As the new academic year gets going in full swing, this month's Medicine Matters highlights the Division of Nephrology. Of course, I must admit a certain deep fondness for this Division given that it is my home away from home. As you will see, the Division is a world leader in education, clinical care and research and under the leadership of Dr Mark Okusa (and Dr Kline Bolton before him) the Division has flourished. Most recently, we have welcomed many new faculty, some of whom are profiled here. The kidney transplant program has seen exponential growth under Dr Alden Doyle and is well positioned to be the leading program in the mid-Atlantic. Research in the Division has also grown significantly as shown by growth in extramural funding, high impact publications and international collaborations. This month's Medicine Matters continues to celebrate our collective achievements and I hope you will enjoy reading the newsletter.

Lastly, in early September, I will give a short "state of the Department" presentation to highlight several of our year-end achievements. This will occur at the beginning of Medicine Grand Rounds....stay tuned for the date and time.

Mitchell H. Rosner, MD, MACP  
Henry B. Mulholland Professor of Medicine  
Chair, Department of Medicine

## DOM FINANCIAL TIPS



 New electronic form available in ResearchUVA is the eSPAR. It can be found in the Start section. It is being used to submit requests for creating new at-risk projects, requesting no-cost extensions, and at-risk no-cost extensions.

 Remember to complete your monthly recons in Recon@ before the end of the month.



### MEN'S 4 MILER OFFERS BEFORE RACE TRAINING

The Bill Steers Men's 4 Miler will take place on Saturday, October 5, 2019. The race will start and finish at Scott Stadium this year. More information about the race and registration can be found at: <https://runsignup.com/mens4miler>

In preparation for the race, a training program will be offered from Saturday, August 17, 2019 – Saturday, September 28, 2019. More information about the training program can be found in the attached flyer and at the following link: <https://runsignup.com/Race/VA/Charlottesville/M4MTP>

If you have any questions about the training program or the race, please contact Carley Chandler at [CC7ZJ@hscmail.mcc.virginia.edu](mailto:CC7ZJ@hscmail.mcc.virginia.edu)

## DOM PUBLICATIONS



William Horton, MD, FACP

Gregory Hong, MD



Jeanette Owusu, MD

Stacey Burgess, PhD



Patrick Dillon, MD

Paul Katzenstein, MD



**Dr William Horton and Dr Gregory Hong:** Article Citation in the *American Association of Clinical Endocrinologists* [AACE]: William B. Horton and Gregory K. Hong (2019) VISUAL VIGNETTE. *Endocrine Practice*; May 2019, Vol. 25, No. 5, pp. 507-507. See link: <https://doi.org/10.4158/EP-2018-043> / <https://journals.aace.com/doi/abs/10.4158/EP-2018-0439>

2nd Year Endocrine Fellow, **Jeanette Owusu, MD** – recent published article: Jeanette Owusu -- Owusu JE, et al. “*Cognition and Vitamin D in Older African-American Women - Physical performance and Osteoporosis prevention with vitamin D in older African Americans Trial and Dementia.*” *J Am Geriatr Soc* 2019;67:81-86

**Stacey Burgess, PhD:** published a paper in *PLOS Neglected Tropical Diseases*, July 2019 - “Intestinal parasitic infection alters bone marrow derived dendritic cell inflammatory cytokine production in response to bacterial endotoxin in a diet-dependent manner” [<https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0007515>]

**Patrick Dillon, MD:** “*Cases and evidence for panel testing in cancer genetics: Is site-specific testing dead?*” Thomas MH, Higgs LK, Modesitt SC, Schroen AT, Ring KL, Dillon Patrick. *J Genet Couns.* 2019 Jun;28(3):700-707. doi: 10.1002/jgc4.1044. Epub 2019 Feb 1. PMID: 30706980

**Patrick Dillon, MD:** “*Open-Label Clinical Trial of Niraparib Combined With Pembrolizumab for Treatment of Advanced or Metastatic Triple-Negative Breast Cancer*” - Vinayak S, Tolaney SM, Schwartzberg L, Mita M, McCann G, Tan AR, Wahner-Hendrickson AE, Forero A, Anders C, Wulf GM, Dillon Patrick, Lynce F, Zarwan C, Erban JK, Zhou Y, Buerstatte N, Graham JR, Arora S, Dezube BJ, Telli ML. *JAMA Oncol.* 2019 Jun 13. doi: 10.1001/jamaoncol.2019.1029. [Epub ahead of print]

**Paul Katzenstein, MD:** “*Tofacitinib in Combination With Methotrexate in Patients With Rheumatoid Arthritis: Clinical Efficacy, Radiographic, and Safety Outcomes From a Twenty-Four-Month, Phase III Study.*” PMID:30666826 PMCID:pmc6593705

# DOM UPDATES & NOTES



William (Ben) Horton, MD



Silas Culver, MD



Girija Ramakrishnan



Mami Taniuchi, PhD



Fred Hayden, MD



Tania Thomas, MD



Becca Dillingham, MD



Danielle Moore, MD



Jeanetta Frye, MD

Please join the Division of Endocrinology and Metabolism in welcoming their two newest faculty members:

**William Benjamin (Ben) Horton, MD, Assistant Professor of Medicine**, effective July 1 2019. Ben received his MD from the University of Mississippi School of Medicine. He completed his Internal Medicine residency in 2016 at the University of Mississippi Medical Center and will be graduating from our endocrinology fellowship program on June 30, 2019. He developed a strong academic interest on diabetes and insulin action under the mentorship of Eugene J. Barrett, MD, PhD during his fellowship training. He proved himself as a star trainee by successfully obtaining an NRSA, along with multiple publications. Given his high potential for academic success, he was recently selected as a 2019 integrated Translational Health Research Institute of Virginia (iTHRIV) scholar, a pan-University mentored career development award. Ben will focus his effort on developing an independent clinical research program on diabetes and insulin action.

**Silas Culver, MD, Assistant Professor of Medicine**, effective July 1, 2019. Silas received his MD from the University of Michigan Medical School and completed his medicine residency in 2014 and endocrinology fellowship in 2017, both here at the University of Virginia. He developed a very promising basic science research program on hypertension, under the mentorship of Helmy Siragy, MD, during his fellowship training and in the past two years as F32 Research Fellow. He has proved himself as a highly inspiring clinician investigator and been recently selected as a 2019 integrated Translational Health Research Institute of Virginia (iTHRIV) scholar, a pan-University mentored career development award. Silas will focus his effort on developing an independent academic program on obesity related hypertension.

Congratulations to **William B. Horton, MD**, who was recently named to the *American Association of Clinical Endocrinologists* (AACE) Diabetes Disease-State Network. See link for details about the AACE: <https://www.aace.com/about/about-american-association-clinical-endocrinologists>

Congratulations to **Girija Ramakrishnan, PhD**, in the Division Infectious Disease, on being granted the Henry Rose Carter Research Award towards her project “Phosphatidylcholine-associated fatty acids in neurocognitive development of children.” The project will run for one year, from July 1, 2019 through June 30, 2020.

Congratulations to **Mami Taniuchi, PhD** who received notice of an award from the Bill and Melinda Gates Foundation. This is a supplement to the Division of Infectious Disease’s ongoing OPP119124 TaqMan Array Card method for polio environmental surveillance project. The group is going to design a new TAC card for environmental surveillance to validate with samples from two field sites, Coimbatore and Tiruchirappalli, in India. It is new funding from the WASH group at BMGF and they will be working with Jill Stewart from UNC Chapel Hill.

Congratulations to **Fred Hayden, MD**, who was awarded the *Lifetime Achievement Award from ISIRV* (International Society for Influenza and other Respiratory Virus Diseases)

Congratulations to **Tania Thomas, MD** who received funding for the R01 submitted through Baylor “PK/PD optimized cephalosporins based treatment regimen for children with MDR-TB”, PI Shashikant Srivastava

Congratulations to **Becca Dillingham, MD** who has been awarded a new \$350,000, one year (with option for renewal) contract with VDH to support work developing and implementing a telemedicine hub and spoke model of HCV care that prioritizes treatment of people who use drugs, especially in South West Virginia.

Congratulations to the **Division of Gastroenterology** on being ranked 35th in *U.S. News and World Report - Best Hospitals for Gastroenterology and GI Surgery*.

The **Division of Gastroenterology** was awarded the 2019 “Best Community Service Delivery” *SCOPY Award* which is given by the American College of Gastroenterology for their “*UVA Colorectal Cancer Awareness Month Campaign*” entry.

Congratulations to **Danielle Moore, MD** who was presented with the “*Fellows-in-Training Award*” and “*Presidential Poster Award*” for her ACG abstract “*Given the Offer of GI EConsultation, PCPs Decline: A Prospective Study*”

**Jeanetta Frye, MD** attended the American Gastroenterological Association (AGA) Freston Conference in Chicago, August 9 and 10th.

# DOM UPDATES & NOTES

## FELLOWSHIP NEWS



**Charity Kwamanakweenda, MD**

graduated the fellowship program in June and secured a faculty position at University of Pittsburgh.



**Nyrene Haque, MD**

graduated the fellowship program in June and secured a faculty position at Ochsner Medical Center, New Orleans.

## FAMILY NEWS



Congratulations to **Tri Le, MD** and wife **Sunny Chiao, MD** on the birth of their daughter, River Tao Le. She was born on Wednesday, June 19, 2019, weighing 7lbs 0.5oz 19 inches long.

**GET  
READY  
TO CHOOSE  
YOUR  
BENEFITS**

**Open Enrollment starts on October 7**—that's just over a month away. Now is the perfect time to start preparing for your benefits needs in 2020. Did an unexpected medical event this year make you rethink your needs? Maybe there's a different healthcare, dental, or vision plan worth considering. Whatever your needs are, there's a lot that that can be done right now to prioritize wellness in 2020.

# DOM PROFILE

## ERIN ARNOLD - Medical Education Coordinator/Internal Medicine Residency Program



*What brought you to Charlottesville?*

Originally I came to Charlottesville to go to UVA for college. I had fallen in love with the traditions and surrounding Blue Ridge mountains. After college, I went to Indiana University for grad school to study linguistics, and while I loved my time there, Charlottesville had won my heart, and I couldn't wait to get back.

*What excites you about your work?*

I am most excited about the people I get to work with. I have the best coworkers in the world. I'm also very excited about efforts to support diversity of all kinds in the residency program, and I love when I get the chance to work on a project to help to further that aim.

*Next life?*

In my next life, I would love to fight for the rights of others and/or be a speech language pathologist.

*What are you usually doing on the weekend?*

I work a second job at Iron Paffles & Coffee right now (you should come visit!) But when I don't, I'm usually hiking or painting with

my fiancé, dog, and cat.

*How did you meet your partner?*

Like any good millennials, my amazing partner, Josh, and I met online. We talked for a few months before we were ever able to meet in person, but we immediately clicked!

*What's one thing you always have in your fridge?*

Something that's always in my fridge is Diet Dr. Pepper. It is my vice.

*Favorite vacation/activity spot?*

My favorite vacation spot of all time is Edinburgh, Scotland. It is absolutely magical. A bit closer to home, I loved my recent trip to Old Town Alexandria. Like Charlottesville, it gives off small-town vibes, but has a lot to do and see!

*What is a talent or skill that you don't have that you wish you did?*

I wish that I could hear a song and know how to play it. My fiancé is an amazing musician, and his ability to do this constantly amazes me, and it just seems like a really fun thing to be able to do.

*Favorite fictional characters?*

My favorite fictional characters are Leslie Knope (from Parks & Rec), Hermione Granger (from Harry Potter), and Indiana Jones.

*If you could go back in time, what year would you travel to?*

If I could go back in time, I'd probably go back to France and the Iberian Peninsula in 800, or maybe a few years later. I was very interested in the language reforms that Charlemagne instituted, and I would love to go see them in person!



*What is the last book you read for pleasure?*

The last book I read for pleasure was *The Book of Esther*, by Emily Barton. It's an alternative history/steam-punk/magical amalgamation, and it's really captivating. The

last book I listened to for pleasure (I love audiobooks) was *The Weight of Ink* by Rachel Kadish. This book centers on multiple stories -- a girl in 1600's London, a woman in 1950 Israel, and a man and woman in the present day -- and how they all fit together. It's incredible.

*What was your first job, how old were you?*

My very first job was as a petsitter, then a soccer referee, but my first "real job" was inputting periodicals that came into Alderman Library. I was 19 and a first year at UVA when I got that job.



# SPOTLIGHT - DIVISION OF NEPHROLOGY

## MESSAGE FROM MARK OKUSA, MD - DIVISION CHIEF, NEPHROLOGY/CIIR



The Division of Nephrology and Center for Immunity, Inflammation and Regenerative Medicine (CIIR) led by Mark D. Okusa, MD, John C. Buchanan Distinguished Professor, are nationally recognized for excellence in patient care, education and research. The Divisions of Nephrology/CIIR consists of 36 full time faculty with primary appointments in the Division and one Professor Emeritus: 24 MD/DO, two MD/PhD, and eight PhD. There are a number of postdoctoral fellows/graduate students in the Division/CIIR and additional scientists and undergraduate and medical students.

We have recruited five new faculty members to the Division starting this fall who are highlighted in the “New Faculty Spotlight” section.

This past year was notable for award winning educators and clinicians, new NIH Grants, and numerous faculty members in leadership positions. We celebrate the many accomplishments of nephrology faculty and are grateful to the patients for whom they care.

~ Mark D. Okusa, MD



## DIVISION OF NEPHROLOGY - CLINICAL UPDATES

The Division of Nephrology continues to expand clinically; over the past five years there has been a 20% growth that covers a wide range of services including: general nephrology such as fluid and electrolyte disturbances, glomerular diseases, dialysis, apheresis, onconeurology, polycystic kidney disease, nephrolithiasis to name a few.

**Dialysis Program:** The Division along with the Medical Center provides care for close to 950 patients in eleven dialysis units of the UVA Health System Dialysis Program, considered one of the largest academic dialysis programs in the country. Each UVA dialysis facility has received five Diamond Status (highest rating for patient safety) since 2011. The newest dialysis units are located in Appomattox, Farmville, and Staunton.

**Transplant Program:** The transplant program has experienced remarkable growth over the last three years, with 159 kidney and pancreas transplants performed for the 2019 fiscal year and is slated for 199 such transplants for the calendar year. Results have remained excellent, with better than expected patient and allograft survival for each of the recent reporting periods. An 8th transplant nephrologist has been recruited (new Faculty Spotlight) to join the faculty to help support this mission. For the last four months, we have been utilizing hepatitis C exposed donors (NAT+ and Ab+) for hepatitis C-naïve recipients with great success, with ~20 additional kidney and pancreas transplants performed safely. We continue to be one of the few centers in the country to utilize robotic surgery for living donors and for obese recipients, with no upper limit in BMI. We have an active clinical research program participating in large multi-center grants as well as supporting a number of investigator initiated projects in areas such as post-transplant diabetes, hepatitis C, delayed graft function, transplant evaluation, and transplant dermatology.

**Culpeper Initiative:** We currently operate an acute HD facility at Culpeper hospital and are in the process of establishing a CKD Clinic within an existing UPG Culpeper facility as well as a new 8-station UVA Dialysis facility on the Culpeper Regional Hospital (CMC) campus. This new eight station unit will be up and running by July 1, 2020.

**Acute Hemodialysis and Apheresis Units:** Kambiz Kalantari, MD has assumed the medical directorship of the Acute Hemodialysis Unit. In 2018 we performed a total of 7,311 extracorporeal therapies. These procedures included 4,193 intermittent hemodialysis, 1,622 continuous renal replacement therapies and 677 therapeutic apheresis treatments. Beginning October 2019 we will have a state of the art CRRT machines capable of performing several different modalities of extracorporeal therapies. Rasheed Balogun, MBBS is the medical director of the Apheresis Unit. Services are expanding providing apheresis for neurological disorders, transplantation and immunological disorders, and hematological disorders.

**Onconeurology Clinic:** The UVA Onco-Nephrology Clinic under the Director, Amanda Renaghan, MD, at the Emily Couric Clinical Cancer Center was founded in 2017. The providers in this clinic (Dr Renaghan and Kelly Phillips, RN) care for cancer patients with kidney and electrolyte disorders. Over the past year, the providers completed a total of 144 visits (51 initial, 93 follow-up) for 77 patients. Future plans include the development of a comprehensive Onco-Nephrology curriculum for fellows and expanding clinical services.

**The Division continues to operate Chronic Kidney Disease Clinics** at several locations outside of UVA, including Orange, Augusta Hospital, Pantops, and Zion Crossroads; polycystic kidney disease clinic and kidney stone clinic.

**Transitional Start Unit:** The Transitional Start Unit (TSU) program at UVA provides an innovative model of education and a gentle 4-6 week break-in period for those initiating dialysis unexpectedly. The first unit opened in February 2017 in Charlottesville and a second unit opened in June 2018 in Lynchburg, Virginia. To date, nearly 90 patients have completed the comprehensive educational program designed to learn the basics of end stage kidney disease self-management and dialysis modality options. An average of ~ 30% of patients select a home dialysis modality after completing the program – a 3-4 fold increase from prior. The patient navigation component has led to improvements in several quality markers including access placement times and transplant referrals. In addition, the TSU has effectively eliminated volume overload admissions during the program period. Given the success of the program, UVA has become a national leader in transitional dialysis care and is often consulted by outside providers when initiating their own transitional units. The program design and operation is a collaborative effort between the home dialysis team, in-center staff and transplant and is under the medical directorship of Dr Emaad Abdel-Rahman in Charlottesville and Dr Subhasish Bose in Lynchburg, Virginia.





Peter Lobo and Kailo Schlegel

## ACTIVE STUDIES FOR NCRC

Microparticles in Patients with Essential Hypertension, Resistant Hypertension, Renovascular Hypertension, Hypertension due to Fibromuscular Dysplasia, Primary Hyperaldosteronism and Healthy Patients without Hypertension. PI: **Uta Erdbrügger**.

Collecting IgM from Healthy Human Umbilical Cord Blood. PI: **Peter Lobo**.

Patient Survival and Treatment Survival for Intensive Home Hemodialysis (IHHD) Patients Compared to Kidney Transplant Recipients: Retrospective Cohort Study from October 1, 1997 to December 31, 2014. PI: **Angie Nishio-Lucar**.

Predicting Excess Immunosuppression by Lymphocyte and IgG Levels for Kidney Transplant Recipients. PI: **Peter Lobo**.

A Double-Blind Randomized Parallel Group Study of the Efficacy and Safety of Tesevatinib in Subjects with Autosomal Dominant Polycystic Kidney Disease. PI: **Mitchell Rosner**.

Circulating Exosomes from Kidney Trigger Heart Failure in Patients with Chronic Kidney Disease. PI: **Uta Erdbrügger**.

Cardiovascular Monitoring with CareTaker© During Hemodialysis: Comparison to Conventional Sphygmomanometry. PI: **Amanda Renaghan**.

Peritoneal Dialysis Outcomes and Practice Patterns Study, 2017 to 2020 (PDOPPS2). PI: **Sana Khan**.

Novel Biomarkers in Dialysis Vascular Access Failure. PI: **Uta Erdbrügger**.

Circulating Exosomes from Kidney Trigger Heart failure in Patients with Chronic Kidney Disease. PI: **Uta Erdbrügger**.

Immune-Related Adverse Events in Patients with Malignancy. PI: **Amanda Renaghan**.

Transformative Research in DiabEtic NephropaThy (TRIDENT). PI: **Julia Scialla** (This study anticipates enrolling in Fall/Winter 2019) – (Contract pending)

A Phase 3 Trial of the Efficacy and Safety of Bardoxolone Methyl in Patients with Autosomal Dominant Polycystic Kidney Disease (FALCON) PI: **Sana Khan** (This study will be enrolling Fall 2019)

Immune-Related Adverse Events in Patients with Malignancy. PI: **Amanda Renaghan**.

Clinical Evaluation of the HemoCare™ Hemodialysis System for home Nocturnal Hemodialysis. PI: **Emaad Abdel-Rahman**. (This study will be enrolling Fall 2019)

MURDOCK Kidney Health Pilot: Diet, Microbiota, and Prevention of Chronic Kidney Disease. PI: **Julia Scialla**. Currently enrolling at external site. (Contract pending/signature in process)

## RESEARCH INTERESTS



Rahul Sharma and Vikram Sabapathy

### *Rahul Sharma, MS, PhD, Associate Professor*



The long-term goal of Dr Sharma's research is to identify and produce novel therapeutic agents that have the potential of translation from bench to bedside. His major interest lies in autoimmune and inflammatory diseases with specific focus on the regulatory T-cells, which is a specialized helper-T cell subset that prevents abnormal activation of the immune system. His laboratory is exploring the role of alarmins and stress-related molecules in the biology of regulatory T-cells. The broad hypothesis is that acute stress signals, which induce activation of inflammatory cells for clearance of danger and pathogenic signals, can be exploited to promote regulatory T-cells activation for therapy of inflammatory disorders. Dr Sharma's group is invested in identifying the environmental/microenvironmental insults that may trigger an autoimmune reaction. His lab has generated a novel proprietary compound that has shown remarkable efficacy in the therapy of several inflammatory conditions including type 1 and type 2 diabetes, diabetic kidney diseases, lupus nephritis, acute kidney injury (which affects a quarter of all ICU patients). This therapeutic compound not only inhibits inflammation, but also starts a regeneration program in kidneys.

### *Julia J. Scialla, MD, MHS, Associate Professor*



Dr Scialla's prior and ongoing work focuses in several key areas: 1) physiology in CKD, including acid-base homeostasis and mineral metabolism as risk-promoting pathways; 2) public health and disease prevention, including studies on dietary patterns, obesity, and socioeconomic factors in CKD risk; and 3) outcomes research in CKD and ESRD, including pharmacoepidemiologic and other comparative effectiveness designs. In patient oriented studies, her professional team at the Nephrology Clinical Research Center possesses a portfolio of interventional and observational clinical studies. In their outcome and public health studies, they work regularly with biostatisticians, bioinformaticists and data scientists to harness the power of 'big data', including studies of metabolomics, microbiome, and electronic health record data. Her current R01 utilizes electronic health records from a national dialysis provider linked to administrative claims through the United States Renal Data System (USRDS) registry to evaluate comparative effects of different mineral metabolism treatment strategies.

## RESEARCH INTERESTS

*Sho Morioka, PhD, Assistant Professor*



Dr Morioka's main research focus is establishing a way to ameliorate acute kidney injury (AKI). Phagocytosis of dying cells or "efferocytosis" is triggered during AKI and that defects in this process lead to exacerbation of the pathology. Dr Morioka established a novel way to facilitate apoptotic cell clearance by modifying one of the phagocytic receptors to be more active and have applied this to generate a unique mouse model system. This approach will provide proof of principle that enhancing efferocytosis as an approach to enhance rapid resolution and prevention of chronic progressive fibrosis.

Dr Morioka's research suggests that expression of this phagocytic receptor enhances efferocytosis in macrophages and human proximal tubular epithelial cells. With this unique tool, Dr Morioka is addressing: 1) the effect of boosting efferocytosis on AKI by using bilateral ischemia reperfusion (IRI) model, 2) identifying the cell type(s) in which enhancing apoptotic cell removal affects kidney injuries.

*Brendan Bowman, MD, Associate Professor*



Dr Bowman conducts research with Donald Brown PhD, founding Director of the Data Sciences Institute and co-Principal Investigator on two major areas that use machine learning in optimizing drug dosing in patients with kidney disease. He uses machine learning techniques to optimize etelcalcetide dosing in ESRD. In another study he is the PI on an analysis that uses machine learning to optimizing anemia management leveraging the HER data in a predictive drug dosing algorithm. Lastly, Dr Bowman is the PI on a soon to open trial of a novel educational intervention to improve clinical outcomes for high-risk incident dialysis patients.

*Uta Erdbrügger, MD, Associate Professor*



The Erdbrügger Lab is interested in studying the role of extracellular vesicles (EVs) as novel biomarkers and bio-activators in kidney disease and high blood pressure. EVs are a very heterogeneous group of small vesicles which can be derive from all cells in the body either by secretion or blebbing of cell membranes. EVs carry markers of the parent cell. These properties permit detection of specific subpopulations, such as leukocyte-derived, endothelial or kidney derived EVs. EVs are emerging as novel communicators in health and disease as they carry protein, lipids and nucleic acid that can

regulate function. Because of their small size (submicron) and heterogeneous nature our second focus of research is optimization of EV isolation and characterization.



***E***stablishment of ***NCRC Biorepository, Biomarker-Bioanalysis Core, and Small Animal Microsurgery Core***, under the direction of Jitendra Gautam, Assistant Professor and Director, Nephrology/CIIR Research Core. Dedicated laboratory space has now been fully renovated and fully equipped to begin carrying out the objectives of these facilities. The cores will operate to support members of the R25 by facilitating collection, barcoding and storage of biopsy and other tissue specimens. Analytical studies will be performed including ELISA assays for biomarkers, Elispot assay, DNA, RNA isolation, immunohistochemistry, and other assays. Surgical Core offers support for ischemia-reperfusion, nephrectomy, real time GFR measurements.



# DIVISION OF NEPHROLOGY - RESEARCH

Investigators focus on diverse types of kidney diseases including but not limited to: mechanisms of acute kidney injury, renal transplantation, acute and chronic kidney disease, lupus nephritis, diabetic neuropathy, type 1 diabetes, extracellular vesicles in vascular disease and hypertension, hypertension, kidney disease in the elderly, home nocturnal hemodialysis and clinical research with new and clinically relevant agents and devices. Funding continues to remain strong with support per year over \$5M in 2019 and \$24M over the past five years. This includes NIH R01, K awards, and a T32 training grant.

- Nabin Poudel received an American Society of Nephrology Ben Lipps Fellowship Grant for 2 years
- Sabrina La Salvia, PhD, a postdoctoral fellow, American Heart Association Postdoctoral Fellowship beginning summer 2019 for 2 years
- Tushar Chopra received an American Society of Nephrology William and Sandra Bennett Scholars Award for 2 years
- Mike Brown, received 2 awards: R21AI141943, TNFRSF Genetics Related to NK Cell Control of MCMV and an R01 AI050072 Molecular Study Mouse Virus Resistance Mechanisms
- Rahul Sharma, PhD was awarded the research grant, “Novel Cytokine Therapy for Type 1 Diabetes” for the project period November 2018 through October 2019
- Brendan Bowman 3 new awards this past year:
  - 1) UVA Center for Engineering in Medicine - Delivering Improved Anemia Outcomes in End State Renal Disease by Leveraging EMR Data in a Predictive Dosing Algorithm
  - 2) Center for Innovative Technology - Optimizing Anemia Dosing Algorithms by Leveraging EMR Data to Improve Outcomes in End Stage Renal Disease
  - 3) UVA Ivy Biomedical Innovation Fund - Improving End Stage Renal Disease outcomes through a predictive calcimimetic dosing algorithm Rahul Sharma and I are in the process of submitting an R25 for August 6th deadline

## NEW RESEARCH SPACE

The Division of Nephrology/CIIR will inaugurate a new research laboratory in early 2020. 9,000 square feet of modern laboratory research space in Pinn Hall is being renovated to accommodate the expanded research funded by the Division/CIIR. The design of the space will be a state-of-the-art facility. The location of the research labs is in close proximity to the Department of Biomedical Engineering as well as to science departments. Colleagues and collaborators interested in kidney diseases will facilitate collaborations and growth.



Panel A. Renovation of Pinn Hall, 4th floor. We have completely redesigned approximately 9,000 sq ft of bench laboratory space. The new space will incorporate “open lab” design and will accommodate 8 research faculty members, 35 postdoctoral and laboratory support staff. It includes surgical suites, tissue culture area, microscopy room, etc. The open design will facilitate collaboration and expansion of projects.

Panel B. laboratory space will be similar to the already renovated 3rd floor of Pinn Hall.

# DIVISION OF NEPHROLOGY - EDUCATION

## NEPHROLOGY DIVISION FACULTY HIGHLIGHT



The Division of Nephrology is proud to recognize one of the University's premier educators, **Kambiz Kalantari, MD**. He was elected as a member of the Academy of Distinguished educators at UVA School of Medicine (SOM) in 2012. Since 2014, he has been awarded five Mulholland Awards for Teaching Excellence in Foundation of Medicine by the medical students at the end of their two years of pre-clinical medical education. In 2014 he received the SOM Dean's Award for Teaching Excellence. In 2018 he was one of the six UVA faculty to receive the Jefferson Scholars Foundation award for teaching excellence and this year, he was the recipient of an endowed professorship: Harrison Distinguished Teaching Associate Professor of Medicine. At the national level, Dr Kalantari received the Mid-career Award for Teaching Excellence from the American Society of Nephrology in 2019. He is currently the Program Director for the Division of Nephrology's Fellowship Training Program.

## WELCOME NEW DIVISION OF NEPHROLOGY FELLOWS

### Lakshmi Kannan, MBBS



Medical: Stanley Medical College, India

Residency: Monmouth Medical Center, Long Branch, New Jersey

Fun Facts: An avid pet lover, especially dogs, she also enjoys gardening and world travel.



### Luis Calvo, MD



Medical: Universidad Central de Venezuela Escuela de Medicina Luis Razetti, Venezuela.

Residency: Nassau University Medical Center, East Meadow, NY

Fun Facts: A true renaissance man, he loves art, gastronomy, nature and animals. His life philosophy is 'Believe you can and you're halfway there' - Theodore Roosevelt



### Seun Oluwo, MBBS



Medical: Ladoke Akintola University of Technology (LAUTECH) College of Health Sciences, Nigeria

Residency: Brookdale University Hospital Medical Center, Brooklyn, NY

Fun Facts: He is a keen photographer, loves sports and possesses an optimistic outlook on life. Prior to coming to the US, he was a medical officer in charge of a charity clinic providing Maternal and Child Health services.



### Anita Vincent-Johnson, MD



Medical: Ross University School of Medicine, Dominica

Residency: VTC Carilion Clinic, Roanoke, VA

Fun Facts: Her undergraduate degree was in physics. She loves outdoor activities including: Snowboarding, hiking, camping and soccer. She also enjoys listening to music and reading Stephen King novels.



# DIVISION OF NEPHROLOGY -NEW FACULTY SPOTLIGHT

## **Julie Scialla, MD, MHS, Associate Professor**



Dr Scialla joined the Division of Nephrology/CIIR July 1, 2019. She received her BS from Duke University, MD from University of Pennsylvania, and MHS from Johns Hopkins Bloomberg School of Public Health. She then received her residency and fellowship training from Johns Hopkins University. Dr Scialla's previous faculty appointments have been at University of Miami and Duke University prior to coming to UVA. She is a physician scientist with a secondary appointment in the Department of Public Health Sciences. She is the Director of the Nephrology Clinical Research Center where she will oversee a research staff and is the Director of Outcomes Research and will serve as a Leader for the Combined Public Health Service and Medicine Program in Outcome Research. Her research is supported by NIH R01.

## **Sho Morioka, PhD, Assistant Professor**



Dr Morioka joined the Division of Nephrology/CIIR as Assistant Professor July 1, 2019. He received his BS, MS and PhD from Nagoya University. He then did a postdoctoral fellowship at NC state, and became a research scientist in Dr Kodi Ravichandran's laboratory. He is an academic investigator and an outstanding scientist who focuses his studies on cell clearance through engulfment. He has recent papers (2018-2019) in Nature, Immunity and Science Reports.

## **Jeanne Kamal, MD, Assistant Professor**



Dr Kamal joins the Division of Nephrology on 9 September, as Assistant Professor of Medicine on the clinical faculty track who will focus her effort on Transplant Nephrology. She received her Medical Degree from Lebanese University, followed by internship in internal medicine at the Baabda Governmental University Hospital Lebanon, Lebanese University –Faculty of Medical Sciences. She then went to Hofstra Northwell for IM training and fellowship training at NYU. Lastly she recently completed Transplant Nephrology Fellowship Training at Columbia University College of Physicians and Surgeons.

## **Anubhav Kumar, MD, Assistant Professor**

Dr Anubhav Kumar is a clinical faculty, who just completed his Nephrology and Ultrasound fellowship training at the University of Pennsylvania. He will split his time between UVA and Augusta Hospital while developing an point of care ultrasound program at UVA. He will start September 1, 2019.

## **Corey Cavanaugh, DO, Assistant Professor**



Dr Cavanaugh joined the Division of Nephrology/CIIR as an Assistant Professor of Medicine, August 1, 2019. Dr Cavanaugh received a B.S. in Biology at the University of Toledo, a D.O. from Ohio University Heritage college of Osteopathic Medicine and recently completed a Fellowship in Nephrology at Yale School of Medicine. Upon joining the division, he will focus on developing a Glomerulonephritis Clinic at UVA. He is joined by his wife, Brittany (who will become faculty in general internal medicine) and their new born son, Jack.

## **Nataliya Skrypnyk, MD, Instructor**



Dr Skrypnyk recently joined the division as a Research Faculty with expertise in acute kidney injury.

## **Anjushree Kumar, MD, Assistant Professor**



Dr Anju Kumar recently joined the Division of Nephrology/CIIR as a transplant nephrologist. She recently completed an intensive transplant fellowship at the Mayo Clinic Hospital, Arizona. She received her MBBS and postgraduate training at Rajendra Medical College, India. She also pursued residency in OB/GYN at Patna Medical College and Hospital, India, residency in Family Medicine at Research Medical Center, Kansas City, MO and residency training in medicine and fellowship training in nephrology at U. Kansas Medical Center, Kansas City, KS.

## **Swati Rao, MD, Associate Professor**



Dr Rao joined the Division of Nephrology/CIIR as an Associate Professor of Medicine on July 1st 2018. She started her medical training in India and moved to US to pursue medical residency and post-graduate training. She was drawn to transplant nephrology from very early in her career and after completing nephrology fellowship from Temple University, she sought additional training in transplant nephrology from Emory University, Atlanta, GA. Thereafter, she worked as transplant nephrologist at Temple University Hospital, Philadelphia, PA for 5 years prior to joining UVA. Since her arrival, the transplant program has expanded its operations and is making life saving treatment accessible to more patients in need.

## DIVISION OF NEPHROLOGY - AWARDS

**Mark D. Okusa, MD**, was president of the American Society of Nephrology in 2018

**Mitchell H. Rosner, MD**, was recipient of the Robert G. Narins Award from the American Society of Nephrology in 2019

**Karen Warburton, MD**, was elected to Fellowship in the American College of Physicians

**Kambiz Kalantari, MD:**

- Awarded, Harrison Distinguished Teaching Associate Professor, endowed chair
- Mulholland Award for Teaching Excellence in Foundation of Medicine, UVA School of Medicine, Class of 2021
- American Society of Nephrology Mid-Career Award for Teaching Excellence
- The Jefferson Scholars Award for Excellence in Teaching

**Brendan Bowman, MD**, Mulholland Award for Teaching Excellence in Foundation of Medicine, UVA School of Medicine, Class of 2021

**Sana Khan, MBBS**, UVA Department of Medicine Clinical Excellence Award

**Danielle Wentworth, MS, ACNP**, UVA Department of Medicine Clinical Excellence Award

**Amanda DeMauro, MD**, UVA Department of Medicine Teaching Excellence Award

**Mike Brown, PhD**, UVA Department of Medicine Mentorship Excellence Award

**Caroline McCormick**, UVA Department of Medicine Outstanding Staff Contribution Award

**Shinji Tanaka, MD, PhD**, Postdoctoral Associate, First Place, National Competition, Young Investigator Forum, Boston, MA

**Nataliya Skrypnik, MD** recently joined the division as a Research Faculty with expertise in acute kidney injury. Previously she worked in the Divisions of Nephrology at Vanderbilt U. and Denver Colorado

## DIVISION OF NEPHROLOGY - FACULTY DEVELOPMENT

Leadership Division faculty have served national roles including service for the American Society of Nephrology as President, Chair of program committee for Kidney Week, Chair of Career Advancement Committee, Chair of the STARS program; for Renal Physician Association including Board members, Program Chair, Government Faculty Development Program. Karne Warburton, MD, is the Vice Chief for Faculty Development and has organized a model program. The faculty development program consists of three overlapping domains: 1) professional advancement (promotion, scholarship, developing niche expertise, finding and managing mentors, networking); 2) managing down (teaching, giving feedback, evaluation, mentoring others); and 3) wellness (integration of work and life, preventing burnout, finding meaning in work). Professional advancement activities in FY19 include the ongoing work of the newly formed Promotion and Tenure Steering Committee to guide faculty through the promotion and tenure process.

Finally, in the area of wellness, we organized a half day retreat for the nephrology faculty that focused on personal and systemic causes of burnout, followed by a workshop on finding meaning at work. We surveyed the faculty on issues relating to burnout and well-being prior to the retreat and presented the faculty data, with comparisons to department of medicine and national figures, during the retreat. The retreat culminated with a team-building exercise. Faculty development goals in FY20 include strengthening the role of mentorship committees, particularly for junior faculty, continuing to offer faculty new and practical tools to create an effective learning climate for our trainees, and empowering faculty to recognize potential personal and systemic causes of burnout at work, work to make changes where there are factors under their control, and continue to strengthen awareness of aspects of their professional life that bring them meaning.

# DIVISION OF NEPHROLOGY - PUBLICATIONS

## **Selected from over 100 academic year publications:**

Arogundade FA, Omotoso BA, Sanusi AA, **Balogun RA**. *Burden and etiopathogenesis of acute kidney injury in the tropics*. Clin Nephrol. 2019 Aug 9.

Arogundade FA, Omotoso BA, Adelakun A, Bamikefa T, Ezeugonwa R, Omosule B, Sanusi AA, **Balogun RA**. *Burden of end-stage renal disease in sub-Saharan Africa* Clin Nephrol. 2019 Aug 9.

**Bowman BT**. *Transitional Care Units: Greater Than the Sum of Their Parts*. Invited Commentary. CJASN. May 2019. 14 (5) 765 – 767.

**Brown, M.G.**, Gamache, A., Nash, W.T. and Cronk, J. (2019) *Natural selection for killer receptors and their MHC class I ligands: In pursuit of gene pairs that fit well in tandem*. J Leukoc Biol. 105(3):489-495.

Scindia Y, Wlazlo E, Leeds J, Loi V, Ledesma J, **Cechova S**, Ghias E, Swaminathan S.: *Protective role of hepcidin in polymicrobial sepsis and acute kidney injury*. Front Pharmacol. 2019 Jun 6;10:615.

Guagliardo NA, Yao J, Stipes EJ, **Cechova S**, Le TH, Bayliss DA, Breault DT, Barrett PQ.: *Adrenal tissue-specific deletion of TASK channels causes aldosterone-driven Angiotensin II-independent hypertension*. Hypertension. 2019 Feb;73(2):407-414.

Chaudhry, R. I., **Chopra, T.**, Fissell, R., & Golper, T. A. (2019). *Strategies to Prevent Peritonitis after Procedures: Our Opinions*. Perit Dial Int, 39(4), 315-319.

Lee DH, Malat G, Boyle SM, Talluri S, Bias TE, Harhay MN, Ranganna K, **Doyle AM**. Safety and Efficacy of Universal Postoperative Decolonization for Kidney Transplant Recipients. *Experimental and Clinical Transplantation*, May 2019.

Intagliata, N. M., Davis, J. P. E., Lafond, J., **Erdbruegger, U.**, Greenberg, C. S., Northup, P. G., & Caldwell, S. H. (2019). Acute kidney injury is associated with low factor XIII in decompensated cirrhosis. Dig Liver Dis.

Zhao, Z., Ren, J., Dai, C., Kannapell, C.C., Wang, H., Gaskin, F., **Fu, S.M.** *Nature of T cell epitopes in lupus antigens and HLA-DR determines autoantibody initiation and diversification*. Ann Rheum Dis 2019 Mar. MC6377330.

Guo, C., Zhou, M., Zhao, S., Huang, Y., Wang, S., Fu, R., Li, M., Zhang, T., Gaskin, F., Yang, N., **Fu, S.M.** *Innate lymphoid cell disturbance with increase in IL13 in systemic lupus erythematosus*. Clin Immunol 2019 May. 202:49-58.

**Khan SF**, Bowman BT. *Vaccinating the patient with ESKD*. Clin J Am Soc Nephrol. 2019 July CJN.02210219

**Khan SF**, Ronco C, Rosner MH. *Counteracting the metabolic effects of glucose load in peritoneal dialysis patients; an exercise based approach*. Blood Purif. 2019 Apr 4:1-7.

**Morioka S**, Maueröder C, and Ravichandran K.S. *Living on the edge: Efferocytosis at the interface of homeostasis and pathology* Immunity (2019) 50(5):1149-1162

Rival C.M, Xu C, Shankman L. S, **Morioka S**, Arandjelovic S, Lee C.S, Wheeler K. M, Smith R.P, Haney L.B, Isakson B.E, Purcell S, Lysiak J.J and Ravichandran K. S. *PtdSer on viable sperm and phagocytic machinery components in oocytes as new players in sperm:egg fusion*. Nature Communications (2019) accepted.

Mitchell R, Mellows B, Sheard J, Antonioli M, Kretz O, Chambers D, Zeuner MT, Tomkins JE, Denecke B, **Musante L**, Joch B, Debacq-Chainiaux F, Holthofer H, Ray S, Huber TB, Dengjel J, De Coppi P, Widera D, Patel K. *Secretome of adipose-derived mesenchymal stem cells promotes skeletal muscle regeneration through synergistic action of extracellular vesicle cargo and soluble proteins*. Stem Cell Res Ther. 2019 Apr 5;10(1):116.

Inoue,T., C. Abe, T. Kohro, S. Tanaka, L. Huang, J. Yao, H. Ye, R. L. Stornetta, D. L. Rosin, Y.Wada and **M.D. Okusa**. *Non-canonical cholinergic anti-inflammatory pathway-mediated activation of peritoneal macrophages induces Hes1 and blocks ischemia/reperfusion injury in the kidney*. Kidney Int. 95:563-576, 2019.

Heather M Perry, Nicole Gorltdt, Sun-sang J Sung, Liping Huang, Kinga P Rudnicka, Iain M Encarnacion, Amandeep Bajwa, Shinji Tanaka, Nabin Poudel, Junlan Yao, Diane L Rosin, Jurgen Schrader, **M.D. Okusa**. *Perivascular CD73+ cells attenuate inflammation and interstitial fibrosis in the kidney microenvironment*. Am. J. Physiol. Renal Physiol., in the press, 2019.

Brown L, Luciano A, Pendergast JE, Khairallah P, Anderson CAM, Sondheimer JH, Hamm LL, Ricardo AC, Panduranga R, Rahman M, Miller ER, Sha D, Xie D, Feldman HI, Asplin J, Wolf, M, **Scialla JJ**. *Predictors of Net Acid Excretion in the Chronic Renal Insufficiency Cohort (CRIC) Study*. Am J Kidney Dis 2019.

Olivo RE, Hale SL, Diamantidis CJ, Bhavsar NA, Tyson CC, Tucker KL, Carithers TC, Kestenbaum B, Muntner P, Tanner RM, Booth JN, Mwasongwe SE, Pendergast J, Boulware LE, and **Scialla JJ**. *Dietary Phosphorus and Ambulatory Blood Pressure in African Americans: The Jackson Heart Study*. Am J Hyperten 2019;32(1):94-103.

Stremaska ME, Dai C, Venkatadri R, Wang H, Sabapathy V, Kumar G, Jose S, Mohammad S, Sung SJ, Fu SM, **Sharma R**. *IL233, an IL-2-IL-33 hybrid cytokine induces prolonged remission of mouse lupus nephritis by targeting Treg cells as a single therapeutic agent*. J Autoimmun 2019 May 15.

Sabapathy V, Cheru NT, Corey R, Mohammad S, **Sharma R**. *A Novel Hybrid Cytokine IL233 Mediates regeneration following Doxorubicin-Induced Nephrotoxic Injury*. Sci Rep. 2019 Mar 1;9(1):3215.

**Sun-sang J. Sung** and **Shu Man Fu**. *Interactions among Glomerulus Infiltrating macrophages and Intrinsic Cells via Cytokines in Chronic Lupus Glomerulonephritis*. J. Autoimmunity, in the press, 2019.

# DIVISION OF NEPHROLOGY SPOTLIGHT PROFILES

## STAFF PROFILE - Danielle Wentworth



*Tell us a little about yourself?*

I grew up in the Maryland suburbs of Washington, D.C., and since leaving for college I've moved around quite a bit until settling here in Charlottesville about four years ago. I always wanted to be involved in medicine, and learned about the role of a nurse practitioner as a sophomore in college. I decided to pursue nursing from that day forward, and it's been one of my best life decisions.



*What do you do in your spare time?*

I love cooking, baking, hiking, and spending time with my husband, Brian, and our goofy golden retriever, Bailey. I'm also the Communications Chair for the Junior League of Charlottesville, President of my neighborhood's HOA, and the leader of a social club for the partners & spouses of UVA hospital trainees, so outside of work I stay pretty busy! It's nice to come home to relax and spend time with my family and watch Netflix.



*Favorite places to travel?*

I lived in Aix-en-Provence and Paris, France in college, and would love to go back someday. Recently, my husband and I took a trip to Maine, and had a fantastic time hiking through Acadia National Park and eating wild blueberry ice cream.

*Next life?*

Professional pastry chef.

*How did you meet your partner?*

Brian and I both met in undergrad at Vanderbilt. Although we had a lot of mutual friends, we really got to know each other through the Fencing Club. Brian fenced in high school and was very good... I had joined to try something new and to meet some cute guys. I guess my plan worked out well!

## FACULTY PROFILE - Sho Morioka



*Tell us a little about yourself?*

I completed my postdoctoral research training in Dr Kodi Ravichandran's lab in the Department of Microbiology, Immunology, and Cancer Biology at UVA and joined the Nephrology Division and CIIR as a tenure track assistant professor this summer. I am very excited to pursue my own research, as well as to collaborate with outstanding researchers at UVA. I live with my wife, Maki, and our 11-month-old daughter, Emma.

*What brings you to Charlottesville?*

This city is super friendly to babies, children, and mothers, in so many ways. The research environment in UVA is exceptional, it is a great place for both family and work. Winning the college basketball championship this year was a big plus.

*What do you do in your spare time?*

Playing with my daughter, she loves to swim, and as she is an 11 month old baby, this surprised me.

*Favorite places to travel?*

Kyoto/Japan, it's a very calming place, I like a Zen mind.

*What about you would surprise us?*

I was trained in Karate for almost two decades, I hold a black belt, and I am qualified as a Sensei (instructor).

*Proudest/greatest achievement outside the professional realm?*

I was an under 20 year old Wado-ryu (a karate style) Karate champion.

*Next life?*

To be born a lady, I am just curious how different it would be!

*How did you meet your partner?*

She was my girlfriend from high school. I was so lucky that she decided to come to the US, even though I left Japan a long time ago.



*Most admired person?*

I have many, my parents, family, and current/past mentors, I really cannot thank them enough.

*Fictional heroes?*

Goku from Dragon ball.

*Which words or phrases do you most overuse?*

"Really?" Granted that there is a lot of "really?" surrounding my everyday life.



# DIVISION OF NEPHROLOGY SPOTLIGHT PROFILES

## FACULTY PROFILE - Corey Cavanaugh



*Tell us a little about yourself?*

My wife and I were raised in Akron, Ohio, met in medical school, and are now raising our son Jack.

*What brings you to Charlottesville?*

The lovely people, weather, and the nephrology division.

*What do you do in your spare time?*

I like to golf and cook.

*Favorite places to travel?*

Hawaii.

*What about you would surprise us?*

I'm not Irish.



## FACULTY PROFILE - Julia Scialla



*Tell us a little about yourself?*

I am a Clinical Nephrologist and Epidemiologist. I spend a lot of my time on clinical research in kidney disease including work in observational cohort studies, patient-oriented physiologic studies and clinical trials, and registry/EHR-based outcomes research.

*What brings you to Charlottesville?*

We came to Charlottesville to work at UVA! Can't imagine a more beautiful place or welcoming faculty.

*What do you do in your spare time?*

Outside of work I spend most of my time with my family. I have three amazing kiddos, a high-energy hound dog, and wonderfully supportive husband. If there is any more time I like to get outside, eat good food, read, and relax with friends.

*Favorite places to travel?*

Well, we just had a great vacation in Hilton Head. Hit on all my favorite activities above, except we had to leave the dog at home...

