

A collaboration between Northwest Kidney Centers and UW Medicine



LEFT: Joyce Jackson, president and CEO of Northwest Kidney Centers, speaks at the Center for Dialysis Innovation open house March 9 in Seattle. The nonprofit has granted the CDI \$15 million over the next five years to kick-start its research.

RIGHT: Buddy Ratner, co-director of the CDI, gives open house guests an overview of the CDI and its goals.

A new avenue for dialysis research

A message from the director

DR. JONATHAN HIMMELFARB

We enter spring with a big announcement for the new Center for Dialysis Innovation, a joint venture between UW Bioengineering and UW Medicine that aims to one day develop mobile dialysis technology. In early March at an open house for the CDI, Northwest Kidney Centers' CEO Joyce Jackson announced the nonprofit's commitment of a \$15 million grant to the CDI over the next five years to kick-start its research. The new research center brings together researchers from the Kidney Research Institute and the UW department of biomaterials and bioengineering. I am co-leading the center with Buddy Ratner, a professor of bioengineering and chemical engineering. We are incredibly grateful to Northwest Kidney Centers for their continued support and visionary thinking in launching the Kidney Research Institute in 2008, and now for providing the catalyst to kick off the Center for Dialysis Innovation. Through this incredible partnership we are well positioned to provide a future for people receiving dialysis treatment that will be complication free, restorative of kidney health and liberating. More than 150 people from the kidney and engineering communities attended the open house on March 9 and University of Washington School of Medicine Dean Paul Ramsey and Northwest Kidney Centers' Joyce Jackson spoke during the brief program. Turn the page to see photos from the event.

Inside you'll also have a chance to learn more about a dialysis study related to the gut microbiome and Ed Kelly, an investigator working on the kidney-on-a-chip, who has expanded his mentorship efforts by working with undergrads through a unique internship program. Our research fellows have also had great success at national meetings. Read more about them on page 3. And finally, turn to the back page to read about Bessie Young's APOL1 investigators meeting where genetic researchers and ethicists from across the country convened to discuss the responsible sharing of genetic data.

We thank you for your continued support of the Kidney Research Institute.

ON THE HORIZON

VOLUME 8, NUMBER 1 - SPRING 2017

**TRANSFORMING LIVES THROUGH
INNOVATION AND DISCOVERY**

KIDNEY RESEARCH INSTITUTE

Mailing Address:
Box 359606
325 9th Avenue
Seattle, WA 98104

206-616-8574
info@kri.washington.edu

kri.washington.edu



Photos from Center for Dialysis Innovation open house, held March 9 in Seattle



Top row: Bill Peckham, on dialysis for more than 25 years, at the open house; Nancy Colobong Smith, a transplant nurse at University of Washington Medical Center, talks to Linda Sellers, public relations director at Northwest Kidney Centers; Joyce Jackson, CEO of Northwest Kidney Centers, announces a \$15 million grant to the CDI while University of Washington School of Medicine Dean Paul Ramsey and guests applaud.

Bottom row: Paul Citron, a member of the CDI Scientific Advisory Board, looks at posters of top CDI research projects; Kidney Research Institute investigator Dr. Beno Freedman talks to guests at the open house.

Study considers the impact bacteria in the gut microbiome has on people with kidney failure



Lisa Anderson, clinical study coordinator.

“Gut Microbiome and p-Inulin in Hemodialysis” is a multi-center study that looks at bacteria in the digestive system—the gut microbiome—of people with kidney failure who are on maintenance hemodialysis.

“In healthy people, good and bad bacteria in the gut are usually balanced and do not cause health problems,” says Lisa Anderson, clinical study coordinator.

“Kidney disease can change the balance of bacteria and this may have negative effects on health. The purpose of the study was to learn more about this.”

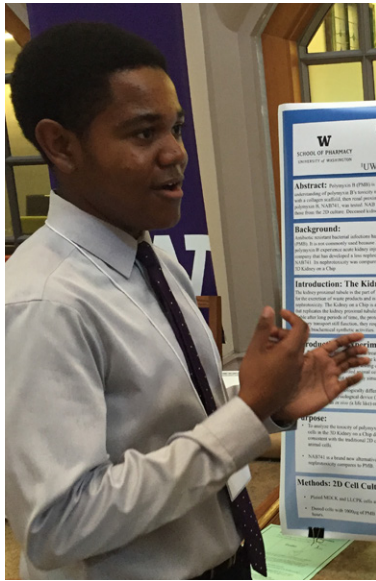
The study, funded by the National Institutes of Diabetes and Digestive and Kidney Diseases and held at five centers including the Kidney Research Institute, reviewed the effects of p-inulin, a prebiotic, on the gut microbiome.

“Prebiotics help promote the growth of good bacteria in the gut. We wanted to see if p-inulin can maintain the balance between good and bad bacteria and improve outcomes, including lowering inflammation, in people with kidney failure.”

The research teams gathered blood and stool samples provided by the 20 participants before, during and after taking p-inulin.

“This study was well-tolerated by participants,” says Lisa. “The research team is actively analyzing data and we hope to have results by the end of the summer. Our findings will help us plan a larger research study to see if prebiotics can be used to improve the health of people with kidney disease.”

UW undergraduates work with kidney-on-a-chip to gain lab experience



Wade Washington.

“The program is important because it exposes students to laboratory research at the beginning of their undergraduate career,” says Ed. “If they find that they enjoy this work, there is the possibility to work in a lab throughout their time here at UW.”

Two University of Washington undergraduate students, under the guidance of Kidney Research Institute investigator Ed Kelly, are working on the kidney-on-a-chip project and gaining valuable lab experience through the GenOM-ALVA program at UW.

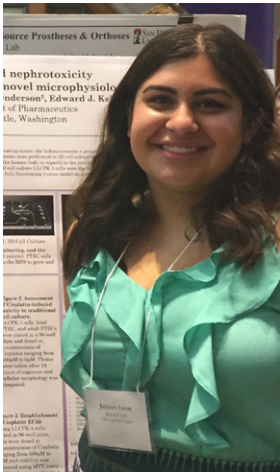
ALVA stands for Alliances for Learning and Vision for Underrepresented Americans—it’s a UW program that targets underrepresented students for internships. The GenOM-ALVA program is for incoming freshmen interested in science research, especially research in genetics and genomics.

Jayleen Leon, a student in the 2015 cohort, and Wade Washington, from the 2016 cohort, have worked on the kidney-on-a-chip, a tissue engineered human kidney microphysiological system that could provide a better way to test kidney disease medications.

“Both students have worked on studying how the human kidney responds to pharmacotherapies with known adverse nephrotoxic effects,” says Ed. “Using the kidney microphysiological system, they are trying to understand mechanisms of drug-induced kidney injury.”

Both Jayleen and Wade have continued in the lab after their internship ended.

“Too often, students think about working in a lab at the end of their training and their lack of experience can make it hard to find a lab where the primary investigator is willing to take them on. The GenOM-ALVA program gives these incoming freshman basic wet lab training which you may otherwise only get in upper level laboratory classes.”



Jayleen Leon.

Kidney Research Institute fellows win research training prizes at national meetings

Congratulations to three research fellows at the KRI who have won big at recent research meetings across the country.



Eli Weber.

Eli Weber won the Emil A. Pfitzer Student Award at the 2017 Annual Society of Toxicology Meeting for presenting his work on modeling drug-induced nephrotoxicity using the kidney-on-a-chip microphysiological system.

Eli specifically used the kidney microphysiological system to evaluate safety profiles for structural variants of polymyxin B. This class of antibiotics is only used as a last resort for treating multi-drug resistant bacteria because of their

high incidence of nephrotoxicity. Being able to use the kidney-on-a-chip to demonstrate decreased toxicity of new therapeutic candidates first before human testing is a significant leap forward in drug development.

Ranita Patel, a pediatric nephrology research fellow, was awarded the John Mahan best abstract award at the Renal Research Institute’s 9th International Pediatric Nephrology Fellows Meeting in late January.

Ranita also works on the kidney-on-a-chip—her abstract was on “Utility of a Microphysiological 3D Model of the Human Kidney Proximal Tubule for Predictive Toxicity Testing.” The aim is to understand kidney physiology and additionally, to test toxicity of medications or other therapeutic agents. Ranita tested the toxic effects of the antiviral drug, Tenofovir, for her abstract.

Ke Wang won first place at the 13th Annual Western Region Young Investigators Forum for her talk on the “Association of Antihypertensive Medications with Arteriovenous Fistula Maturation: the Hemodialysis Fistula Maturation (HFM) Study.”

At the event, nephrology fellows training in the western United States present their clinical and basic science research. Ke, as one of the top four, went on to present at a National Kidney Foundation meeting in April 2017.



Ranita Patel.



Ke Wang.

RETURN SERVICE REQUESTED

IN THIS ISSUE:

Director's message
PAGE 1

Study on impact of bacteria in gut
microbiome
PAGE 2

KRI fellows win research training
prizes at national meetings
PAGE 3

Join us on social media!



[www.facebook.com/
KidneyResearchInstitute](http://www.facebook.com/KidneyResearchInstitute)



www.twitter.com/KidneyResInst



[www.instagram.com/
KidneyResearchInstitute](http://www.instagram.com/KidneyResearchInstitute)



Investigator Bessie Young hosts APOL1 meeting, brings together experts in ethics, genetics and research

The investigators and Scientific Advisory Board members of Kidney Research Institute investigator Dr. Bessie Young's grant, "Community-Based Evaluation of APOL1 Genetic Testing in African Americans," met in Seattle earlier this year to discuss the goals of the grant and the responsible sharing of genetic data.

The meeting brought together nephrologists, basic science researchers and bioethicists from around the country.

Bessie received a three-year grant in 2015 to evaluate views concerning providing genetic testing information about the Apolipoprotein (APOL1) gene mutation to patients and family members who may be at risk for kidney disease. Gene mutations in APOL1 may cause up to 40 percent of kidney disease in African Americans who receive renal replacement therapy.

The goal of the grant, funded by the Ethical, Legal and Social Implications program at the National Human Genome Research Institute, is to address a bioethics concern, specifically to gain community input on the question of genetic testing for kidney disease risk in African American communities.

"We need to better understand the risks and benefits of sharing genetic testing information with people before we create policies that might do so," says Bessie.

As part of the study, Bessie and her team are meeting with members of the general public, healthcare providers and research professionals to gain a better understanding of what the greater community believes the approach to providing genetic testing information to those at risk should be.

The Scientific Advisory Board will meet again next year to discuss results of the project.

.....
'We need to better understand the risks and benefits of sharing genetic testing information with people before we create policies that might do so.'
.....