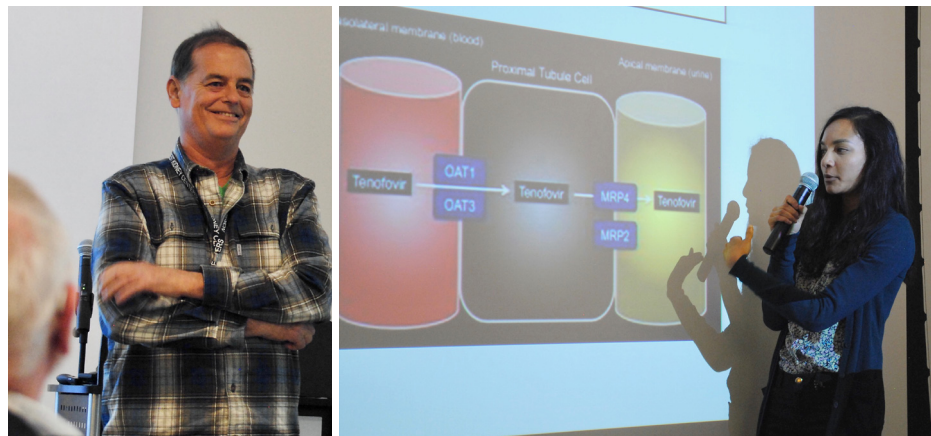


A collaboration between Northwest Kidney Centers and UW Medicine



LEFT: Bill Peckham, a member of the Kidney Research Institute's Patient Advisory Committee, spoke about the need for patients to develop their sense of agency at the committee's second annual meeting May 3 in Seattle.

RIGHT: Ranita Patel, a nephrology fellow, spoke about studying renal tubular cells in the kidney-on-a-chip, a credit-card sized device that holds human kidney tissue.

Investigators secure exciting grants; patients provide valuable feedback

A message from the director

DR. JONATHAN HIMMELFARB

It has been a productive and exciting summer and autumn at the Kidney Research Institute. This summer, the KRI was awarded two grants at the forefront of kidney disease research. With the first, "Chips in Space," we will send our kidney-on-a-chip onto the International Space Station to study the effect of microgravity on kidney cells. The second grant names the KRI, along with University of Michigan and the Icahn School of Medicine at Mount Sinai, as the central hub in the Kidney Precision Medicine Project (KPMP). The KPMP aims to create a kidney tissue atlas that will help physicians better treat kidney disease. Read more about both studies on page 2.

In May, we held our second annual Patient Advisory Committee meeting. This year's meeting focused on studies from bench to bedside, showing committee members how lab research is being translated to directly impact patient care. Topics ranged from improving medication dosing to integrating mobile apps for improved patient-provider communication. Committee members advised investigators on how to improve community outreach and discussed how the structure of studies could integrate patient involvement from the onset. As successful as its inaugural year, the Committee continues to help us align our research with patient priorities.

In August, U.S. News and other media outlets reported the results of investigator Dr. Nisha Bansal's study on kidney disease and atrial fibrillation. Nisha continues her groundbreaking work at the intersection of kidney disease and cardiovascular disease. In the upcoming BOLD study, Dr. Bansal will study blood pressure regulation in kidney disease patients.

We look forward to Northwest Kidney Centers' Discovery Gala in late October, an annual event that benefits kidney disease research.

Thank you for your continued support of the Kidney Research Institute.

ON THE HORIZON

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**TRANSFORMING LIVES THROUGH
INNOVATION AND DISCOVERY**

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Kidney Research Institute will serve as central hub for new Kidney Precision Medicine Project

The Kidney Research Institute is collaborating with the University of Michigan and the Icahn School of Medicine at Mount Sinai to serve as the central hub for the new Kidney Precision Medicine Project, which is funded by the National Institute of Diabetes and Digestive and Kidney Diseases.



Dr. Ian de Boer, associate director at the Kidney Research Institute, will serve as co-director of the administrative core of the central hub for the Kidney Precision Medicine Project.

“The KPMP is a national consortium that seeks to redefine acute and chronic kidney diseases in molecular terms,” says Dr. Ian de Boer, associate director at the Kidney Research Institute and co-director of the central hub.

Investigators working on the Kidney Precision Medicine Project will obtain and evaluate human kidney biopsies from participants with acute kidney injury or chronic kidney disease. These biopsies will be used to create a kidney tissue atlas that will

ultimately help physicians diagnose and treat kidney disease in the future. The project consists of three distinct groups: recruitment sites, where biopsy tissue will be collected; tissue interrogation sites, where investigators will analyze the tissue; and a central hub, where investigators will develop the atlas and coordinate and track the activities of all KPMP groups and members.

.....
“It’s exciting to have a role in such a large-scale project.”
.....

- Dr. Ian de Boer

In August, the KPMP held a two day kick-off meeting in Bethesda, MD. More than 100 participants attended the meeting, including representatives from all 13 sites associated with the project, patient representatives from these sites and members of the NIH.

“It’s exciting to have a role in such a large-scale project,” says Ian, who will co-direct the administrative core of the central hub with Dr. Jonathan Himmelfarb, director of the Kidney Research Institute.

The project is expected to last a minimum of five years.

Kidney Research Institute investigators reach for the stars, secure grant for sending kidney-on-a-chip to space

In June 2017, the National Center for Advancing Translation Sciences, in partnership with the Center for the Advancement of Science in Space, awarded Kidney Research Institute investigators Drs. Jonathan Himmelfarb, Ed Kelly, and Cathy Yeung a four-year, \$3 million grant to send our kidney-on-a-chip microphysiological system to space. In September of next year, our kidney chips will depart, likely from the Kennedy Space Center in Cape Canaveral, Florida, for the International Space Station.



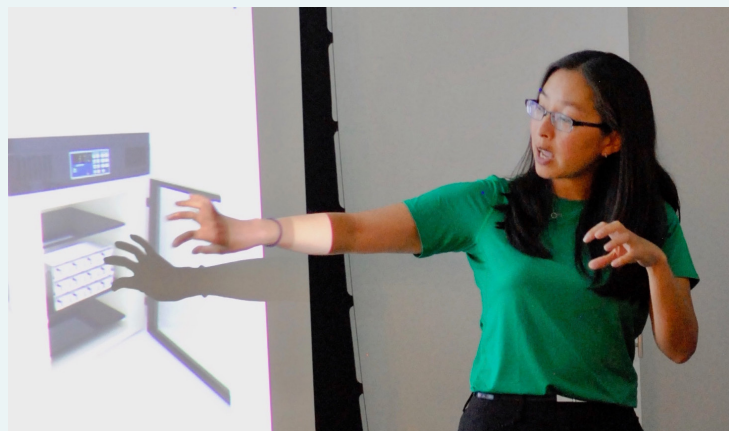
The kidney-on-a-chip will travel to the International Space Station to evaluate the impact of microgravity on kidney cells. Photo by Alex Devine.

Our kidney-on-a-chip was one of five organs-on-chip projects selected to study the effects of a microgravity environment on the human body. Microgravity can speed diseases up, causing health concerns that resemble aging. By studying the different organs-on-chips in space, scientists hope to better understand human health and diseases.

Initially, 24 kidney chips will be sent to space.

“We’re going to see what happens to these kidney cells at a very basic level,” says Cathy. “What we find may help us design better treatments for proteinuria, osteoporosis and kidney stones.”

The first phase of the study will measure the effects of weightlessness on healthy kidney cells, while the second phase will look at diseased kidney cells. The chips will be monitored by astronauts while in orbit then sent back down to Earth after several weeks where they will be analyzed by the KRI team of investigators.



Dr. Cathy Yeung talks about how astronauts will perform experiments on the kidney-on-a-chip in space in a presentation to our Scientific Advisory Committee Sept. 12 in Seattle.

Kidney patients provide valuable feedback on research priorities at second annual Patient Advisory Committee meeting

We held our second annual Patient Advisory Committee meeting May 3 in Seattle. The all-day meeting brought together a group of esteemed dialysis patients and transplant recipients. The purpose of this committee is to hear directly from kidney patients, understand their priorities and gather their feedback on current research being done at the Kidney Research Institute.

The committee is composed of local and national patients who have kidney disease, many who have spent years advocating on behalf of better kidney care.

“We’re thrilled to have a very dedicated team of kidney patients weigh in on research that matters most to them,” says Dr. Jonathan Himmelfarb, director of the Kidney Research Institute.

“Members of our Patient Advisory Committee have spent years living with a chronic disease—most have been on dialysis, some have received kidney transplants. They know the challenges of living with kidney disease and have good ideas on how we can design studies to make the biggest impact

on improving care for kidney patients.”

This year, meeting attendees listened to a number of presentations by both investigators and committee members.

Dr. Ke Wang, a research fellow at the Kidney Research Institute, discussed the association of antihypertensive, blood pressure lowering medications used during the fistula maturation process, Dr. Pavan Bhattraju talked about identifying sub groups with acute kidney injury to better target therapies, and Dr. Chris Blosser presented information about a phone app where kidney transplant patients can send data and communicate how they are feeling.

Dr. Ari Pollack, who works in pediatrics at Seattle Children’s Hospital, spoke about supporting patients in self-management

outside of the hospital, Dr. Ranita Patel discussed the kidney-on-a-chip and Dr. Nelly Cruz spoke about the hope for regenerative therapies for kidney disease.

Bill Peckam, on dialysis for 26 years, spoke about the importance of developing your sense of agency, your ability to take action, influence your own life, and assume responsibility for your behavior.

Other committee members who weighed in included Molly Boll, Bobbi Wager, Kevin Fowler, Sam M. Pederson, Glenda Roberts, Tami Sadusky, Emmett Smith and Chuck Lee.

Committee members shared their experiences and provided suggestions to investigators on how to better convey why their research is important and how it could impact patient care.

Having such a committee, the first of its kind in the nation, is extremely useful in helping us refine and shape our research program and ensures we continue to focus on what’s most important to patients. A big thank you to all for providing such useful feedback!

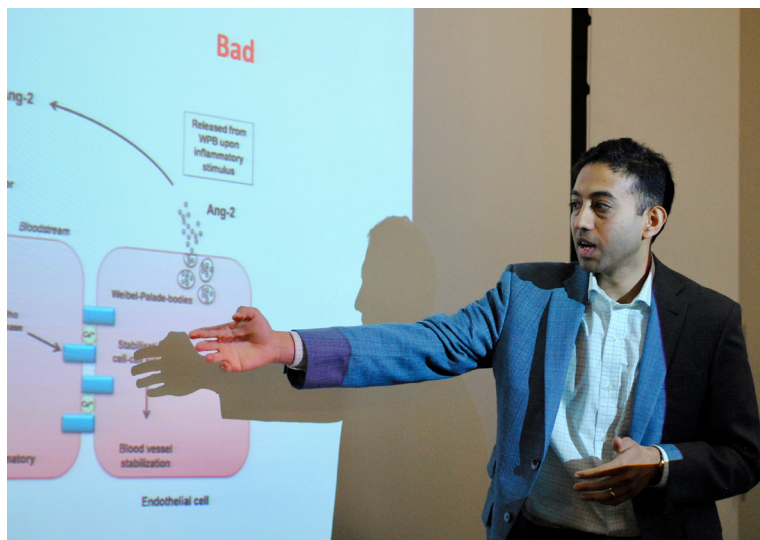


TOP: Investigator Dr. Ke Wang discussed medications used during the fistula maturation process.

BOTTOM: Patient Advisory Committee member Sam M. Pederson reminded investigators to develop studies that keep patient priorities in mind.



Committee member Glenda Roberts provides feedback on current research.



Dr. Pavan Bhattraju discussed his research on acute kidney injury.

RETURN SERVICE REQUESTED

IN THIS ISSUE:

Director's message
PAGE 1

Investigators awarded grant
for role in the Kidney Precision
Medicine Project
PAGE 2

KRI holds second annual Patient
Advisory Committee meeting
PAGE 3

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Investigator Dr. Nisha Bansal makes the news for research on cardiovascular disease in patients with kidney disease

In August, U.S. News reported the results of Dr. Nisha Bansal's published study about kidney disease and atrial fibrillation.

Results from the study show an association between kidney function and increased stress on your heart; specifically, people with failing kidneys are at increased risk of developing a life-threatening abnormal heart rhythm. Chronic kidney disease can as much as double a patient's risk of atrial fibrillation, a quivering or irregular heartbeat which can lead to stroke or heart failure.

"We found that even modest abnormalities in kidney function are linked with a higher risk of developing atrial fibrillation later in life," says Nisha.

Based on the report, doctors treating patients with kidney disease should watch for potential heart problems. Doctors

can reduce a person's risk of stroke from atrial fibrillation by putting them on blood thinners. A-fib patients can also be fitted with a pacemaker, or undergo a procedure to restore proper heart rhythm.

In addition, "people with kidney disease can help themselves by adopting a heart-healthy lifestyle," says Nisha. "Eating right, exercising and quitting smoking can help your heart function properly."

Nisha's next project, the BOLD study, is a collaboration with the University of California, San Francisco. The study will help doctors learn more about blood pressure, an important risk factor for heart disease for patients on dialysis. The study hopes to see if measuring and treating blood pressure at home impacts patients' health.

'We found that even modest abnormalities in kidney function are linked with a higher risk of developing atrial fibrillation later in life.'