

A collaboration between Northwest Kidney Centers and UW Medicine



LEFT: Rich Bloch, who has participated in studies at the KRI, spoke at Northwest Kidney Centers' 50th Anniversary Gala Nov. 10. The event raised more than \$600,000 for kidney research.

RIGHT: Joyce F. Jackson, president and CEO of Northwest Kidney Centers, thanked guests for supporting research.

Investigators continue great work

A message from the director

DR. JONATHAN HIMMELFARB

In 2012, we have continued on the course of growth and achievement that we started four years ago at the KRI's inception. Here are some recent developments that demonstrate how we've put our mission — to improve the lives of people with kidney disease — into action.

Hosted fourth annual Scientific Advisory Committee meeting. Top leaders came together in late September to discuss our programmatic research programs. We welcomed our newest committee member, Dr. Bonnie Ramsey, director of the Clinical and Translational Research Center at Seattle Children's Research Institute. The committee remains highly supportive of our focus on translational research objectives that have the potential to highly impact individual patient management and public health.

Published study on ways to overcome barriers in order to establish successful home hemodialysis programs. In the October issue of the Clinical Journal of the American Society of Nephrology, KRI investigators Dr. Rajnish Mehrotra and Dr. Bessie Young reviewed home hemodialysis as an underused, yet efficient and cost effective dialysis modality. The study concluded that the advent of hemodialysis systems that are easier to use and maintain can lead to better quality of life for dialysis patients. Visit kri.washington.edu for more.

Welcomed our second international scholar. Dr. Hongdong Li of Shanghai is collaborating with Dr. Rick Newitt, our mass spectrometrists, to study the change of metabolic products in patients with acute kidney injury in order to find possible new biomarkers.

Created vitamin D and urine phosphorous calculators for website. Our current research includes evaluating the role of genes, diet, and medications as causes of mineral metabolism disturbances in people with kidney disease. We do this to better understand their effects on blood vessel calcification, hypertension, bone fractures and other complications. With these tools, developed by KRI biostatistician Dr. Michael Sachs and KRI epidemiologist Dr. Cassianne Robinson-Cohen, doctors and patients can input standard lab measurements to help monitor a patient's vitamin and nutrient intake. Visit kri.washington.edu under "Research" to use the calculators.

Happy holidays from all of us at the Kidney Research Institute. We strive to make a difference and we appreciate your continued support.

ON THE HORIZON

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**TRANSFORMING LIVES THROUGH
INNOVATION AND DISCOVERY**

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Kidney on a chip: a microphysiological study

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“By using these chips as a first step, we’ll be helping to avoid the failing of many drugs in the costly clinical phase.”
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- Dr. Jonathan Himmelfarb
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In order to better test the safety of drugs, we will use an in vitro three-dimensional system to create tissue chips that mimic the function of a living human kidney.

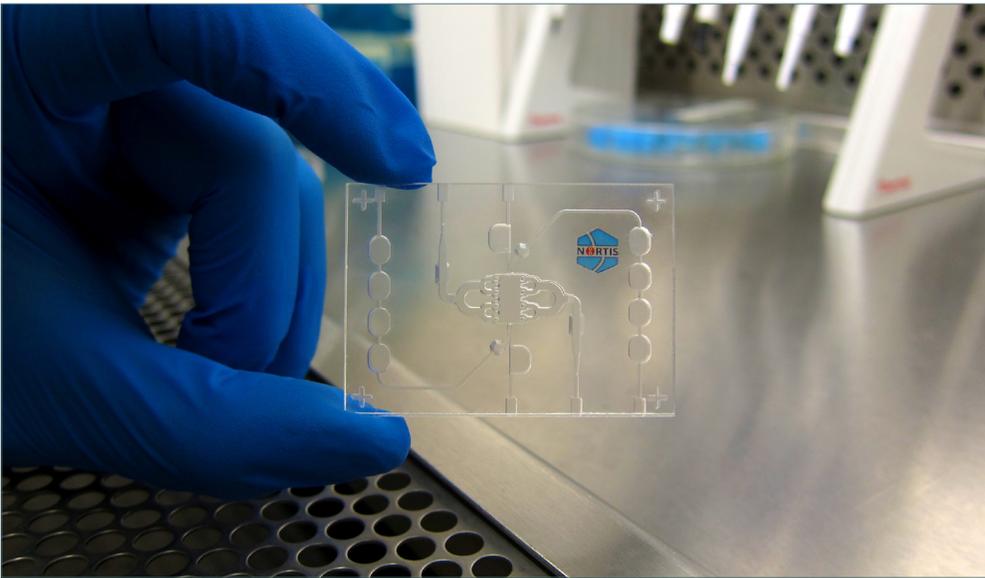
This study, launched in September and funded by the National Institutes of Health, will help us better understand how the kidney reacts to certain toxins and drug treatment methods.

“Testing medications on these kidney models, which use living organ tissues, may allow us to predict their safety before they move to clinical trials with animals or humans,” says Dr. Jonathan Himmelfarb. “By using these chips as a first step, we’ll be helping to avoid the failing of many drugs in the costly clinical phase.”

According to the NIH, more than 30 percent of promising medications fail in human clinical trials despite encouraging results from pre-clinical studies in animals.

Investigators will use these tiny kidney models, which aren’t much bigger than a dime, to study how the kidney reacts to toxins as well as how it responds to infections and certain injuries. The study’s project team consists of scientists from University of Washington Departments of Medicine, Bioengineering, Environmental Health, and Pharmaceutics, among others.

“This study demonstrates the collaborative, multidisciplinary research environment at the KRI as it brings together scientists from many different fields, all with the same goal – to find the most reliable, safest drugs to treat kidney disease,” says Dr. Himmelfarb.



Opened additional research space in Seattle

In April, we opened 1,500 square feet of new clinical research space at Northwest Kidney Centers’ 700 Broadway facility in Seattle. There is office space for study coordinators, study visit rooms and a processing room. The space is used by fellows, research investigators and study coordinators.



The foyer of our new facility at 700 Broadway, Seattle.

Studying the connection between uremia and cardiovascular disease



“Cardiovascular disease is a major cause of death in kidney disease patients. However, traditional cardiovascular risk factors don’t always apply to kidney patients.”

- Dr. Cathy Yeung

In July Dr. Cathy Yeung, Kidney Research Institute investigator and acting assistant professor of pharmacy at the University of Washington, was awarded a Norman S. Coplun Extramural Grant from Satellite Healthcare to further study uremic toxicity and its connection to cardiovascular disease. She aims to discover cardiovascular disease risk factors specific to patients with kidney disease.

One of five recipients nationwide to receive a 2012 Coplun Grant, Yeung believes her research will provide fundamental advances in the pathophysiology of uremic toxins as well as lay the foundation for further research on the link between kidney disease and cardiovascular disease.

In addition to looking for genetic markers that may be protective against cardiovascular disease, Yeung will also be conducting a small clinical study to see if switching to a vegetarian diet can reduce

circulating toxins that are associated with cardiovascular disease.

“Cardiovascular disease is a major cause of death in kidney disease patients. However, traditional cardiovascular risk factors don’t always apply to kidney patients. We need to better understand the risk factors associated with cardiovascular disease in patients with kidney disease in order to prevent cardiovascular problems,” says Yeung.

Yeung trained as a pharmacist at the University of Michigan and received her Ph.D. in medicinal chemistry at the University of Washington.

KRI investigators Drs. Yoshio Hall and Maryam Afkarian have also received Coplun Grants in recent years.

Talked to community members about new studies, need for kidney research

Our investigators talked to members of the community about the past, present and future science of improving kidney care on Nov. 10 at a Northwest Kidney Centers scientific symposium. More than 70 people attended the half-day event.



Left to right: KRI director Dr. Jonathan Himmelfarb discussed the KRI’s work to improve care and outcomes; Harborview Medical Center nephrology section chief Dr. Rajnish Mehrotra visited with event attendees after speaking about home dialysis; Dr. Yoshio Hall spoke about health care disparities in kidney patients.

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IN THIS ISSUE:

Director's message
PAGE 1

Kidney on a chip
PAGE 2

Cardiovascular disease study
PAGE 3

One fellow's research
PAGE 4

Our website has a new look!
Visit kri.washington.edu to see
new features and resources.



Fellow Dr. Margaret Yu aims to identify non-traditional risk factors in diabetic kidney disease

Currently in her third year as a nephrology fellow, Yu is investigating the relationship between gender, exercise and depression in patients with diabetic kidney disease.

"I hope that my research helps identify risk factors for diabetic kidney disease," says Yu. "Are females more likely to develop end stage renal disease? Are patients with depression more prone to ESRD? I aim to find out how much influence, if any, those factors have."

For the last two years, Yu has studied data from 4,839 patients. Although more research is needed to determine if there is a direct cause and effect relationship, early results of her analysis show that patients who exercised more seemed to have a decreased progression to end stage renal disease.

After focusing on gender and exercise during the first two years of her fellowship, Yu is now concentrating her efforts on the link between depression and diabetic kidney disease. She aims to have results in a year.

"If we can establish that depression does, in fact, increase a patients' progression to end stage renal disease, we can then focus on those populations to try to somehow slow progression. Once we understand the risk factors, we can develop interventions."

Yu received her M.D. from Stanford University and completed her internal medicine residency at Northwestern University. In addition to working at the KRI, Yu is also pursuing a Masters degree in Epidemiology at the University of Washington School of Public Health.

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