



Dr. Shiv Jindal's \$1 Million Donation Launches Canada's First Research Program on the Prevention of Kidney Disease at the KRC

After 40 years of caring for thousands of dialysis and transplant patients, Dr. Shiv Jindal has donated \$1 million to spearhead a new research program at the Kidney Research Centre focused on the prevention of kidney disease. The program, a first in Canada, will be launched in 2009.



Dr. Shiv Jindal

Dr. Jindal's vision is simple. "Prevent kidney disease at a much younger age and control the risk factors that cause kidney disease. We can't continue to add dialysis units here and there. Our focus must be on prevention."

There has been an alarming increase in the number of patients suffering from kidney disease. Today, nephrologists at The Ottawa Hospital are caring for more than 800 patients on dialysis compared with 120 patients just 20 years ago. Our population is aging and there are more and more cases of diabetes and hypertension diagnosed every day. Indeed, diabetes now accounts for 35-40% of all cases of end-stage renal disease in Canada. Dr. Jindal's commitment to prevention fits well with the KRC's focus on strategies to halt the progression of diabetic and hypertension-induced kidney disease, including the use of medications that block a kidney-damaging substance called angiotensin II.

It is no exaggeration to describe chronic kidney disease as a health care crisis, with more than 30,000 Canadians suffering from end-stage renal disease and over 500,000 Canadians with stage III kidney disease. This has prompted Dr. Jindal to tackle kidney disease head on.

Dr. Jindal started his distinguished career over four decades ago in Belfast, Northern Ireland. And on July 14, 1967 he joined the former Ottawa Civic Hospital as a fellow in the Division of

Nephrology. At that time, they only had one dialysis machine that ran on three shifts for three patients.

For the next thirty years, Dr. Jindal played a critical role in establishing a separate Division of Nephrology, developing a dialysis unit, a renal transplant program and performing clinical research in hypertension.

Among his many astonishing firsts, he played a key role in Ottawa's first heart transplant due to his highly regarded expertise in anti-rejection medications.

In the last 40 years, there have been great advancements in the field of dialysis and kidney transplant but that is not the optimal solution to the problem of kidney disease.

One of Dr. Jindal's patients, Agostino Monteduro, could not agree more. "I have had two kidney transplants and I am truly grateful for the care I have received over the last 23 years. But I often wonder why I developed kidney disease. Why me? Could I have prevented it? And most importantly, can I help prevent it in my children and grandchildren?"

On Tuesday, October 30th, about 60 guests gathered at the Riverside Amphitheatre to honour Dr. Jindal and celebrate this historic initiative for the KRC. Patients, family members, as well as members of the Ottawa Health Research Institute, Kidney Research Centre, and The Ottawa Hospital were on hand to recognize Dr. Jindal's extraordinary \$1 million donation - the largest personal gift ever from a physician at The Ottawa Hospital. Dr. Duncan Stewart, the new Chief Executive Officer of the Ottawa Health Research Institute delivered an opening address that highlighted Dr. Jindal's career and the importance of this donation to the kidney research program.

The new program for the prevention of kidney disease will operate through the Kidney Research Centre, a state-of-the-art 15,000 square foot laboratory facility devoted to research on the prevention, detection, and treatment of kidney disease.

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Kidney Research Centre (KRC) Opens Doors to New Facility

More than 5 years after its original conception, the new KRC laboratory facility, located within a new addition to Roger Guindon Hall at the University of Ottawa, was officially opened on May 3, 2007. The facility, unique in Canada, will serve as the launching pad for new discoveries related to kidney disease research in Ottawa. Moreover, it represents the training ground for the next generation of leading kidney research scientists.

The Inauguration was organized by the University of Ottawa, in partnership with the Ottawa Health Research Institute (OHRI) and The Ottawa Hospital (TOH). The event featured addresses from the Dean of the Faculty of Medicine, Dr. Jacques Bradwejn, the Rector of the University, Dr. Gilles Patry, the Chair of the Board of the OHRI, Ms. Jacqueline Holzman, and the Director of the KRC, Dr. Kevin Burns. Each speaker highlighted the importance of this facility to generate breakthroughs that could help prevent, diagnose and treat kidney diseases. In addition, Mr. Gerry Lepage, a patient with kidney disease who has been a long-time supporter of the KRC, spoke eloquently at the inauguration about the impact kidney



Mr. Gerry Lepage

disease has had on his life and his hope for an eventual cure.

Construction of the KRC was made possible by a grant from the Canada Foundation for Innovation and the Ontario Innovation Trust, as well as financial support from the University of Ottawa, the OHRI, industry sponsors, and community supporters who have made donations via the Ottawa Hospital Foundation. The total project cost was \$8.6 M.



A view of the open concept KRC labs.

The expansive 1,400 square meter facility consists of a large open-concept laboratory that currently houses the five scientists and staff at the KRC, as well as state-of-the-art equipment and dedicated rooms for specialized laboratory procedures. The facility was designed with the intent to foster collaborative research and interaction amongst the scientists and their research teams.



Left to right: Drs. Chris Kennedy, Rhian Touyz, Kevin Burns, Richard Hébert, Jacques Bradwejn (Dean of Faculty of Medicine) and David Z. Levine.

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Recent KRC Community Fund-raising Events



*KRC Golf Tournament,
June 2007*



*Yolande Perrier Golf Tournament,
August 2007*



*Baseball,
September 2007*



*Ottawa 67s,
March 2007
Dr. C. Kennedy (right)*



*Oyster Night,
November 2007
Left to right: Mr. Agostino Monteduro,
Mr. Marc Dilauro, Dr. Tamara Paravicini
and Mr. Mario Frangione*

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The Inauguration featured tours of the facility and demonstrations of its research capabilities. Those taking the tour heard from KRC staff about the specialized techniques used to measure blood pressure in small animals, the mechanisms in which kidney cells are exposed to mechanical forces mimicking those present in the kidney, the state-of-the-art equipment used to measure cellular signalling responses in live kidney cells, and the techniques used to study the function of freshly isolated kidney tubules or blood vessels.



Left to right : Dr. G. Patry, J. Holzman, Dr. K. Burns, and Dr. J. Kitts (CEO, TOH) at the unveiling of the KRC plaque.

A number of research themes are addressed at the new KRC, including the effects of diabetes and high blood pressure on kidney function, the mechanisms underlying protein loss in the urine, and the impact of prostaglandins and their antagonists (anti-inflammatory drugs) on kidney structure and function. In addition to using laboratory approaches involving isolation of kidney cells and animal models of kidney disease, a major research goal of the KRC is to conduct “translational research”,

whereby human specimens can be studied directly in the lab using this specialized equipment, or results from animal studies can be used to determine their significance in people with kidney disease. In this regard, 3 of the 5 scientists at the KRC are clinicians who care for people with kidney disease and hypertension, and this allows for application of pure research findings to the patient's bedside. Thus, creation of a research ambience at the KRC directly contributes to improved patient care.

The Inauguration also featured the unveiling of a plaque commemorating the opening, which reads, “Canada's first centre dedicated to research on the prevention, detection and treatment of kidney disease. Le premier centre au Canada dédié à la recherche sur les maladies du rein, à la prévention et au traitement.”

The new KRC will attract world-class scientists to Ottawa and indeed can accommodate 2-3 more researchers and their staff. Importantly, the KRC will be actively engaged in the training of undergraduate and graduate students, and post-doctoral fellows, to become the next leaders in kidney research. Since its inception, the KRC has indeed witnessed a significant increase in numbers of trainees from around the world who have come to Ottawa to participate in the fight against kidney disease.

KRC's International Connections

Couple from Brazil brings warmth and insight.

Last January Carlos and Elisandra De Castro, a married couple from Brazil, left their glorious summer to continue their research training at the KRC. When Dr. Burns met them he noted their surprise at the bitter -20°C cold. And it didn't take long for Elisandra to make a new discovery: “Besides being so cold, it was the first time I saw snow,” she says.

Why did they come? Carlos, working in Dr. Rhian Touyz's lab says, “KRC's emphasis on kidney and vascular disease is stimulating for me. Here we can develop new concepts and learn new methods.”

We asked if there was something special about a married couple working together in the same research facility. Elisandra, in Dr. Burns' group is emphatic, “Two people can work better than one alone. Carlos and I are always discussing our stuff and developing projects together. Our dream is to become professors and independent researchers in an academic institution.” She describes how their Ottawa adventure came about, “My group from Brazil studies the renin angiotensin system (RAS) in kidney and cardiovascular disease. I was looking for new ways to think about signaling pathways. The many papers that Dr. Burns and Dr. Touyz have published showed me I could find excellent supervision here. My coming was facilitated by previous collaboration between my co-advisor from Brazil, Dr. Santos, and Dr. Touyz. And now it is clear

we have indeed received expert guidance offered in a very friendly manner.”

Of course, first rate medical research is always international. The arrival of the dynamic Brazil couple in Ottawa is the product of the international reputations of the KRC's Drs. Burns and Touyz, as well as that of Dr. Robson Santos in Brazil. And for many years Ottawa kidney research has hosted trainees, and even established investigators. All of KRC's investigators have worked outside of Canada and the most senior KRC researcher spent 5 years in three different countries. Now, with the splendid new facility, the KRC can undertake more projects and offer better research training than ever. And Dr. Touyz, holder of The Canada Research Chair in Hypertension (see KRC News October 2005 — <http://www.ohri.ca/centres/KRC/news.asp>) has established a powerful Brazil connection.

“Although we have a very good laboratory in Brazil, it is important to get new experiences in different countries,” says Carlos. “We can learn some things, and we bring knowledge too. An important expectation of the Brazilian program which supports my Ottawa work is to bring back new methods”. Carlos emphasizes the superb infrastructure of the KRC labs, the availability of important new methods for him (he has learned the techniques of myography, immuno-precipitation



Carlos and Elisandra De Castro

and small interference RNA) and how quickly new reagents can be ordered - some not even available back home. He has also set-up a new method to measure hydrogen peroxide levels in cells.

Dr. Touyz is delighted. “It has been a pleasure working closely with Carlos, who already has made a key contribution to a new publication describing how Ang-(1-7), a special hormone, regulates vascular cell function. This is extremely important because Ang-(1-7) may have protective actions and hence prevent vascular damage associated with cardiovascular disease, diabetes, hypertension and renal disease.”

And how does Dr. Burns, a pioneer investigator on the RAS and the kidney, view the arrival of Elisandra Gava in his lab? “She had been working in Brazil on the effects of Ang-(1-7) on cell responses, under the direction of Drs. Gregory Kitten and Robson Santos, the latter considered to be the world authority in the field.

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A 1 Million Dollar Message for the Ottawa Community

More than 5 years ago Dr. Shiv Jindal said, "The Kidney Research Centre (KRC) has great potential and it's great to know there are people willing to help."

At that time Dr. Jindal had just donated \$250,000 to the KRC to honour Dr. Sourirajan who made water purification possible around the world as well as contributing to the lives of dialysis patients. Dr. Jindal also stressed that the KRC "needs all the support of the Ottawa community."

It really is hard to be sure what motivates someone like Dr. Jindal. His own clinical work has been amazing, and he has himself contributed to research excellence. With his wife Serita, he has worked for years, during his holidays, on the Village Development Project to bring good water to villages in India.

Now he is back in the KRC spotlight. Why? What drives this man? And if there are people willing to help the KRC, as Jindal noted 5 years ago, who are they? Has the KRC really got the community support that Jindal seems to have envisioned? Or is he impatient?

Is he saying, "Come on folks, let's get on with it, our patients need the best kidney research available and it is up to each of us to make this happen. And I'll show you once more how to do it!"

Let's be clear. So many have helped support the KRC. There are yearly events that bring in

much needed funds to help run the KRC. There are 8 funds set-up in The Ottawa Hospital Foundation with the KRC as the exclusive recipient. And there have been other significant gifts—but nothing like the \$1 million given by Dr. Jindal.

One thing is certain. KRC supporters, who are usually kidney patients (e.g. transplant recipients) or their family members, have a very close connection to kidney care in Ottawa. The KRC came into existence in March, 2000 after hard work by many kidney community members including large meetings at the Civic and General Hospital auditoriums. These patients and other donors have made it clear they want to hear about Ottawa kidney research, and how their own dollars make a difference to broaden the scope of the KRC. They also noted that kidney care and research were not among the main areas of emphasis for new building facilities or funding of new faculty members.

So is Dr. Jindal reiterating his message of 5 years ago? Is he saying, "Come on Ottawa, support your kidney research team and get better kidney care for your family and loved ones. What you give will indeed make a difference." By designating his \$1 million donation to exclusively support a Chair in kidney disease prevention he is indeed showing us how individuals can improve the specific mission of the KRC.

Dr. David Z. Levine

(Continued from page 1) Dr. Jindal's Donation

The program will:

- Ensure patients diagnosed in the early stages of kidney disease will have a better chance of avoiding end-stage renal disease;
- Reduce the incidence of patients requiring kidney replacement therapy;
- Enable patients with a family history of kidney disease access to programs and information to educate their children and grandchildren on the risk factors associated with the disease;
- And encourage patient involvement in clinical research right here in the Ottawa area.

"We are deeply honoured and grateful that Dr. Jindal, a Canadian visionary in nephrology, has launched this important research, which will focus on helping people before they become ill from kidney disease", said Dr. Kevin Burns, Director of the Kidney Research Centre. The Kidney Care Centre, the Kidney Research

Centre and The Ottawa Hospital Foundation are reaching out to the community and anyone who has been touched directly or indirectly by kidney disease to participate in the program and consider making a donation.

An additional \$1 million is needed to match Dr. Jindal's remarkable donation and help create a permanent program for the prevention of kidney disease.

For more information or to make a donation towards our \$2 million goal, please contact:

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 KRC's International Connections*

She came to the KRC eager to study the effects of Ang-(1-7) in kidney cells, a major interest of my and Dr. Touyz' laboratories. Elisandra's project has been to dissect out the ways in which Ang-(1-7) might protect against kidney tubular injury in diabetes. In a matter of weeks, Elisandra was not only fully conversant in English, but she had also established an assay to measure the activity of phosphatase enzymes in kidney cells. As it turns out, she found that Ang-(1-7) potently stimulates this enzyme, accounting for its ability to block the injurious effects of high glucose. This exciting development has the potential to lead to new approaches to prevent diabetic kidney disease."

There is real satisfaction with the couples' experience here. "I am confident that they will have had an enriching experience at the KRC, and we are gratified that they chose to study here and contribute so importantly to the fight against kidney disease and hypertension", says Dr. Burns.

Dr. Touyz has found the couple a delight. "Carlos and Elisandra are always smiling and laughing, which makes any interaction with them an absolute pleasure. Nothing is 'too much'. They are so giving, in their work, their expertise and knowledge." She is optimistic about their future plans, "They are incredibly keen and eager to learn and are energetic and dynamic with a major common goal of doing excellent science. With qualities such as this, there is little doubt that this special couple will succeed in anything they choose to do."

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