

Ottawa Hospital Research Institute

OHRI



IRHO

Institut de recherche de l'Hôpital d'Ottawa



Kidney Research Centre
Centre de recherche
sur les maladies du rein

ANNUAL REPORT
January 2011 to July 2012

AN INSTITUTE OF • UN INSTITUT DE



KRC ANNUAL REPORT 2011-12

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY.....	Page 3
2. RESEARCH PERSONNEL.....	Page 7
3. PEER-REVIEWED FUNDING	Page 13
4. SCHOLARLY ACTIVITIES & ACHIEVEMENTS.....	Page 16
A) PUBLICATIONS	Page 16
B) BOOK CHAPTERS/MANUSCRIPTS	Page 23
C) AWARDS	Page 23
D) INVITED PRESENTATIONS	Page 24
E) VISITING SCHOLARS	Page 27



1. EXECUTIVE SUMMARY

The KRC is now in its 12th year of operation, but it has only been 5 years since we moved into our new laboratory facility in Roger Guindon Hall at the University of Ottawa. Although the KRC is relatively young, it is encouraging to take note of the richness and diversity of its research studies and accomplishments on an annual basis, which provides the best evidence for progress to help people who are affected by kidney disease. In this and subsequent annual reports, we will focus on the academic year for the period of July 1st to June 30th. We have made this change to improve synchronization of our data with other annual reports (for example, in the Department of Medicine).

What are the highlights for 2011 to 2012? There have been several important milestones, but near the top, one would have to include the successes of Drs. Chris Kennedy, Richard L. Hébert and Kevin Burns in securing renewals of their operating grant support from the Canadian Institutes of Health Research (CIHR). These grants will permit these investigators to continue innovative basic science studies on the pathogenesis of diabetic nephropathy. Without this funding their research, which represents a central theme at the KRC, simply could not continue.

In addition to this good news, on the clinical research side Dr. Greg Knoll received extensive funding support from the CIHR for his important studies designed to improve outcomes in people with kidney transplants. It should be noted that Dr. Knoll is the first recipient of a University Research Chair (in Clinical Transplantation), attesting to the high quality of his research program. In addition, Dr. Deborah Zimmerman was recipient of a major peer reviewed grant from Baxter Corporation to study the impact of having patients use i-Touch technology to help regulate dietary phosphate intake.

In total, operating grant support for the year amounted to approximately \$2 M, which puts the KRC in an excellent position to achieve its research goals in the next four to five years.

In early 2012, Dr. Rhian Touyz accepted a position as the Director of the Cardiovascular Research Centre at the University of Glasgow, Scotland. At the KRC, Dr. Touyz was a prolific investigator, and superb mentor and colleague. She has made outstanding contributions to our understanding of pathogenesis of hypertension and vascular injury, and her work has been recognized by numerous international awards and presentations. During this period of transition, Dr. Touyz will maintain her position at the KRC and complete her ongoing peer-reviewed, funded projects. Dr. Touyz will be greatly missed, and we are fortunate that she is keen to continue collaborative work with scientists at the KRC.

The period from 2011-2012 was characterized by a high level of productivity with respect to scientific publications. Scientists at the KRC have published more than 80 peer reviewed manuscripts covering a wide variety of kidney research themes. On the basic research side, Dr. Touyz and her laboratory demonstrated for the first time that fat cells (adipocytes) produce the hormone aldosterone, which may induce injury to local blood vessels. This important new finding was published in the prestigious journal "Hypertension". Dr. Burns and his laboratory demonstrated that transgenic mice that overexpress the protein ACE2 in the glomerular podocyte are protected against the development of diabetic nephropathy, an important finding that was published in the journal "Kidney International".

On the clinical research side, Dr. Ayub Akbari and his colleagues published a key paper in the “Canadian Medical Association Journal (CMAJ)” that documented the referral pattern to nephrologists following the reporting of estimated glomerular filtration rate (eGFR) in the population. Dr. Knoll and his group reported on the utility of cystatin C-based assays to measure kidney function in humans in the “Clinical Journal of American Society of Nephrology (CJASN)”, and Dr. Zimmerman and colleagues published an important paper in CJASN on the experience of our program in the manipulation of peritoneal dialysis catheters. These are just some examples of the many studies that were published throughout the year.

The KRC is proud of its trainees and their accomplishments. A number of our trainees were recipients of awards at national and international meetings and/or have received salary support awards from national peer review agencies. We are especially pleased to announce that Ms. Danielle Zimmerman (Graduate student, supervisors Drs. K. Burns and R. Touyz) and Dr. Aurelie Nguyen (Post Doctoral Fellow in Dr. Touyz’ lab) were recipients of scholarships from the Kidney Foundation of Canada (Italian Night committee) via a peer review process conducted at the KRC.

Peer reviewed funding is not sufficient to completely support all the research projects conducted at the KRC. In this regard we are grateful for the funding contributions from the Division of Nephrology, via its business group –The Nephrology Partners of Ottawa (NPO). The KRC is also very grateful for the support it receives from the community. Proceeds from the annual Italian Night in Ottawa support research activities at our centre, and we acknowledge Mr. Mario Frangione and his team for this generous support. The Annual KRC Golf Tournament, organized by Mr. Sam Karkache and his colleagues has provided important funding support for the KRC for more than 10 years. Finally we receive tremendous support via endowed funds for research, including generous donations from Mr and Mrs Botho von Hampeln, the Swedko family, and others. It is only with this assistance and community engagement that we can really make a difference.

What do we expect in the coming year? An important goal of the KRC is to recruit world class scientists to the centre. One of these individuals will assume the Jindal Research Chair for the Prevention of Kidney Disease. A second individual will be a PhD laboratory scientist to focus on enhancing our understanding of basic mechanisms underlying kidney disease and hypertension. Recruitment of these individuals will increase collaborative research efforts amongst all members of the KRC, and will further attract individuals to the centre who seek high quality training.

Kevin D. Burns, MD, FRCPC
Professor of Medicine, Division of Nephrology
Director, Kidney Research Centre

Dr. Todd Fairhead's lab



Right: Dr. Todd Fairhead & Andreea Slatculescu

Dr. Richard Hebert's lab



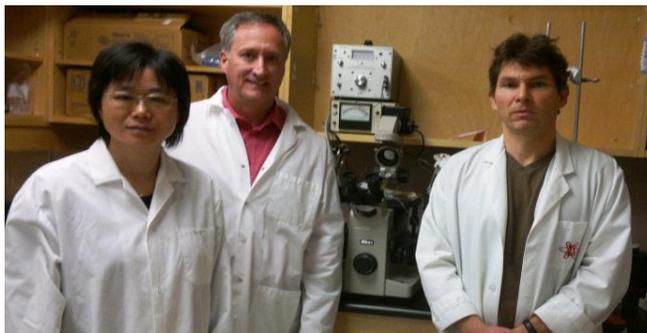
Left to Right: Dr. Rania Nashralla, Dr. Richard Hebert, Fadey Farid & Andrew Karam

Dr. Chris Kennedy's lab



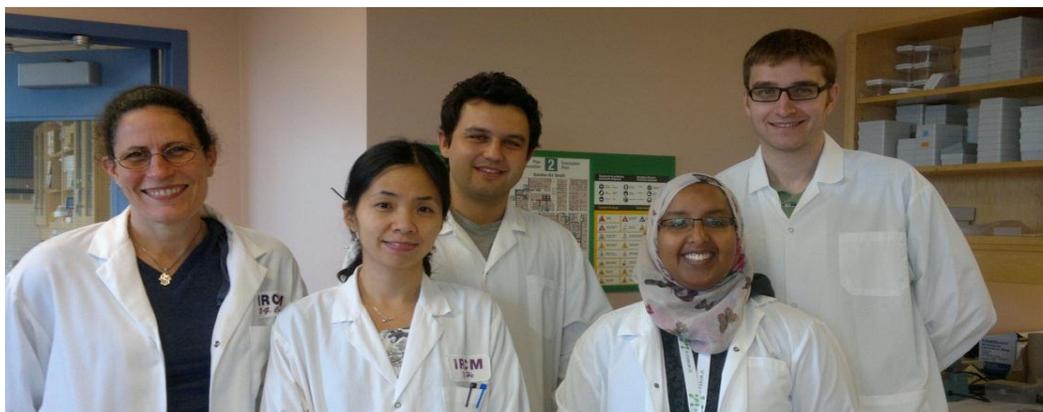
Left to Right: Dr. Harold Majane, Jean-Francois Thibodeau, Dr. Chet Holterman, Dr. Chris Kennedy, Julie Zhu
Front Left to Right: Gwendoline Bugnot, Naomi Read

Dr. Kevin Burns' lab



Left to Right: Dr. Fengxia Xiao, Dr. Kevin Burns & Joe Zimpelmann

Dr. Rhian Touyz' lab



Left to Right: Dr. Glauca Callera, Dr. Ying He, Thiago Bruder, Hiba Yussuf & Dr. Dylan Burger

Clinical Trials Research staff



Left to right: Edita Delic, Jessica Wagner, Sabrina Hamer,
Judy Cheesman, Valerie Cronin, and Scott Mullen

Technical /Administrative staff



Left to Right: Gabriele Cherton-Horvat, Pauline Messier
Anthony Carter & Dr. Alexey Gutsol

2. RESEARCH PERSONNEL

MEMBERS OF DIVISION OF NEPHROLOGY/KIDNEY RESEARCH CENTRE

<u>Name</u>	<u>Title</u>	<u>Scientific Rank</u>
Dr. Ayub Akbari	Associate Professor Division of Nephrology	Associate Investigator, OHRI
Dr. Robert Bell	Associate Professor Division of Nephrology	
Dr. Mohan Biyani	Assistant Professor Division of Nephrology	Clinical Investigator, OHRI
Dr. Pierre Antoine Brown	Assistant Professor Division of Nephrology	
Dr. Ann Bugeja	Assistant Professor Division of Nephrology	
Dr. Kevin D. Burns	Full Professor Division of Nephrology Director of Kidney Research Centre	Senior Scientist, OHRI
Dr. Janet Davis	Assistant Professor Division of Nephrology	
Dr. Cedric Edwards	Assistant Professor Division of Nephrology	
Dr. Todd Fairhead	Assistant Professor Division of Nephrology	Associate Scientist, OHRI
Dr. Richard L. Hébert	Full Professor Dept. of Cellular and Molecular Medicine University of Ottawa	
Dr. Swapnil Hiremath	Assistant Professor Division of Nephrology	Associate Investigator, OHRI
Dr. Stephanie Hoar	Assistant Professor Division of Nephrology	
Dr. Shiv Jindal	Associate Professor Division of Nephrology	
Dr. Jolanta Karpinski	Associate Professor Division of Nephrology	Clinical Investigator, OHRI

<u>Name</u>	<u>Title</u>	<u>Scientific Rank</u>
Dr. Chris Kennedy	Associate Professor Division of Nephrology	Senior Scientist, OHRI
Dr. Greg Knoll	Professor of Medicine Division of Nephrology	Scientist, OHRI
Dr. Susan Lavoie	Associate Professor Division of Nephrology	Clinical Investigator, OHRI
Dr. David Z. Levine	Emeritus Professor Division of Nephrology	Affiliate Investigator, OHRI
Dr. Peter Magner	Associate Professor Division of Nephrology Head, Division of Nephrology	Clinical Investigator, OHRI
Dr. Brendan McCormick	Assistant Professor Division of Nephrology	Clinical Investigator, OHRI
Dr. Steven Nadler	Associate Professor Division of Nephrology	
Dr. Marcel Ruzicka	Associate Professor Division of Nephrology	Clinical Investigator, OHRI
Dr. Rhian Touyz	Professor of Medicine Division of Nephrology Canada Research Chair in Hypertension	Senior Scientist, OHRI
Dr. Deborah Zimmerman	Associate Professor Division of Nephrology	Clinical Investigator, OHRI

CONSULTANT FOR DIVISION OF NEPHROLOGY

<u>Name</u>	<u>Title</u>
Dr. Soraya Moghadam	Consultant Division of Nephrology

CLINICAL SCHOLARS, TRAINEES AND FELLOWS

	<u>Name</u>	<u>Title</u>
1	Dr. Aditya Bhabhe	Clinical Fellow
2	Dr. Ankur Gupta	Clinical Fellow
3	Dr. Gavin Harman	Nephrology Trainee (RCPSC)
4	Dr. Dilip Kirpalani	Clinical Fellow
5	Dr. Amit Langote	Renal Transplant Clinical Fellow
6	Dr. Andrea Mazarova	Clinical Fellow
7	Dr. Amber Molnar	Nephrology Trainee (RCPSC)
8	Dr. Ashish Nandwani	Clinical Fellow
9	Dr. Shobhana Nayak-Rao	Clinical Fellow
10	Dr. Shankar Prasad Nagaraju	Clinical Fellow
11	Dr. Salahuddin Qutube	Clinical Fellow
12	Dr. Nasim Shahbazi	Nephrology Trainee (RCPSC)
13	Dr. Khaled M. Shamseddin	Renal Transplant Clinical Fellow
14	Dr. Hari Talreja	Clinical Fellow
15	Dr. Duy Tran	Renal Transplant Clinical Fellow
16	Dr. Alexandro Zarruck	Nephrology Trainee (RCPSC)

POST-DOCTORAL RESEARCH FELLOWS

	<u>Name</u>	<u>Project Title</u>	<u>Supervisor</u>
1	Dr. Tayze Antunes	Vascular (patho)biology of TRPM7 channels in hypertension	Dr. R. Touyz
2	Dr. Jonathan Boucher	The role of endothelial-derived microparticles in vascular inflammation	Dr. T. Fairhead
3	Dr. Marie Briet	Role of ACE2 in Vascular function Erythropoietin, vascular function and chronic kidney disease	Dr. K. Burns Dr. R. Touyz
4	Dr. Dylan Burger (KRESCENT Fellowship)	Use of human progenitor cells in acute kidney injury Role of epidermal growth factor ligands in micro particle signaling during hypertension	Dr. K. Burns Dr. R. Touyz
5	Dr. Edward (Ted) Clark (Amgen KRC Fellow)	Computerized decision support system for oral anticoagulant dosing in hemodialysis patients	Dr. G. Knoll
6	Dr. Chet Holterman	Podocyte Nox5 in diabetic nephropathy	Dr. C. Kennedy
7	Dr. Harold Majane	Nox5 derived reactive oxygen species in vascular and renal injury during hypertension	Dr. C. Kennedy
8	Dr. Aurelie Nguyen (CIHR Fellowship)	Role of c-Src in aldosterone and Ang II cross-talk in hypertension	Dr. R. Touyz
9	Dr. Mona Sedeek (KRESCENT Fellowship)	The Role of Nox1 and Nox4 in diabetic nephropathy and cardiovascular injury	Dr. R. Touyz Dr. R. Hebert
10	Dr. Alvaro Yogi (HSFC Fellowship)	Magnesium regulation of vascular functioning hypertension : role of TRPM7	Dr. R. Touyz

VISITING INTERNATIONAL PROFESSORS AND STUDENTS

	<u>Name</u>	<u>Title</u>	<u>Supervisor</u>
1	Ulisses Hipolito	Graduate Student - Brazil	Dr. R. Touyz

GRADUATE STUDENTS

<u>Name</u>	<u>Project Title</u>	<u>Supervisor</u>
1 Gwendolyn Bugnot	Podocyte TP receptors in diabetic nephropathy.	Dr. C. Kennedy
2 Renisha Nadarajah (OGST awardee)	The characterization of a transgenic mouse that overexpresses the enzyme ACE2 in the glomerular podocyte.	Dr. K. Burns
3 Naomi Read	Actinin-4 associated FSGS: a role for ubiquitin C-terminal hydrolase-1 (UCH-L1).	Dr. C. Kennedy
4 Andreea Slatculescu	Immunity in patients receiving extended home hemodialysis versus conventional in-center hemodialysis	Dr. Todd Fairhead
5 Jean-Francois Thibodeau (OGST awardee)	Prostanoid Signaling in Diabetic Nephropathy	Dr. C. Kennedy
6 Danielle Zimmerman	The role of Ang(1-7) in a mouse model or renal fibrosis.	Dr. K. Burns Dr. R. Touyz

HONORS STUDENTS

<u>Name</u>	<u>Project Title</u>	<u>Supervisor</u>
1 Dylan Kwart (NSERC awardee)	Microparticles induce senescence in cultured endothelial cells.	Dr. R. Touyz
2 Andreea Slatculescu	Immunity in patients receiving extended home hemodialysis versus conventional in-center hemodialysis	Dr. T. Fairhead

SUMMER STUDENTS

<u>Name</u>	<u>Project Title</u>	<u>Supervisor</u>
1 Samih Agaybi	ACE2 shedding in proximal tubular cells.	Dr. K. Burns
2 Shareef Akbari	Coop Summer student	Dr. K. Burns
3 Matt Cwinn	The role of Nox1 in diabetic associated vascular injury.	Dr. R. Touyz
4 Fadey Farid	Role of PGE2 and AVP on sodium channels and AQP2, as well as identification of the targeted receptors.	Dr. R. Hebert
5 Matthew Goodmurphy	Immunity in Patients Receiving Extended Home Hemodialysis Versus Conventional In-Centre Hemodialysis.	Dr. T. Fairhead
6 Andrew Karam	Prostaglandin E2 modulates vasopressin-mediated water and urea transport in mouse terminal IMCD.	Dr. R. Hebert
7 Laura MacLeod	Development of a mouse model of membranous nephropathy.	Dr. C. Kennedy
8 Ryan Seangio (Coop student)	Integrated Science student from Carleton University	Dr. Todd Fairhead
9 Chelsea Towaij	Nox5 in Diabetic Kidney Disease.	Dr. C. Kennedy

RESEARCH ASSOCIATES

	<u>Name</u>	<u>Supervisor</u>
1	Dr. Glaucia Callera	Dr. R. Touyz
2	Dr. Alexey Gutsol	Dr. K. Burns
3	Dr. Augusto Montezano	Dr. R. Touyz
4	Dr. Rania Nasrallah	Dr. R. L. Hébert
5	Dr. Fengxia Xiao	Dr. K. Burns

TECHNICAL STAFF

	<u>Name</u>	<u>Title</u>	<u>Supervisor</u>
1	Anthony Carter	Senior Animal Technician	Dr. K. Burns
2	Gabriele Cherton-Horvat	Lab Manager	Dr. K. Burns
3	Dr. Ying He	Senior Laboratory Technician	Dr. R. Touyz
4	Andreea Slatculescu	Junior Research Technician	Dr. T. Fairhead
5	Dr. Kaede Takami	Laboratory Technician	Dr. T. Fairhead
6	Hiba Yusuf	Junior Laboratory Technician	Dr. R. Touyz
7	Lihua Zhu	Laboratory Technician	Dr. C. Kennedy
8	Joseph Zimpelmann	Senior Laboratory Technician	Dr. K. Burns

CLINICAL RESEARCH STAFF

	<u>Name</u>	<u>Title</u>	<u>Supervisor</u>
1	Josee Champagne	Clinical Research Coordinator	J. Cheesman
2	Judy Cheesman	Clinical Research Manager	Dr. K. Burns
3	Jennilea Courtney	Clinical Research Coordinator	J. Cheesman
4	Valerie Cronin	Clinical Research Coordinator	J. Cheesman
5	Edita Delic	Clinical Research Coordinator	J. Cheesman
6	Marinda Dixon-Luinenburg	Research Assistant	J. Cheesman
7	Sabrina Hamer	Clinical Research Coordinator	J. Cheesman
8	Louise Lebel	BK Study Manager	Dr. G. Knoll
9	Scott Mullen	Clinical Research Assistant	J. Cheesman
10	Katrina Pizzino	Research Assistant	J. Cheesman
11	Jessica Wagner	Clinical Research Assistant II	J. Cheesman
12	Lindsay Walter	Research Assistant	J. Cheesman

ADMINISTRATIVE RESEARCH STAFF

	<u>Name</u>	<u>Title</u>	<u>Supervisor</u>
	Pauline Messier	Research Administrative Assistant	Dr. K. Burns

3. PEER-REVIEWED FUNDING

AFP: Academic Health Sciences

AHRQ: Agency for Healthcare Research and Quality

AUF: Agence Universitaire de la Francophonie

CBS: Canadian Blood Services

CFI: Canada Foundation for Innovation

CIHR: Canadian Institutes of Health Research

CRC: Canada Research Chair

CSN: Canadian Society of Nephrology

DoM: Department of Medicine, Ottawa Hospital

EC FP7: European Commission FP7

HSFO/HSFC: Heart and Stroke Foundation of Ontario/Canada

IOF: Infrastructure Operating Funds (Canada Foundation for Innovation)

JDRF: Juvenile Diabetes Research Foundation

KFOC: Kidney Foundation of Canada

KRESCENT: Kidney Research Scientist Core Education and National Training Program

OGSST: Ontario Graduate Scholarship in Science & Technology

OHRI: Ottawa Hospital Research Institute

PSI: Physicians Services Incorporated Foundation

U of O: University of Ottawa

PI	Source	Role	Term	Total amount	Title	Amount for 2011-2012
Dr. A. Akbari	CIHR	Co-App.	2010-12	\$ 253,504	The Accurate Measurement of Glomerular Filtration Rate in Patients with Kidney	
Dr. K. Burns	KFOC	PI	2010-12	\$100,000	The Role of Podocyte ACE2 in Non-Diabetic Kidney Disease	\$ 75,000
	KFOC OHRI CSN	PI	2005-11	\$5 million	The Kidney Research Scientist Core Education and National Training Program (KRESCENT)	
	CIHR	PI	2011-12	\$100,000	Translational Research on the Role of Tubular ACE2 in Kidney Disease Progression	\$ 100,000
	CIHR	PI	2011-14	\$337,923	Translational Research on the Role of Tubular ACE2 in Kidney Disease Progression	\$ 44,345
	DoM	PI	2009-12	\$420,000	Dept. of Medicine Research Chair Award	\$ 210,000
	IOF	PI	2003-11	\$1.3 million	Infrastructure Operating Funds	
	DoM	Co-App.	2010-11	\$21,000	Adipocytes, aldosterone and vascular function in hypertension.	
	DoM	PI	2009-11	\$30,000	Vascular endothelial Progenitor Cells in Acute Kidney Injury	\$ 30,000
Dr. T. Fairhead	KFOC	PI	2009-12	\$150,000	The role of RIP2 in experimental crescentic glomerulonephritis	\$ 75,000
	DoM	PI	2008-11	\$200,000	Recruitment Award	\$ 25,000
	DoM	PI	2012	\$25,000	Immunity in patients receiving extended home hemodialysis versus conventional in-center hemodialysis	\$ 12,500
Dr. R. L. Hebert	CIHR	PI	2012-16	\$779,350	Tubular Dysfunction in Diabetes: Role of PGE2/EP Receptors	\$ 155,870
	KFOC	PI	2009-11	\$100,000	The role of PPAR gamma in the mice diabetic collecting duct	\$ 25,000
	CIHR	PI	2006-11	\$604,235	Signaling of prostaglandin EP receptors in the diabetic collecting duct	\$ 30,211
Dr. S. Hiremath	CIHR	Co-App.	2011-14	\$328,530	Curcumin to Prevent Peri-operative Complications after Elective Abdominal Aortic Aneurysm Repair	
	AHRQ	Co-App.	2011	\$162,699	Troponin Cardiac Marker Interpretation During Renal Function Impairment	
		Operations	2012-13	\$42,000	same as above	\$ 13,999
Dr. C. Kennedy	CIHR	PI	2009-11	\$333,582	Prostanoid signaling in diabetic nephropathy	\$ 138,992
	CIHR	PI	2007-11	\$614,285	Function of prostaglandin EPreceptor subtypes in glomerularnephritis	\$ 153,571
	KFOC	PI	2010-12	\$100,000	α -actinin-4 associated FSGS: a role for ubiquitin C-terminalhydrolase-1 (UCH-L1)	\$ 75,000

Dr. G. Knoll					Optimizing the allocation of high-risk deceased donor kidneys: A Canadian perspective	
	CIHR	Co-App.	2012-14	\$132,982		
	AFP	Co-App	2012	\$138,030	ICES Kidney Dialysis and Transplantation Research Program	
	KFoC	PI	2011-13	\$99,838	Access to and outcomes of kidney transplantation in Ontario: is there a socioeconomic gradient?	\$ 74,880
	CIHR	Co-App	2011-15	\$404,250	A randomized controlled trial of renal hypothermia during partial nephrectomy	
	CIHR	Co-App.	2011-14	\$273,952	Animals, Humans, and the Continuity of Evidence: A Study of Clinical Translation	
	DoM	PI	2011-13	\$60,583	The implementation of a computerized decision support system for oral anticoagulant dosing in hemodialysis patients: a study of effectiveness and safety in a high-risk population	
	CIHR	Co-App.	2010-11	\$74,984	Accepting kidneys from older donors: Impact on transplant recipient outcomes.	
	CIHR	PI	2010-15	\$963,864	Effect of immunosuppressive medication use on patient outcomes following kidney transplant failure.	\$ 289,158
	CIHR	PI	2010-12	\$461,464	Quinolone prophylaxis for the prevention of BK virus infection in kidney transplantation.	\$ 288,416
	CIHR	PI	2007-12	\$230,900	Novel markers to improve the detection of declining kidney function.	\$ 57,724
	CIHR	PI	2010-12	\$253,504	The accurate measurement of glomerular filtration rate in patients with kidney disease.	\$ 133,091
	CBS	Co-App.	2010-13	\$559,712	University of Ottawa Centre for Transfusion Research Infrastructure support.	
	U of O		2010-15	\$1 million	University of Ottawa Clinical Research Chair	\$ 200,000
	CIHR	Co-App.	2009-14	\$877,796	Canadian Living Kidney Donor Safety Study Role.	
Dr. M. Ruzicka	HSFC	Co-App.	2009-12	\$110,135	Sympathetic activity in patients with end-stage renal disease on peritoneal dialysis	
	HSFC	Co-App.	2007-11	\$325,000	RAS blockade and sympathetic hyperactivity in humans post MI	
	DoM	Co-App.	2010-11	\$21,000	Adipocytes, aldosterone and vascular function in hypertension.	
	HSFO	Co-App.	2010-11	\$49,887	A comparison of cardiovascular risk between Chinese & South Asian Canadians & residents of China and India.	
Dr. R. Touyz	CIHR	PI	2010-15	\$891,000	Vascular (patho)biology of TRPM7 channels in hypertension	\$ 267,300
	JDRF	Co-App.	2010-13	\$1.4 million	Nox-derived ROS: Renal and vascular complications in type 1 diabetes.	
	CIHR	Co-Inv.	2010-11	\$50,000	Early vascular aging (EVA) hypertension and microparticles	
	CRC		2005-12	\$1.4 million	Canada Research Chair in Hypertension.	\$ 300,000
	CIHR	PI	2011-16	\$780,000	Nox homologues, redox signaling and vascular biology in hypertension.	\$ 195,000
	AUF	Co-Inv.	2011-12	\$99,384	Oxidative stress & complications of diabetes.	
	EC-FP7	Co-App.	2012-16	\$280,000 euros apprx 369,012	RADOX - RADical Reduction of Oxidative stress in cardiovascular diseases	

Dr. D. Zimmerman	Baxter Peer reviewed	Co-Inv.	2011-13	\$130,000	A pilot study to develop a predictive tool for assessing the risk of peritoneal dialysis technique failure for patients receiving Peritoneal Dialysis therapy. Clinical Evidence Council – PD	
	Baxter Peer reviewed	PI	2012-15	\$156,000	Development of a “Phosphate Counting Program” on an iTouch to simplify Self-Management of Dietary Phosphate by Patients with ESRD Treated with Peritoneal Dialysis	\$ 4,333
	CIHR	Co-App.	2008-13	\$3,625,000	Genetic Markers of Risk in Hemodialysis patients	
Dr. M. Briet	HSFC	Fellowship	2011-12	\$50,000	Role of ACE2 in Vascular function & Erythropoietin, vascular function and chronic kidney disease	\$ 41,666
Dr. D. Burger	KRESCENT	Fellowship	2010-12	\$110,000	Role of epidermal growth factor ligands in microparticle signalling during hypertension	\$ 82,498
Dr. A. Montezano	CIHR	Fellowship	2009-11	\$86,250	Role of c-Src in aldosterone and Ang II cross-talk in hypertension	\$ 6,876
R. Nadarajah	OGSST	Scholarship	2010-11	\$12,000	The role of podocyte ACE2 in diabetic nephropathy	\$ 8,000
Dr. A Nguyen	CIHR	Fellowship	2010-13	\$131,250	Adipocytes, aldosterone and vascular biology in hypertension	\$ 65,626
Dr. Olebogeng Maj	CIHR/HOPE	Fellowship	2012-13	\$80,000	Nox5 derived oxygen species in vascular and renal injury during hypertension	\$ 20,000
Dr. M. Sedeek	KRESCENT	Fellowship	2010-12	\$110,000	Role of Nox4 in the development of diabetic nephropathy	\$ 82,498
J.F. Thibodeau	OGSST	Studentship	2010-12	\$25,000	Prostanoid signaling in diabetic nephropathy: impact on podocyte health	\$ 22,500
Dr. A Yogi	HSFC	Fellowship	2009-11	\$80,000	Magnesium regulation of vascular function in hypertension: role of TRPM7	\$ 20,000

TOTAL OPERATING GRANT: \$2,474,390.00

*TOTAL SALARY AWARDS: \$ 849,664.00

4. SCHOLARLY ACTIVITIES & ACHIEVEMENTS

A) PUBLICATIONS 2011-2012

- 1 Costiniuk CT, McCarthy AE, Talreja H, **Zimmerman D**, Liu TT, Owen E, Angel JB. Acute renal failure and disseminated intravascular coagulation associated with rifampin in tuberculosis treatment. *Int J Tuberc Lung Dis.* 15(3):421, 2011.
- 2 Nasrallah R, Paris G, **Hébert RL**. Hypertonicity increases sodium transporters in cortical collecting duct cells independently of PGE2. *Biochem Biophys Res Comm.* 418(2):372-7, 2012.
- 3 Nadarajah R, Milagres R, Dilauro M, Gutsol A, Xiao F, Zimpelmann J, **Kennedy C**, Wysocki J, Batlle D, **Burns KD**. Podocyte-specific overexpression of human angiotensin-converting enzyme 2 attenuates diabetic nephropathy in mice. *Kidney Int.* 82(3):292-303, 2012.
- 4 Hale TM, Robertson SJ, **Burns KD**, Deblois D. Short-term ACE inhibition confers long-term protection against target organ damage. *Hypertens Res.* 35(6):604-10, 2012.
- 5 Jain AK, Cuerden MS, McLeod I, Hemmelgarn B, **Akbari A**, Tonelli M, Quinn RR, Oliver MJ, Garg AX. Reporting of the estimated glomerular filtration rate was associated with increased use of angiotensin-converting enzyme inhibitors and angiotensin-II receptor blockers in CKD. *Kidney Int.* 81(12):1248-53, 2012.
- 6 **Akbari A**, Grimshaw J, Stacey D, Hogg W, Ramsay T, Cheng-Fitzpatrick M, **Magner P**, **Bell R**, **Karpinski J**. Change in appropriate referrals to nephrologists after the introduction of automatic reporting of the estimated glomerular filtration rate. *CMAJ.* 184(5):E269-76, 2012.
- 7 Campbell M, **Akbari A**, Amos S, Keyes C. Feasibility of providing nephrology services to remote communities with videoconferencing. *J Telemed Telecare.* Jan 1;18(1):13-6, 2012.
- 8 Nevis IF, Reitsma A, Dominic A, McDonald S, Thabane L, Akl EA, Hladunewich M, **Akbari A**, Joseph G, Sia W, Iansavichus AV, Garg AX. Pregnancy outcomes in women with chronic kidney disease: a systematic review. *Clin J Am Soc Nephrol.* 6(11):2587-98, 2011.
- 9 White CA, **Akbari A**. The estimation, measurement, and relevance of the glomerular filtration rate in stage 5 chronic kidney disease. *Semin Dial.* 24(5):540-9, 2011.
- 10 Kagoma YK, Weir MA, Iansavichus AV, Hemmelgarn BR, **Akbari A**, Patel UD, Garg AX, Jain AK. Impact of estimated GFR reporting on patients, clinicians, and health-care systems: a systematic review. *Am J Kidney Dis.* 57(4):592-601, 2011.
- 11 Clemens K, Boudville N, Dew MA, Geddes C, Gill JS, Jassal V, Klarenbach S, **Knoll G**, Muirhead N, Prasad GVR, Storsley L, Treleaven D, Garg A, for the Donor Nephrectomy Outcomes Research (DONOR) Network. The Long-Term Quality of Life of Living Kidney Donors: A Multicenter Cohort Study. *Am J Transplant.* 11(4): 463–469, 2011.
- 12 Young A, Kim SJ, Speechley MR, Huang A, **Knoll GA**, Prasad GVR, Treleaven D, Diamant M, Garg AX for the Donor Nephrectomy Outcomes Research (DONOR) Network. Accepting Kidneys from Older Living Donors: Impact on Transplant Recipient Outcomes. *Am J Transplant.* 11(4): 743–750, 2011.
- 13 Shamseddin MK, **Knoll GA**. Post-Transplant Proteinuria: An Approach to Diagnosis and Management. *Clin J Am Soc Nephrol.* 6(7):1786-93, 2011.

- 14 Hernandez-Alejandro R, Wall W, Jevnikar A, Luke P, Sharpe M, Russell D, Gangji A, Cole E, Kim SJ, Selzner M, Keshavjee S, Hebert D, Prasad GVR, Baker A, **Knoll G**, Winterbottom R, Pagliarello G, Payne C, Zaltzman J. Organ donation after cardiac death: Donor and recipient outcomes after the first 3 years of the Ontario experience. *Can J Anaesth.* 58(7):599-605, 2011.
- 15 White CA, Rule AD, Collier CP, Akbari A, Lieske J, Lepage N, Doucette S, **Knoll GA**. The impact of inter-laboratory differences in cystatin C assay measurement on glomerular filtration rate estimation. *Clin J Am Soc Nephrol.* 6(9):2150-6, 2011.
- 16 Tonelli M, Wiebe N, **Knoll G**, Bello A, Browne S, Jadhav D, Klarenbach S, Gill J. Systematic review: Kidney transplantation compared with dialysis in clinically relevant outcomes. *Am J Transplant.*
- 17 Young A, Hodsman AB, Boudville N, Geddes C, Gill J, Goltzman D, Jassal SV, Klarenbach S, **Knoll G**, Muirhead N, Prasad GVR, Treleaven D, Garg AX. Bone and Mineral Metabolism and FGF-23 after Kidney Donation. *Am J Kidney Dis.* 59(6):761-9, 2012.
- 18 **Hiremath S**, **Knoll G**, Weinstein MC. Should The Arteriovenous Fistula Be Created Before Starting Dialysis?: A Decision Analytic Approach. *PLoS One.* 6(12):e28453, 2011.
- 19 Lam N, Huang A, Feldman L, Gill JS, Karpinski M, Kim J, Klarenbach S, **Knoll GA**, Lentine K, Nguan C, Parikh CP, Prasad R, Treleaven D, Young A, Garg AX, for the Donor Nephrectomy Outcomes Research (DONOR) Network. Acute Dialysis Risk in Living Kidney Donors. *Nephrol Dial Transplant.* 27(8):3291-3295, 2012.
- 20 Garg AX, Meirambayeva A, Huang A, Kim J, Prasad R, **Knoll GA**, Boudville N, Lok C, McFarlane P, Karpinski M, Storsley L, Klarenbach S, Lam N, Thomas SM, Dipchand C, Reese P, Doshi M, Gibney E, Taub K, Young A, for the Donor Nephrectomy Outcomes Research (DONOR) Network. Cardio-vascular disease in people who donated a kidney: A matched cohort study. *BMJ.* 1;344:e1203, 2012.
- 21 Daskalopoulou SS, Khan NA, Quinn RR, **Ruzicka M**, McKay DW, Hackam DG, Rabkin SW, Rabi DM, Gilbert RE, Padwal RS, Dawes M, **Touyz RM**, Campbell TS, Cloutier L, Grover S, Honos G, Herman RJ, Schiffrin EL, Bolli P, Wilson T, Feldman RD, Lindsay MP, Hemmelgarn BR, Hill MD, Gelfer M, **Burns KD**, Vallée M, Prasad GV, Lebel M, McLean D, Arnold JM, Moe GW, Howlett JG, Boulanger JM, Larochelle P, Leiter LA, Jones C, Ogilvie RI, Woo V, Kaczorowski J, Trudeau L, Bacon SL, Petrella RJ, Milot A, Stone JA, Drouin D, Lamarre-Cliché M, Godwin M, Tremblay G, Hamet P, Fodor G, Carruthers SG, Pylypchuk G, Burgess E, Lewanczuk R, Dresser GK, Penner B, Hegele RA, McFarlane PA, Sharma M, Campbell NR, Reid D, Poirier L, Tobe SW; Canadian Hypertension Education Program. The 2012 Canadian Hypertension Education Program Recommendations for the management of hypertension: blood pressure measurement, diagnosis, assessment of risk, and therapy. *Can J Cardiol.* 28(3):270-87, 2012.
- 22 Chignalia AZ, Schuldt EZ, Camargo LL, Montezano AC, Callera GE, Laurindo FR, Lopes LR, Avellar MC, Carvalho MH, Fortes ZB, **Touyz RM**, Tostes RC. Testosterone Induces Vascular Smooth Muscle Cell Migration by NADPH Oxidase and c-Src-Dependent Pathways. *Hypertension.* 59(6):1263-71. 2012.
- 23 **Touyz RM**, Montezano AC. Vascular nox4: a multifarious NADPH oxidase. *Circ Res.* 110(9):1159-61.
- 24 Briones AM, Nguyen Dinh Cat A, Callera GE, Yogi A, Burger D, He Y, Corrêa JW, Gagnon AM, Gomez-Sanchez CE, Gomez-Sanchez EP, Sorisky A, Ooi TC, **Ruzicka M**, **Burns KD**, **Touyz RM**. Adipocytes produce aldosterone through calcineurin-dependent signaling pathways: implications in diabetes mellitus-associated obesity and vascular dysfunction. *Hypertension.* 59(5):1069-78. 2012.

- 25 Paravicini TM, Montezano AC, Yusuf H, **Touyz RM**. Activation of vascular p38MAPK by mechanical stretch is independent of c-Src and NADPH oxidase: influence of hypertension and angiotensin II. *J Am Soc Hypertens.* 6(3):169-78. 2012.
- 26 Burger D, **Touyz RM**. Cellular biomarkers of endothelial health: microparticles, endothelial progenitor cells, and circulating endothelial cells. *J Am Soc Hypertens.* 6(2):85-99, 2012.
- 27 **Touyz RM**. New insights into mechanisms of hypertension. *Curr Opin Nephrol Hypertens.* 21(2):119-21. 2012.
- 28 Burger D, Veerabhadrapa P, Charchar F, Tomaszewski M, Harrap S, Carlberg B, **Touyz RM**. Report of the first International Society of Hypertension (ISH) Trainee/New Investigator Symposium: A Global Hypertension Initiative. *J Hypertens.* 30(3):631-2, 2012.
- 29 White M, Montezano AC, **Touyz RM**. Angiotensin II signalling and calcineurin in cardiac fibroblasts: differential effects of calcineurin inhibitors FK506 and cyclosporine A. *Ther Adv Cardiovasc Dis.* 6(1):5-14.
- 30 Rocha JT, Hipólito UV, Callera GE, Yogi A, Neto Filho Mdos A, Bendhack LM, **Touyz RM**, Tirapelli CR. Ethanol induces vascular relaxation via redox-sensitive and nitric oxide-dependent pathways. *Vascul Pharmacol.* 56(1-2):74-83. 2012.
- 31 Veerabhadrapa P, Burger D, Charchar F, Tomaszewski M, Carlberg B, Harrap S, **Touyz RM**. Council for High Blood Pressure Research/InterAmerican Society of Hypertension/International Society of Hypertension: first New Investigators Symposium at the High Blood Pressure Research 2011 Scientific Sessions. *Hypertension.* 59(2):382-3. 2012.
- 32 Chung Y, Abou-Nassar KE, Li Y, Filion L, Watpool I, McArdle T, McIntyre L, Ramsay T, Cheesman J, **Touyz R**, **Burns KD**, Allan DS. Vascular progenitor recruitment in critically ill patients with acute kidney injury. *Clin Invest Med.* 34(5):E304. 2011.
- 33 Nguyen Dinh Cat A, **Touyz RM**. A new look at the renin-angiotensin system-focusing on the vascular system. *Peptides.* 32(10):2141-50. 2011.
- 34 Montezano AC, **Touyz RM**. Reactive oxygen species and endothelial function-role of nitric oxide synthase uncoupling and Nox family nicotinamide adenine dinucleotide phosphate oxidases. *Basic Clin Pharmacol Toxicol.* 110(1):87-94. 2012.
- 35 **Touyz RM**, Grassi G. Renal biomarkers: novel surrogates of small and large vessel disease? *J Hypertens.* 29(9):1700-2. 2011.
- 36 **Touyz RM**. Advancement in hypertension pathogenesis: some new concepts. *Curr Opin Nephrol Hypertens.* 20(2):105-6. 2011.
- 37 Nguyen Dinh Cat A, **Touyz RM**. Cell signaling of angiotensin II on vascular tone: novel mechanisms. *Curr Hypertens Rep.* 13(2):122-8. 2011.
- 38 Montezano AC, **Touyz RM**. Oxidative stress, Noxs, and hypertension: Experimental evidence and clinical controversies. *Ann Med.* Jun;44 Suppl 1:S2-S16, 2012
- 39 **Karpinski J**, Marks M. Rewarding development of teaching skills and educational scholarship. *Med Educ.* Nov;45(11):1150, 2011.

- 40 Rabi DM, Daskalopoulou SS, Padwal RS, Khan NA, Grover SA, Hackam DG, Myers MG, McKay DW, Quinn RR, Hemmelgarn BR, Cloutier L, Bolli P, Hill MD, Wilson T, Penner B, Burgess E, Lamarre-Cliché M, McLean D, Schiffrin EL, Honos G, Mann K, Tremblay G, Milot A, Chockalingam A, Rabkin SW, Dawes M, **Touyz RM**, **Burns KD**, **Ruzicka M**, Campbell NR, Vallée M, Prasad GV, Lebel M, Campbell TS, Lindsay MP, Herman RJ, Larochelle P, Feldman RD, Arnold JM, Moe GW, Howlett JG, Trudeau L, Bacon SL, Petrella RJ, Lewanczuk R, Stone JA, Drouin D, Boulanger JM, Sharma M, Hamet P, Fodor G, Dresser GK, Carruthers SG, Pylypchuk G, Gilbert RE, Leiter LA, Jones C, Ogilvie RI, Woo V, McFarlane PA, Hegele RA, Poirier L, Tobe SW; Canadian Hypertension Education Program. The 2011 Canadian Hypertension Education Program recommendations for the management of hypertension: blood pressure measurement, diagnosis, assessment of risk, and therapy. *Can J Cardiol.* 27(4):415-433.e1-2. 2011.
- 41 Nguyen Dinh Cat A, Briones AM, Callera GE, Yogi A, He Y, Montezano AC, **Touyz RM**. Adipocyte-derived factors regulate vascular smooth muscle cells through mineralocorticoid and glucocorticoid receptors. *Hypertension.* 58(3):479-88. 2011.
- 42 Savoia C, Burger D, Nishigaki N, Montezano A, **Touyz RM**. Angiotensin II and the vascular phenotype in hypertension. *Expert Rev Mol Med.* 13:e11.2011.
- 43 Al Ghouleh I, Khoo NK, Knaus UG, Griendling KK, **Touyz RM**, Thannickal VJ, Barchowsky A, Nauseef WM, Kelley EE, Bauer PM, Darley-Usmar V, Shiva S, Cifuentes-Pagano E, Freeman BA, Gladwin MT, Pagano PJ. Oxidases and peroxidases in cardiovascular and lung disease: new concepts in reactive oxygen species signaling. *Free Radic Biol Med.* 51(7):1271-88. 2011.
- 44 Yogi A, Callera GE, O'Connor SE, He Y, Correa JW, Tostes RC, Mazur A, **Touyz RM**. Dysregulation of renal transient receptor potential melastatin 6/7 but not paracellin-1 in aldosterone-induced hypertension and kidney damage in a model of hereditary hypomagnesemia. *J Hypertens.* 29(7):1400-10.2011.
- 45 Burger D, Montezano AC, Nishigaki N, He Y, Carter A, **Touyz RM**. Endothelial microparticle formation by angiotensin II is mediated via Ang II receptor type I/NADPH oxidase/ Rho kinase pathways targeted to lipid rafts. *Arterioscler Thromb Vasc Biol.* 31(8):1898-907. 2011.
- 46 Callera GE, Yogi A, Briones AM, Montezano AC, He Y, Tostes RC, Schiffrin EL, **Touyz RM**. Vascular proinflammatory responses by aldosterone are mediated via c-Src trafficking to cholesterol-rich microdomains: role of PDGFR. *Cardiovasc Res.* 91(4):720-31. 2011.
- 47 **Touyz RM**, Briones AM, Sedeek M, Burger D, Montezano AC. NOX isoforms and reactive oxygen species in vascular health. *Mol Interv.* 11(1):27-35. 2011.
- 48 Briones AM, Tabet F, Callera GE, Montezano AC, Yogi A, He Y, Quinn MT, Salaices M, **Touyz RM**. Differential regulation of Nox1, Nox2 and Nox4 in vascular smooth muscle cells from WKY and SHR. *J Am Soc Hypertens.* 5(3):137-53. 2011.
- 49 Yogi A, Callera GE, Aranha AB, Antunes TT, Graham D, McBride M, Dominiczak A, **Touyz RM**. Sphingosine-1-phosphate-induced inflammation involves receptor tyrosine kinase transactivation in vascular cells: upregulation in hypertension. *Hypertension.* 57(4):809-18. 2011.
- 50 Tabet F, Lambert G, Cuesta Torres LF, Hou L, Sotirchos I, **Touyz RM**, Jenkins AJ, Barter PJ, Rye KA. Lipid-free apolipoprotein A-I and discoidal reconstituted high-density lipoproteins differentially inhibit glucose-induced oxidative stress in human macrophages. *Arterioscler Thromb Vasc Biol.* 31(5):1192-20. 2011.

- 51 Meziri F, Binda D, Touati S, Pellegrin M, Berthelot A, **Touyz RM**, Laurant P. Exercise aggravates cardiovascular risks and mortality in rats with disrupted nitric oxide pathway and treated with recombinant human erythropoietin. *Eur J Appl Physiol.* 111(8):1929-38. 2011.
- 52 Yogi A, Callera GE, Antunes TT, Tostes RC, **Touyz RM**. Transient receptor potential melastatin 7(TRPM7) cation channels, magnesium and the vascular system in hypertension. *Circ J.* 75(2):237-45.2011.
- 53 Montezano AC, Burger D, Ceravolo GS, Yusuf H, Montero M, **Touyz RM**. Novel Nox homologues in the vasculature: focusing on Nox4 and Nox5. *Clin Sci (Lond).* 120(4):131-41, 2011.
- 54 **Touyz RM**, Briones AM. Reactive oxygen species and vascular biology: implications in human hypertension. *Hypertens Res.* 34(1):5-14, 2011.
- 55 Montezano AC, **Touyz RM**. Molecular mechanisms of hypertension-reactive oxygen species and antioxidants: a basic science update for the clinician. *Can J Cardiol.* 28(3):288-95, 2012.
- 56 Miller M, **McCormick B**, **Lavoie S**, **Biyani M**, **Zimmerman D**. Fluoroscopic manipulation of peritoneal dialysis catheters: outcomes and factors associated with successful manipulation. *Clin J Am Soc Nephrol.* 7(5):795-800, 2012.
- 57 Gupta A, **Biyani M**, Gupta M, Saltel ME. Hypercreatinemia: think beyond acute kidney injury. *Can J Urol.* 18(6):6066-8. 2011.
- 58 Gupta A, Gupta P, **Biyani M**. Targeted therapies in diabetic nephropathy: an update. *J Nephrol.* 24(6):686-95, 2011.
- 59 Gupta A, **Biyani M**, Khaira A. Vancomycin nephrotoxicity: myths and facts. *Neth J Med.* 69(9):379-83. 2011.
- 60 Gupta A, **Biyani M**, Robertson SJ. Renal cocktail: too hard for a diabetic. *Int Urol Nephrol.*44(4):1289-92, 2012.
- 61 Gupta A, **Bugeja A**, Kirpalani D. Tenofovir-induced nephrotoxicity: myths and facts. *Saudi J Kidney Dis Transpl.* 23(1):148-9, 2012.
- 62 LeBlanc SE, Atanya M, **Burns KD** and Munger R. Quantitative Impact of Small Angle Forward Scatter on Whole Blood Oximetry Using a Beer-Lambert Absorbance Model. *Analyst.* 136(8):1637-43, 2011.
- 63 Mendelssohn DC, Curtis B, Yeates K, Langlois S, MacRae JM, Semeniuk LM, Camacho F, and McFarlane P, and STARRT Study Investigators (includes **Burns KD**). Suboptimal initiation of dialysis with and without early referral to a nephrologist. *Nephrol Dial Transplant* 26:2959-2965, 2011.
- 64 Hladenuwicz M, Lai V, Miller J, Cherney D, **Burns KD**, Zimpelmann J, O'Brien T, Gandhi S, Kiss A, Kingdom J, Odutayo A. Postpartum Assessment of the Renin Angiotensin System in Women with Previous Severe, Early-Onset Pre-Eclampsia. *J Clin Endocrinol Metab* 96:3517-24, 2011.
- 65 Labonté L, Li Y, Addison C, Brand M, Javidnia H, Corsten MJ, **Burns KD** and Allan D. Distinct profile of vascular progenitor attachment to extracellular matrix proteins in cancer patients. *Clin Invest Med.* 35(2) E86-95, 2012
- 66 **Zimmerman D** and **Burns KD**. Angiotensin-(1-7) in Kidney Disease: A review of the controversies. *Clinical Science*, 123(6):333-46, 2012.

- 67 Briet M and **Burns KD**. Chronic Kidney Disease and Vascular Remodeling: Molecular Mechanisms and Clinical Implications. *Clinical Science*, 123(7):399-416, 2012.
- 68 Xiao F, **Hiremath S**, **Knoll G**, Zimpelmann J, Srivaratharajah K, Jadhav D, Fergusson D, **Kennedy CRJ** and **Burns KD**. Increased Urinary Angiotensin-Converting Enzyme 2 in Renal Transplant Patients with Diabetes. *PLoS One*, 7(5):e37649, 2012.
- 69 Bilodeau JF, **Lavoie SD**, Brown PA, **McCormick BB**. No change in small molecule transport with prolonged embedding of peritoneal dialysis catheters. *Perit Dial Int.* ;31(1):104, 2011.
- 70 Blake PG, Bargman JM, Brimble KS, Davison SN, Hirsch D, **McCormick BB**, Suri RS, Taylor P, Zalunardo N, Tonelli M; the Canadian Society of Nephrology Work Group on Adequacy of Peritoneal Dialysis. Clinical practice guidelines and recommendations on peritoneal dialysis adequacy. *Perit Dial Int.* 31(2):218-39. 2011.
- 71 Shahbazi N, **McCormick BB**. Peritoneal dialysis catheter insertion strategies and maintenance of catheter function. *Semin Nephrol.* Mar;31:138-51, 2011.
- 72 Su WS, Gangji AS, Margetts P, Bosch J, Yusuf S, Clase C, Ganame J, Noseworthy M, Lonn E, Jain A, **McCormick B**, Brimble S. The Fluid Study protocol: a randomized controlled study on the effects of bioimpedance analysis and vitamin D on left ventricular mass in peritoneal dialysis patients. *Perit Dial Int.* Sep-Oct;31(5):529-36, 2011.
- 73 Liddy C, Hogg W, Russell G, Wells G, Deri Armstrong C, **Akbari A**, Dahrouge S, Taljaard M, Mayo-Bruinsma L, Singh J, Cornett A. Improved Delivery of Cardiovascular Care ((DOCC) Through Outreach Facilitation: Study Protocol and Implementation Details of a Cluster Randomized Controlled Trial in Primary Care. *Implement Sci.* Sept 27; 6(1):110, 2011.
- 74 Montoya L, Liddy C, Hogg W, Papadakis S, Jojeiji L, Russell G, **Akbari A**, Pipe A, Higginson L. Development of the Champlain Primary Care Cardiovascular Disease Prevention and Management Guideline: Tailoring Evidence to Community Practice. *Can Fam Physician* 57 e202-e207, 2011.
- 75 Gupta A, **Biyani M**. News and Filler: Renal Evolution: Crossword. *Indian Journal of Nephrology.* 21(2):136, 2011.
- 76 Gupta A, **Biyani M**. Icodextrin Associated Skin Rash. Unusual Presentation. *Indian Journal of Nephrology.* Jan-Feb; 22(1):62-63, 2012.
- 77 Gupta A, **Biyani M**. Dyselectrolytemias: Word Search. *Indian Journal of Nephrology* Jan-Feb;22(1):70-7, 2012.
- 78 Nesralla GE, Lindsay RM, Cuerden MS, Garg AX, Port F, Austin PC, Moist LM, Pierratos A, Chan CT, **Zimmerman D**, Lockridge RS, Couchoud C, Chazot C, Ofsthun N, Levin A, Copland M, Courtney M, Steele A, McFarlane P, Geary DF, Pauly, RP. Intensive Hemodialysis Associated with Improved Survival Compared with Conventional Hemodialysis. *JASN.* April;23(4):696-705, 2012.
- 79 Allen N, Schwartz D, Komenda P, Pauly R, **Zimmerman D**, Tanna G, Schiff J, Rigatto C, Sood M. International Practice Patterns and Factors Associated with Non-Conventional Hemodialysis Utilization. *BMC Nephrology* . Dec 5,12:66, 2011.
- 80 Chaudhry M, Bholra C, Joarder M, **Zimmerman D**, Quinn P, Mendelssohn D, Lok CE. Seeing Eye to Eye: The Key to Reducing Catheter Use. *J Vasc Access.* 15(3): 120-126, 2011.

81 Bello A, Thadhani R, Hemmeigarn B, Klarenbach S, Gill J. Chan C, **Zimmerman D**, Holmes D, Cembrowski G, Opgenorth D, Sibrian R, Karkhaneh M, Wiebe N, Tonelli M. Design and Implementation of the Canadian Kidney Disease Cohort Study (CKDCS): A Prospective Observational Study of Incident Hemodialysis Patients. *BMC Nephrology*. Feb 16;12:10., 2011.

B) BOOK CHAPTERS 2011

- 1 Schiffrin EL, **Touyz RM**. Oxidative stress in arterial hypertension and atherosclerosis. In “Principles of Free Radical Biomedicine”. Eds.: K Pantopoulos and H Schipper, Nova Science Publishers, Inc, 2012.
- 2 **Touyz RM**, Schiffrin EL. Smooth muscle disease. Arterial hypertension. In “Muscle: Fundamental biology and mechanisms of disease”. Eds. J. Hill and EN Olson. Publishers: Elsevier Press Section D, Chapter 99:1301-1311, 2012.
- 3 Montezano AC, **Touyz RM**. Reactive oxygen species and the Cardiovascular System. In “Integrated systems physiology”. Ed. N, Granger and JP. Granger, 2012
- 4 Burger D, **Touyz RM**. Biomarkers in Hypertension, In Special issues in hypertension. Eds. A.J Berbari and G. Mancia. Publ. Springer, 2012
- 5 Patel MB, **Hiremath S**, Contractor T, Thakur RK. Implantable Cardioverter-Defibrillators in End-Stage Renal Disease. Cardiac Electrophysiology Clinics, 3(4), 641-650, 2011.

C) RESEARCH AWARDS

- 1 2007-11 NIH Member of Hypertension and Microcirculation Study Section (Dr. R. Touyz).
- 2 2008- Dr. Kevin Burns appointed Chair, Biomedical Scientific Committee, KFOC
- 3 2011 Cardiovascular Research Day Award (Dr. T. Antunes from Dr. R. Touyz' lab)
- 4 2011 CSN trainee presentation award (2nd place). (Dr. D. Burger from Dr. Touyz' lab)
- 5 2011 CSN trainee abstract award (3rd place). (Dr. M. Sedeek from Drs. Touyz & Hébert lab)
- 6 2011 CSCI/CIHR Resident Research Prize, Amber Molnar (Nephrology Fellow)
- 7 2011 PSI Foundation Resident Research Prize, Amber Molnar (Nephrology Fellow)
- 8 2011 The Harold W. Ashenmil Award from The Kidney Foundation of Canada (Dr. K. Burns).
- 9 2012 Best oral presentation by a trainee at the Canadian Oxidative Stress Consortium (Dr. Chet Holterman from Dr. Kennedy's lab).
- 10 2012 Oral Presentation Award Winner Subspecialty (PGY5) for Resident Research Day: Department of Medicine (Andrea Mazarova)
- 11 2012 Fellow of Canadian Academy of Health Sciences (CAHS). (Dr. R. Touyz)
- 12 2012 Robert M. Berne Distinguished Lecturer of the American Physiological Society (Dr. R. Touyz)

D) INVITED PRESENTATIONS 2011

- 1 2011- **McCormick B** - EuroPD APD Symposium, Clinical Cases in APD, Birmingham, UK
- 2 2011 - **McCormick B** - Sunnybrook Nephrology Rounds, Resistant Hypertension in CKD: A Role for Aldosterone Blockade, Toronto, Canada.
- 3 January 11, 2011 - **Touyz RM** Adipocytes and vascular (patho)biology: role of the renin-angiotensin-aldosterone system. Cardiology Rounds. Univ of Toronto. Toronto, Canada.
- 4 January 19, 2011- **Touyz RM**. Adipocytes, vascular pathobiology and the renin-angiotensin-aldosterone system. Endocrinology Grand Rounds. Brigham and Women's Hospital. Boston, USA.
- 5 January 18-20 - **Touyz RM**. Novel concepts in aldosterone signaling and networking with angiotensin II. Richard Underwood Memorial Visiting Professorship. Brigham and Women's Hospital, Harvard Medical School. Boston, USA.
- 6 January 20, 2011- **Touyz RM**. Adipocytes, vascular biology and aldosterone – clinical implications. Cardiology Grand Rounds. Brigham and Women's Hospital. Boston. USA.
- 7 March 2, 2011 - **Knoll G**. ABC's of Clinical Trial Design. Canadian Society of Transplantation – American Society of Transplantation Distinguished Fellows Research Symposium. Canadian Society of Transplantation Annual Meeting. Mont-Tremblant, Quebec, Canada.
- 8 March 16-17, 2011 - **Touyz RM**. Novel signaling in hypertension. Vascular Biology Center of the Medical College of Georgia. USA.
- 9 April 5, 2011 - **Burns K**. 51. IFKF Vancouver Int. Mtg. KRESCENT 2011. Vancouver, BC. Canada.
- 10 April 7-8, 2011 - **Burns K**. 51. KRESCENT Workshop. Vancouver, BC. Canada.
- 11 April 9, 2011- **Knoll G**. Should Proteinuria be a Target for Therapy in Transplant Patients? World Congress of Nephrology, Vancouver, British Columbia, Canada.
- 12 April 10, 2011 - **Akbari A**. Interpretation and use of eGFR in clinical practice. World Congress of Nephrology (conducted by International Society of Nephrology). Vancouver, BC, Canada.
- 13 April 22, 2011 - **Zimmerman D**. Conventional Hemodialysis at the Canadian Society of Nephrology Annual meeting, Vancouver, BC. Canada.
- 14 April 29, 2011 - **Knoll G** Science of Clinical Trial Design I - Principals of Study Design. American Society of Transplantation Clinical Trials Symposium. Philadelphia, PA, USA.
- 15 April 28-30, 2011 - **Touyz RM**. New concepts relating to aldosterone and its signaling in vascular biology. Vasoactive Peptide meeting. Ouro Preto, Minas Gerais, Brazil.
- 16 May 1, 2011- **Knoll G**. Surrogate Endpoints in Transplantation Workshop. 2011 American Transplant Congress. Philadelphia, PA, USA.
- 17 May 1-3, 2011 - **Touyz RM**. Magnesium in Clinical Medicine. American Soc Pediatric Research. Denver, Colorado, USA.
- 18 May 26, 2011 - **Touyz RM**. Reactive oxygen species, redox signaling and vascular biology. Canadian Society of Pharmacology and Therapeutics. Montreal.
- 19 June 8-10, 2011 - **Touyz RM**. Magnesium and menopause. EuroMag Bologna 2011, International Society of Development of Research on Magnesium (SDRM). Bologna San Giovanni in Monte, Italy.
- 20 September 7-9, 2011 - **Touyz RM**. Nox, ROS and hypertension. 17th Paavo Nurmi Symposium, Finland.
- 21 September 14-17, 2011 - **Burns K**. 57. XLV National Congress of Nephrology. ACE2 in The Kidney. Acapulco, Guerrero. Mexico
- 22 September 14-17, 2011 - **Burns K**. 57. XLV National Congress of Nephrology. The KRESCENT Program: A National Research Training Initiative. Acapulco, Guerrero. Mexico

- 23 September 17-18, 2011 - **Knoll G.** Donation after Cardiac Death: Kidney. 2011 Canadian Transplant Fellows Symposium, Toronto, Canada.
- 24 September 24-26, 2011 - **Touyz RM.** Oxidative Stress and Hypertension – Current Challenges and Future. High Blood Pressure Research Council, AHA. Orlando, USA.
- 25 October 2-4, 2011 - **Touyz RM.** Assessment of ROS in cardiovascular biology. Hypertension Canada. Toronto, Canada.
- 26 October 12-14, 2011 - **Touyz RM.** Thioredoxin dysregulation in FORKO mice, a model of menopause-associated hypertension. Physiology of Cardiovascular Disease – Sex disparities, American Society of Physiology. Mississippi. USA.
- 27 October 23-24, 2011- **Touyz RM.** Oxidative stress, Noxs and hypertension – experimental evidence and clinical controversies. Andre Aisenstadt Clinical Day, Jewish General Hospital, Montreal, Canada.
- 28 November 9, 2011 - **Knoll G.** Geriatric Kidney Transplantation. Early Program, Advances in Geriatric Nephrology. American Society of Nephrology Annual Scientific Meeting, Philadelphia, PA, USA.
- 29 November 12-16, 2011 - **Touyz RM.** Best of AHA Specialty Conferences – High Blood Pressure Research. AHA Scientific Sessions, Orlando. USA.
- 30 November 12-16, 2011 - **Touyz RM.** Clinical Conundrums in Hypertension – Pathobiology of Hypertension. AHA Scientific Sessions, Orlando. USA.
- 31 December 12-13, 2011 - **Touyz RM.** Role of aldosterone in the cross-talk between adipocytes and vascular function. European Aldosterone Meeting. Paris.
- 32 December 19-11, 2011 - **Burns K.** 61. KRESCENT Workshop Presentation. Montreal, QC, Canada.
- 33 December 13, 2011 - **Fairhead T.** Influenza Immunization in Kidney Transplant Recipients: Balancing Risks and Benefits. City-wide Nephrology Rounds. Hotel Dieu University of Montreal, Canada.
- 34 December 13, 2011 - **Fairhead T.** New Advances in the Pathogenesis of Rapidly Progressive Glomerulonephritis. City-wide Nephrology Research Rounds. Hotel Dieu University of Montreal, Montreal
- 35 January 24-25, 2012 - **Touyz RM.** Animal Models of Cardiovascular Disease. Health Science Scotland, Edinburgh, UK.
- 36 January 25-27, 2012 - **Knoll G.** Non-Immunologic Means to Preserve Graft Function: Current Evidence and Recommendations. Recent Advances in Renal Transplantation – Kuwait 2011. Kuwait City
- 37 January 25-27, 2012 - **Knoll G.** Proteinuria Following Renal Transplantation. Recent Advances in Renal Transplantation – Kuwait 2011. Kuwait City.
- 38 February 7, 2012 - **Touyz RM.** Adipocytes, vascular biology and aldosterone – clinical implications Clinical Pharmacology Grand Rounds, Vanderbilt University School of Medicine, Nashville.
- 39 February 7, 2012 - **Touyz RM.** Vascular biology of TRPM7. Vanderbilt Vascular Biology Lecture Series, Vanderbilt University School of Medicine, Nashville. USA.
- 40 February 9, 2012 - **Burns K.** Enhancing Angiotensin-converting enzyme 2: a potential therapy for diabetic nephropathy? Sunnybrook Hospital. Nephrology Grand Rounds. Toronto, Canada.
- 41 February 25, 2012 - **Knoll G.** Study Design Considerations – Feasibility, Outcome Measures, Monitoring Impact, Translation of Results. CST Special Forum - Financial Incentives to Increase the Number of Organs available for Transplantation: Exploring Canadian Considerations and Possibilities for Research. CST 2012 Annual Scientific Meeting. Quebec City, Canada.
- 42 January 24-25, 2012 - **Touyz RM.** Animal Models of Cardiovascular Disease. Health Science Scotland, Edinburgh . UK.

- 43 February 13-16, 2012 - **Touyz RM.** Oxidative stress and hypertension – Experimental Evidence and Clinical Controversies. Advanced Medicine, Royal College of Physicians, London, Ontario, Canada.
- 44 February 26 - Mar 2, 2012 - **Touyz RM.** Angiotensin beyond the cardiovascular system. ANG Gordon Conference, Ventura. USA.
- 45 March 18, 2012 - **Hebert RL.** Diabetic Research and Training Center (DRTC), Vanderbilt University, Nashville TN. USA.
- 46 April , 2012 - **Zimmerman D.** Making the Grade. Canadian Society of Nephrology Annual Scientific Meeting in Newfoundland, Canada.
- 47 April 27, 2012 - **Knoll G.** Regional Differences in Living Donors. Canadian Society of Nephrology Annual Scientific Meeting., Newfoundland, Canada.
- 48 April 19, 2012- **Touyz RM.** Microparticles – a new player in redox signalling. SFB 815 Seminar Series “Seminars in Redox Signalling” Frankfurt University, Germany.
- 49 April 21, 2012 - **Touyz RM.** Novel paradigms in vascular biology: Oxidative stress, TRPM cation channels and microparticles. MVP Program Tokyo.
- 50 April 22-25, 2012 - **Touyz RM.** Robert M. Berne Distinguished Lectureship. American Physiological Society. San Diego. USA.
- 51 April 25-27, 2012 - **Burns K.** KRESCENT workshop, St. John's Newfoundland, Canada.
- 52 April 26-29, 2012 - **Touyz RM.** ESH 2012, “Oxidative stress and hypertension – experimental evidence and clinical conundrums” London, England, UK.
- 53 May 8-9, 2012 - **Touyz RM.** Magnesium in Clinical Medicine. International Magnesium Symposium, Göttingen University, Göttingen, Germany.
- 54 May 14, 2012 - **Touyz RM.** Visiting Faculty Seminar Series, Univeristy of Navarra, Pamplona, Spain.
- 55 June 2012 - **Kennedy C.** Gordon Research Conference "Nox Family NADPH Oxidases: NOX Biology and its Translation to Human Disease and Therapy", Waterville Valley, NH, USA.
- 56 June 3-8, 2012 - **Touyz RM.** NOX-derived ROS, insulin signaling, and diabetic pathologies. Nox Gordon Conference. New Hampshire. USA.
- 57 June 24-29 - **Touyz RM.** Receptor signaling pathways in smooth muscle cell. FASEB Smooth Muscle Conference. Snowmass Village. Colorado, USA.
- 58 June 27-30, 2012 - **Knoll G.** Invited Speaker, Postgraduate Course and Annual Scientific Meeting, Transplantation Society of Australia and New Zealand (TSANZ).

E) VISITING SCHOLARS 2011

- 1 January 18, 2011 - **Prof. Jan Staessen, MD, PhD, FESC, FAHA**. Professor of Medicine, Division of Hypertension and Cardiovascular rehabilitation, Department of Cardiovascular Diseases at the University of Leuven presented "Ambulatory blood pressure measurement for risk stratification of cardiovascular risk - Results from an international database." at the Nephrology Grand Rounds.
- 2 February 22, 2011 - **Dr. Andrew Pipe, CM, MD**, Professor, Faculty of Medicine, University of Ottawa, Chief, Division of Prevention and Rehabilitation, University of Ottawa Heart Institute presented "Smoking Cessation 2011: What Every Clinician Should Know" at Nephrology Grand Rounds.
- 3 March 10, 2011 - **Kathy Griendling Ph.D, DOM** Professor and Vice Chair for Faculty Development, Emory University School of Medicine, Atlanta, USA presented "Differential Roles of NADPH Oxidases in Vascular Function" at the Kidney Research Centre, Journal Club.
- 4 March 14, 2011 - **Graham Wagner PhD**, Department of Physiology & Pharmacology, Faculty of Medicine and Dentistry, University of Western, Ontario, presented "Stanniocalcin and renal function: a long and winding road" at the Kidney Research Centre, Journal Club.
- 5 March 29, 2011 - **Branko Braam, MD, PhD, FASN**. Internist/Nephrologist, Associate Professor of Medicine, Adjunct Associate Professor of Physiology, Heart and Stroke Foundation of Canada New Investigator, University of Alberta Hospital, Department of Medicine/Division of Nephrology and Immunology presented "Circulating Cells and AngII: Friend or Foe?" at the Nephrology Grand Rounds.
- 6 May 19, 2011 - **Dr. Timothy Reudelhuber**, Professor, University of Montreal, Associate Member - Department of Medicine, Division of Experimental Medicine, presented "Angiotensin 1-7: A new target for cardio-renal therapy " at the Kidney Research Centre, Journal Club.
- 7 May 24, 2011 - **David Mendelssohn, MD, FRCPC**. Chief/Physician Director, Department of Nephrology, Humber River Regional Hospital, Lead, Research and Innovation of the Ontario Renal Network, Professor of Medicine, University of Toronto presented "Stimulating Evidence Generation in Nephrology: A New Role for the Ontario Renal Network" at Nephrology Grand Rounds.
- 8 May 31 2011 - **Radko Komers, MD, PhD**, Assistant Professor of Medicine, Oregon Health and Science University, Associate Professor of Medicine, Charles' University, Prague presented "Nephroprotective Effects of Inhibition of Rho-ROCK Pathway in Diabetes" at Nephrology Grand Rounds.
- 9 June 8, 2011 - **Markus Schlaich, MD**, Head, Neurovascular Hypertension & Kidney Disease laboratory, Director at Baker Hypertension Network, A/Professor of Medicine, Monash University in Melbourne, Australia presented "Catheter-based renal denervation: Implications for cardiovascular and renal disease." at the Ottawa Hospital Medical Grand Rounds (Sourirajan Lecture).
- 10 June 21, 2011- **Michael Rauchman, MD**, Associate Professor, Internal Medicine, Biochemistry and Molecular Medicine, St-Louis University School of Medicine, Section Chief, Nephrology at St-Louis VA Medical Center presented " Kidney Development and Disease: Concepts and Questions." at

- 11 July 7, 2011 - **Marie Briet, MD, PhD**, Clinical research fellow in the Department of Medicine, McGill University, Jewish General Hospital, Montreal, presented "Large and small artery remodeling in Chronic Kidney Disease" at the Kidney Research Centre Journal Club.
- 12 September 20, 2011 - **Matthew Oliver, MD, MHS, FRCPC**, Division of Nephrology, Sunnybrook Health Sciences Centre, University of Toronto, presented "Benchmarking Dialysis Practice at the Ottawa Hospital" at Nephrology Grand Rounds.
- 13 November 22, 2011 - **Glen Geiger, MD**, Medical Director and CCIO, Information Services Department, The Ottawa Hospital, presented "Electronic Medication Reconciliation" at the Nephrology Grand Rounds.
- 14 November 29, 2011 - **Brenda Hemmelgarn, MD, PhD, FRCPC**, Associate Professor Department of Medicine and Department of Community Health Sciences, Foothills Hospital and University of Calgary, presented "Use of Computerized Data for Health Services Research: The Alberta Kidney Disease Network" at the Ottawa Hospital Nephrology Grand Rounds.
- 15 December 13, 2011 - **Vanita Jassal, MCs, Bchir, MB, MD**, Associate Professor, Medicine at the University of Toronto, presented "To Dialyze or Not; With danger it's Fraught" at the Nephrology Grand Rounds.
- 16 March 22, 2012 - **Andrey Cybulsky, MD**, Professor – Department of Medicine, Division of Experimental Medicine At The Research Institute of the McGill University Health Centre, Montreal, Que, presented "Ste20-like kinase, SLK: mechanisms of action and role in kidney cell injury" at the Kidney Research Centre Journal Club.
- 17 March 27, 2012 - **John Penning, MD, FRCPC**, Medical Director, Acute Pain Services, The Ottawa Hospital, Associate Professor, Department of Anesthesiology, University of Ottawa, presented "Above and Beyond the Basic Analgesia Ladder for Acute Pain" at the Nephrology Grand Rounds.
- 18 April 10, 2012 - **Heather N. Reich, MD, CM, PhD, FRCPC**, Nephrologist, Clinical Scientist at the University Health Network, University of Toronto, presented "The Application of Omics to Clinical Nephrology" at the Ottawa Hospital Nephrology Grand Rounds.
- 19 April 17, 2012 - **Daniel Bichet, MD, MSC, FACP**, Canada Research Chair on Genetics of Kidney Disease, Professor in the Faculty of Medicine at the University of Montreal, presented "Investigation and Treatment of Hyponatremia" at the Ottawa Hospital Nephrology Grand Rounds.
- 20 June 1, 2012 - **Tomoko Takano, MD, PhD**, Associate Professor, Dept of Medicine, Associate member Department of Physiology, McGill University in Montreal presented "Role of RhoGTPases in the pathogenesis of proteinuria" at the Kidney Research Centre Journal Club.