



Kidney Research Centre
Centre de recherche
sur les maladies du rein

KIDNEY RESEARCH CENTRE,
OTTAWA HOSPITAL RESEARCH INSTITUTE
UNIVERSITY OF OTTAWA

ANNUAL REPORT 2010

KRC ANNUAL REPORT 2010

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1- EXECUTIVE SUMMARY

The Kidney Research Centre (KRC) Annual Report documents the research activities and contributions of KRC scientists and staff for 2010. The KRC is a centre within the Chronic Disease Program of The Ottawa Hospital Research Institute (OHRI)/University of Ottawa. Most scientists have primary academic appointments in the Division of Nephrology of the Department of Medicine. Dr. Christopher R.J. Kennedy has a primary appointment as a Senior Scientist at the OHRI and Dr. Richard L. Hébert has a primary appointment as a Full Professor in the Department of Cellular and Molecular Medicine at the University of Ottawa.

The KRC has a basic laboratory research program with an overall focus on the prevention of progression of kidney disease. Basic science studies are conducted by five scientists and their staff (Drs. K. Burns, T. Fairhead, R.L. Hébert, C. Kennedy and R. Touyz) within the 15,000 sq ft facility at Roger Guindon Hall in the University of Ottawa. Basic research studies are focused on the pathogenesis of diabetic nephropathy and the role of the renin-angiotensin system (Drs. Burns, Hébert, Kennedy and Touyz), the mechanisms of hypertension and vascular injury (all five scientists), the role of prostaglandins in kidney injury (Drs. Hébert and Kennedy) and innate immune mechanisms of kidney injury (Dr. T. Fairhead). Translational research represents another priority for the group and in this regard Drs. Touyz and Burns are each involved in studies in collaboration with other scientists at the OHRI, involving human subjects, designed to further our understanding of the pathogenesis of vascular disease and kidney ischemic injury, respectively. Dr. Fairhead has also conducted translational research studies involving the responses to H1N1 vaccination in renal transplant patients.

The KRC has infrastructure to support clinical research, consisting of a team of dedicated research coordinators and assistants based at the Riverside Campus. Ms. Judy Cheesman is the Clinical Research Manager and has done an outstanding job to ensure the optimal conduct of the 10 to 20 clinical trials that are underway at any one time. Several members of the Division of Nephrology have appointments at the OHRI and are active in clinical research. Dr. G. Knoll has a very active clinical research program focused on optimizing the outcomes associated with renal transplantation. Dr. D. Zimmerman and M. Ruzicka have peer reviewed funding to support hemodialysis-related research, and studies on the pathogenesis of hypertension in end stage renal disease, respectively. Dr. A. Akbari's research program is focused on optimization of early detection of kidney disease, and Dr. S. Hiremath who has been recently recruited to the Division, is interested in epidemiological research in acute kidney injury, vascular access and sudden cardiac death in hemodialysis patients using the methodologies of survival analysis, decision analysis and systematic reviews.

Scientists at the KRC have published 44 manuscripts in 2010. In basic science, Dr. C. Kennedy's lab published a key manuscript in the Journal of the American Society of Nephrology (JASN) showing that EP4 receptors in podocytes may contribute to glomerular injury (JASN: 10:1678-90, 2010) which was the subject of an editorial in this prestigious journal. Dr. Touyz and her laboratory published an important paper in Circulation Research, outlining for the first time how the NADPH oxidase "Nox5" is regulated by angiotensin II and endothelin. As part of a team grant, KRC scientists led by Dr. Touyz and KRESCENT fellow Dr. Mona Sedeek published a paper in the American Journal of Physiology (AJP), which demonstrated a role for

Nox4-stimulated reactive oxygen species in the pathogenesis of type II diabetic nephropathy. These are just some of the key manuscripts from the basic science group in 2010.

On the clinical research front, Dr. Knoll was senior author on a paper in the Canadian Medical Association Journal (CMAJ) in which his group has established a decision tool to help patients and clinicians predict the potential survival benefit of renal transplantation compared to dialysis. (CMAJ:182(7):666-72, 2010). Dr. Knoll also led a systematic review (involving Dr. Ayub Akbari) to assess the use of renal function measurements in kidney transplant clinical trials, published in the American Journal of Kidney Disease (AJKD). Dr. Deborah Zimmerman (with Drs. Swapnil Hiremath and Kevin Burns) published the results of her Kidney Foundation of Canada (KFOC)-funded study on the effect of arterio-venous fistulae in hemodialysis patients on left ventricular growth, an index of cardiac function, in the journal Nephrology, Dialysis and Transplantation. Drs. Marcel Ruzicka, Swapnil Hiremath and Brendan McCormick published a paper in the Journal of the American Society of Hypertension, showing the safety and efficacy of the drug spironolactone in hypertensive patients with chronic kidney disease. A full list of these publications is presented in this report.

KRC scientists were the recipients of significant peer review funding awards in 2010. Dr. Touyz received two separate grants from the Canadian Institutes of Health Research (CIHR), one involving the vascular biology of TRPM7 Transzymes in hypertension, and the other focused on vascular aging and the role of microparticles. Dr. Touyz also received a prestigious Juvenile Diabetes Research Fund (JDRF) international award as a co-principal applicant to study the role of Nox1 and Nox4 in diabetic nephropathy. Drs. Burns and Kennedy were recipients of grants from the KFOC to study the role of podocyte ACE2 in non-diabetic kidney disease, and the role of ubiquitin C-terminal hydrolase-1 in α -actinin-4 associated FSGS, respectively.

Dr. G. Knoll was the Principal Applicant on three grants funded from the CIHR in 2010. The projects will study the effect of immunosuppressant medications on patient outcomes following kidney transplant failure, the role of levofloxacin in preventing BK virus infection, and the method to most accurately measure kidney function. In total, peer reviewed funding for the KRC group in 2010 amounted to \$2,935,021 for principal investigator-related operating grants.

Each year, KRC scientists and staff are recipients of honours and distinctions, and 2010 was no exception. Dr. Kevin Burns was awarded The Medal for Research Excellence from the KFOC, which is presented annually to a Canadian resident who is recognized nationally and internationally for excellence in kidney related research. Dr. Rhian Touyz was recipient of the prestigious Distinguished Service Award of the Canadian Hypertension Society at the Hypertension Canada Annual Meeting in Vancouver last November. Dr. G. Knoll was awarded a Clinical Research Chair (tier one) from the Faculty of Medicine, in its first competition for these major awards.

Dr. Ayub Akbari is congratulated for completing his MSc degree in Epidemiology at the University of Ottawa in 2010. With this additional training, Dr. Akbari is well positioned to conduct studies related to his interest in prevention and detection of kidney disease. Congratulations are also due to Dr. C. Kennedy, who was promoted to Associate Professor in the

Dept. of Medicine. Dr. Pierre Brown was recipient of the Dr. Peter J. Swedko Memorial Legacy Endowment Fund award. This award was established by the family of Dr. Peter Swedko, a former member of the Division of Nephrology and promising young researcher who passed away in 2005. Funds in this endowment are used to support work related to the development of medical informatics systems that can assist clinical decision making.

Our trainees at the KRC were also recipients of several awards that are outlined in this report. In particular, Italian Night scholarships from the KFOC were awarded to graduate student Jean-Francois Thibodeau from Dr. Kennedy's lab, and Dr. Ana Briones, from Dr. Touyz' lab. Dr. Dylan Burger was recipient of presentation awards at the Gordon Research Conference in 2010 and also won a top 10 trainee presentation award at the Canadian Society of Nephrology annual meeting. Drs. Burger, Yogi and Montezano from Dr. Touyz' lab were also recipients of trainee awards at The International Society of Hypertension (ISH) meeting.

The KRC had an active schedule of visiting professors in 2010. Some of these visitors presented at one of the weekly KRC Journal Clubs held at the basic science facility, and/or Nephrology Grand Rounds in the Division of Nephrology at the Riverside Campus.

Research at the KRC is supported by funds from several sources. Peer reviewed grants (CIHR, KFOC, HSFC, etc) represent the most important source of funding to ensure high quality research. We are grateful that the Nephrology Partners of Ottawa (NPO) makes an annual contribution to support the research activities at the centre. In 2010, 88% of these funds were used to support clinical research operations at the KRC, while the remaining 12% were used to support basic research. We are also fortunate to receive funding support from the private sector and from private donations. Our sincere gratitude extends to the organizers of the Annual KRC Golf Tournament, led by Mr. Sam Karkache who once again raised significant funds to support the KRC. Funds raised at the 26th Annual Italian Night from the KFOC were also used to support KRC scholarships as noted above. This support helps us achieve our goal to train the next generation of world class research scientists. With respect to the Italian Night, we were all saddened to learn of the death in December 2010 of one of the KRC's strongest supporters, Mr. Agostino Monteduro. Mr. Monteduro established the Annual Italian Night and worked very hard to support kidney research and raise public awareness about kidney disease. He will be greatly missed.

Finally, I would like to take this opportunity to acknowledge the contributions of the scientists and staff at the KRC for its ongoing success. On the basic science side, Ms. Gabriele Cherton-Horvat does an exceptional job as our lab manager. We are grateful for the work of our technical staff including Mr. Anthony Carter, our senior animal technician, and our resident pathologist, Dr. Alex Gutsol who has contributed importantly to research progress. We are thankful for the work of Ms. Pauline Messier who coordinates and administrates the activities of the centre. On the clinical research side, Judy Cheesman and her staff do an exceptional job in running the clinical trials of the KRC, with a constant focus on adhering to ethical principles and high standards for patient safety.

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

Dr. Todd Fairhead's lab



Left to Right: Dr. Todd Fairhead, Dr. Kaede Takami & Andreea Slatculescu

Dr. Chris Kennedy's lab



Left to Right: Julie (Lihua) Zhu, Dr. Chris Kennedy, Gwendoline Bugnot, Jean-Francois Thibodeau, Naomi Read & Dr. Chet Holterman.

Dr. Kevin Burns' lab



Left to Right: Dr. Kevin Burns, Danielle Zimmerman, Renisha Nadarajah, Joe Zimpelmann & Dr. Fengxia Xiao.

Dr. Richard Hébert's lab



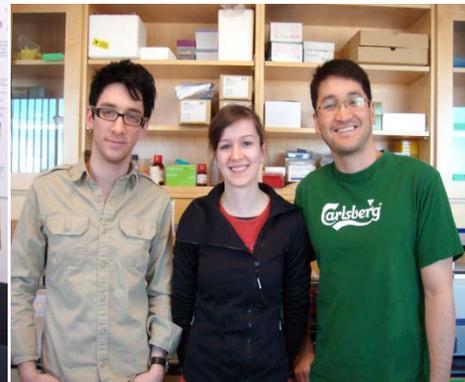
Left to right: Drs. Rania Nasrallah, Richard Hébert & Mona Sedeek.

Dr. R. Touyz' lab



Top left to right: Dr. Glaucia Callera, Dr. Aurélie Nguyen, Dr. Dylan Burger, Ying He, Dr. Augusto Montezano, Dr. Tayze Antunes.

Bottom left to right: Hibo Yusuf, Dr. Rhian Touyz and Dr. Mona Sedeek



Left to right: Dylan Kwart, Danielle Zimmerman & Dr. Alvaro Yogi.

Technical/Administrative staff



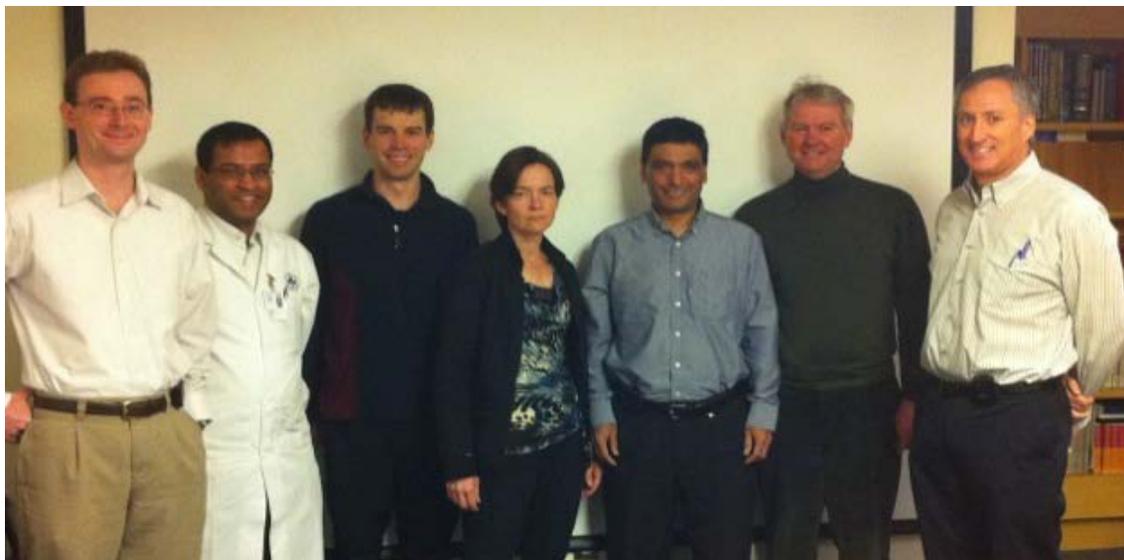
Left to Right: Anthony Carter, Pauline Messier, Gabriele Cherton-Horvat & Dr. Alexey Gutsol

Clinical Trials Research staff



Left to Right: Edita Delic, Lindsay Walter, Miranda Dixon – Luinenburg, Scott Mullen, Judy Cheesman, Valerie Cronin, Jessica Wagner, Jennilea Courtney

Nephrology Clinical Researchers



Left to Right: Drs. Brendan McCormick, Swapnil Hiremath, Todd Fairhead, Deborah Zimmerman, Ayub Akbari, Marcel Ruzicka, Kevin Burns, Peter Magner & Greg Knoll.



2. RESEARCH INVESTIGATORS

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 | Clinical 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, 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 | |

| <u>NAME</u> | <u>TITLE</u> | <u>SCIENTIFIC RANK</u> |
|-----------------------|---|-----------------------------|
| Dr. Jolanta Karpinski | Associate Professor Division of Nephrology | |
| Dr. Chris Kennedy | Associate Professor Division of Nephrology | Senior Scientist, OHRI |
| Dr. Greg Knoll | Associate Professor 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 | |
| Dr. Peter Magner | Associate Professor Head, Division of Nephrology Division of Nephrology | Clinical Investigator, OHRI |
| Dr. Soraya Moghadam | Consultant Division of Nephrology | |
| Dr. Brendan McCormick | Assistant Professor Division of Nephrology | |
| Dr. Steven Nadler | Associate Professor Division of Nephrology | |
| Dr. Marcel Ruzicka | Assistant Professor Division of Nephrology | Clinical Investigator, OHRI |
| Dr. Rhian Touyz | Full Professor Division of Nephrology Canada Research Chair in Hypertension | Senior Scientist, OHRI |
| Dr. Deborah Zimmerman | Associate Professor Division of Nephrology | Clinical Investigator, OHRI |

CLINICAL SCHOLARS, TRAINEES AND FELLOWS

| <u>NAME</u> | <u>TITLE</u> |
|-----------------------------|----------------------------------|
| Dr. Ali Al-Sawi | Nephrology Trainee (RCPSC) |
| Dr. Deepak Jadhav | Clinical Fellow |
| Dr. Amitabh Kulkarni | Clinical Fellow |
| Dr. Nasim Shahbazi | Nephrology Trainee (RCPSC) |
| Dr. Andrew Wong | Nephrology Trainee (RCPSC) |
| Dr. Moftah Younis | Clinical Fellow |
| Dr. Jyoti Gaikwad | Clinical Fellow |
| Dr. Ankur Gupta | Clinical Fellow |
| Dr. Gavin Harman | Nephrology Trainee (RCPSC) |
| Dr. Dilip Kirpalani | Clinical Fellow |
| Dr. Andrea Mazarova | Clinical Fellow |
| Dr. Shankar Prasad Nagaraju | Clinical Fellow |
| Dr. Khaled M. Shamseddin | Renal Transplant Clinical Fellow |
| Dr. Duy Tran | Renal Transplant Clinical Fellow |

POST-DOCTORAL RESEARCH FELLOWS

| <u>NAME</u> | <u>SUPERVISOR</u> | <u>TITLE OF PROJECT</u> |
|--|------------------------------|--|
| Dr. Maheen Ahmed (Amgen KRC Fellow) | Dr. R. Touyz Dr. K. Burns | Endothelial dysfunction and vascular inflammation in childhood hypertension. |
| Dr. Tayze Antunes | Dr. R. Touyz | Vascular (patho)biology of TRPM7 channels in hypertension. |
| Dr. Ana Briones | Dr. R. Touyz | Role of the adipose tissue renin-angiotensin-aldosterone system. |
| Dr. Dylan Burger (KRESCENT awardee) | Dr. R. Touyz | Role of epidermal growth factor ligands in micro particle signaling during hypertension. |

| <u>NAME</u> | <u>SUPERVISOR</u> | <u>TITLE OF PROJECT</u> |
|--|----------------------------------|---|
| Dr. Edward (Ted) Clark (Amgen KRC Fellow) | Dr. G. Knoll | Computerized decision support system for oral anticoagulant dosing in hemodialysis patients |
| Dr. Augusto Montezano (CIHR awardee) | Dr. R. Touyz | Role of c-Src in aldosterone and Ang II cross-talk in hypertension. |
| Dr. Aurelie Nguyen (CIHR awardee) | Dr. R. Touyz | Adipocytes, aldosterone and vascular biology in hypertension. |
| Dr. Mona Sedeek (KRESCENT awardee) | Dr. R. Touyz Dr. R. L. Hébert | Role of Nox4 in the development of diabetic nephropathy in mouse model of type II diabetes. |
| Dr. Fengxia Xiao | Dr. K. Burns | ACE2 and its effects in the kidney |
| Dr. Alvaro Yogi (HSFC awardee) | Dr. R. Touyz | Magnesium regulation of vascular function in hypertension: role of TRPM7. |

VISITING INTERNATIONAL PROFESSORS AND STUDENTS

| <u>NAME</u> | <u>SUPERVISOR</u> | <u>TITLE/LOCATION</u> |
|---|-------------------|--|
| Imane Bensaada <i>(Graduate student)</i> | Dr. K. Burns | Effect of ACE2 in diabetic nephropathy. |
| Ana Briones <i>(Visiting professor)</i> | Dr. R. Touyz | Univ of Madrid, Spain. |
| Dr. Graziela Ceravolo <i>(PhD program student)</i> | Dr. R. Touyz | Crosstalk between bradykinin and angiotensin in hypertension |
| Josee Correa Wilson <i>(PhD program student)</i> | Dr. R. Touyz | Role of the calcineurin pathway in cardiac hypertrophy in a model of renal hypertension. |
| Yolanda Mendizabal <i>(PhD program student)</i> | Dr. R. Touyz | G6PD, aldosterone and vascular biology. |
| Maria Monterosa <i>(Visiting professor)</i> | Dr. R. Touyz | Univ of Salamanca, Spain. |

| <u>NAME</u> | <u>SUPERVISOR</u> | <u>TITLE/LOCATION</u> |
|-------------------------|------------------------------|--|
| Erin Stitt-Cavanagh | Dr. C. Kennedy | The role of podocyte prostaglandin E2 EP4 receptors in kidney disease. |
| Jean Francois Thibodeau | Dr. C. Kennedy | Prostaglandin EP receptors: Implications in diabetic nephropathy and podocyte dysfunction. |
| Danielle Zimmerman | Dr. K. Burns Dr. R. Touyz | The role of Ang-(1-7) in a mouse model of renal fibrosis. |

SUMMER STUDENTS

| <u>NAME</u> | <u>SUPERVISOR</u> |
|-------------------------|---------------------------|
| Dylan Kwart | Dr. R. Touyz |
| Laura MacLeod | Dr. C. Kennedy |
| Kyle Saikaley | Dr. T. Fairhead |
| Kajenny Srivaratharajah | Dr. K. Burns/Dr. G. Knoll |
| Chelsea Towaj | Dr. C. Kennedy |

RESEARCH ASSOCIATES

| <u>NAME</u> | <u>SUPERVISOR</u> |
|---------------------|---------------------------|
| Dr. Glauca Callera | Dr. R. Touyz |
| Dr. Alexey Gutsol | Dr. K. Burns/Dr. G. Knoll |
| Dr. Rania Nasrallah | Dr. R. L. Hebert |

TECHNICAL STAFF

| <u>NAME</u> | <u>SUPERVISOR</u> | <u>TITLE</u> |
|-------------------------|------------------------------|--------------------------|
| Anthony Carter | Dr. K. Burns | Senior Animal Technician |
| Gabriele Cherton-Horvat | Dr. K. Burns | Lab manager |
| Ying He | Dr. R. Touyz | Lab Technician |
| Dr. Kaede Takami | Dr. T. Fairhead | Lab Technician |
| Hiba Yusuf | Drs. K Burns and R. Touyz | Lab Technician |
| Lihua Zhu | Dr. C. Kennedy | Lab Technician |
| Joseph Zimpelmann | Dr. K. Burns | Lab Technician |

CLINICAL RESEARCH STAFF

| <u>NAME</u> | <u>SUPERVISOR</u> | <u>TITLE</u> |
|-------------------|-------------------|--------------------------------------|
| Josee Champagne | J. Cheesman | Clinical Research Coordinator |
| Judy Cheesman | Dr. K. Burns | Clinical Research Manager |
| Jennilea Courtney | J. Cheesman | Clinical Research Coordinator |
| Valerie Cronin | J. Cheesman | Clinical Research Coordinator |
| Edita Delic | J. Cheesman | Clinical Research Assistant II |
| Debora Hogan | J. Cheesman | ACE Study Coordinator |
| Ivan Jelesan | J. Cheesman | U of Ottawa, student for summer 2010 |
| Margot McCoshen | J. Cheesman | Clinical Research Coordinator |
| Scott Mullen | J. Cheesman | Research Assistant Coordinator |
| Siobhan Rhodes | J. Cheesman | U of Ottawa, student for summer 2010 |
| Jessica Wagner | J. Cheesman | Clinical Research Assistant I |
| Lindsay Walter | J. Cheesman | U of Ottawa, student for summer 2010 |

ADMINISTRATIVE PERSONNEL

| <u>NAME</u> | <u>SUPERVISOR</u> | <u>TITLE</u> |
|-----------------|-------------------|-------------------------------|
| Pauline Messier | Dr. K. Burns | Administrative Assistant, KRC |

3. ADMINISTRATIVE COMMITTEES

Kidney Research Centre Basic Science Committee

Dr. K. Burns (Chair)
Dr. R. L. Hébert
Dr. T. Fairhead
Dr. C. Kennedy
Dr. R. Touyz

4. PEER-REVIEWED FUNDING 2010

CBS: Canadian Blood Services

JDRF: Juvenile Diabetes Research Foundation

CIHR: Canadian Institutes of Health Research

KFOC: Kidney Foundation of Canada

PSI: Physicians Services Incorporated Foundation

CFI: Canada Foundation for Innovation

OGSST: Ontario Graduate Scholarship in Science & Technology

IOF: Infrastructure Operating Funds (Canada Foundation for Innovation)

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

| | Source | Role | Term | Total Amount | Title | Amount For 2010 |
|---------------|----------------|---------|---------|----------------|--|-----------------|
| Dr. A. Akbari | CIHR | Co-appl | 2010 | \$63,559 | The accurate measurement of glomerular filtration rate in patients with kidney disease. | |
| Dr. K. Burns | KFOC | | 2008-10 | \$100,000 | The role of angiotensin-(1-7) and its receptor MAS in chronic kidney disease. | \$25,000 |
| | KFOC | | 2010-12 | \$100,000 | The role of podocyte ACE2 in non-diabetic kidney disease. | \$25,000 |
| | KFC/ Pfizer | Co-appl | 2008-10 | \$150,000 | Role of role of Nox 1 and Nox 4 in diabetic nephropathy and associated cardiovascular injury. | |
| | KFOC | Co-inv | 2005-11 | \$850,000 | The Kidney Research Scientist Core Education and National Training Program (KRESCENT). | |
| | CIHR | Co-appl | 2007-10 | \$250,620 | Optical spectroscopy: A new tool for assessing blood status and treatment efficacy in end-stage renal disease, nutrition, metabolism and diabetes. | |
| | CIHR | | 2005-10 | \$720,385 | The role of intrarenal ACE2 in the progression of diabetic nephropathy. | \$167,228 |
| | CFI | | 2008-10 | \$32,533 | Translation of Innovation into Medical Excellence (TIMEX). | |
| | IOF | | 2003-11 | \$1.03 Million | Infrastructure operating fund for the KRC. | 384,356 |
| | DoM | | 2009-10 | \$140,000 | Research Chair | \$140,000* |

| Principal Investigator | Source | Role | Term | Total Amount | Title | Amount For 2010 |
|------------------------|----------------|------------------------|---------|--------------|---|-----------------|
| R. Nadarajah | OGSST | Scholarship | 2010 | \$12,000 | The role of podocyte ACE2 in diabetic nephropathy. | \$12,000 * |
| Dr. M. Ruzicka | HSFC | Co-appl | 2007-11 | \$325,859 | RAS blockade and sympathetic hyperactivity in humans post MI. | |
| | HSFC. | Principal Investigator | 2009-12 | \$110,135 | Sympathetic activity in patients with end-stage renal disease on peritoneal dialysis. | \$55,067 |
| | DoM | Co-appl | 2010-11 | \$21,000 | Adipocytes, aldosterone, and vascular function in hypertension . | |
| | HSFO | Co-appl | 2010-11 | \$49,887 | A comparison of cardiovascular risk between Chinese & South Asian Canadians & residents of China and India. | |
| Dr. T. Fairhead | KFOC | | 2009-12 | \$150,000 | The role of RIP2 in experimental crescenticglomerulonephritis. | \$50,000 |
| | DoM | | 2009-10 | \$60,000 | Recruitment Award/Operating | \$60,000 |
| Dr. C. Kennedy | CIHR | | 2009-11 | \$333,582 | Prostanoid signaling in diabetic nephropathy. | \$111,194 |
| | CIHR | | 2007-11 | \$619,285 | Function of prostaglandin EP receptor subtypes in glomerular disease. | \$123,857 |
| | KFOC | | 2010-11 | \$100,000 | A-actinin-4 associated FSGS: a role for the ubiquitin C-terminal hydrolase-1 (UCH-L1). | \$25,000 |
| | KFC/ Pfizer | Co-appl | 2008-10 | \$150,000 | Role of role of Nox 1 and Nox 4 in diabetic nephropathy and associated cardiovascular injury. | |
| J.F. Thibodeau | OGSSTP | Studentship | 2010-11 | \$17,500 | Prostaglandin signaling and diabetic nephropathy: impact on podocyte health | \$17,500* |
| Dr. D. Zimmerman | CIHR | | 2009-10 | \$73,200 | Canadian Kidney Disease Cohort Study. | \$36,600 |
| | PSI | Co-appl | 2010-11 | \$169,000 | Effect of an upper arm vascular access on left ventricular mass and function. | |

| Principal Investigator | Source | Role | Term | Total Amount | Title | Amount For 2010 |
|------------------------|--------|----------|---------|--------------|--|-----------------|
| Dr. G. Knoll | CIHR | | 2005-10 | \$2,949,260 | ACE-inhibition for the preservation of renal function and patient survival in kidney transplantation. | \$589,252 |
| | CIHR. | Co-appl | 2010-11 | \$74,984 | Accepting kidneys from older donors: Impact on transplant recipient outcomes. | |
| | CIHR | | 2010-15 | \$963,864 | Effect of immunosuppressive medication use on patient outcomes following kidney transplant failure. | \$192,773 |
| | CIHR | Co-appl | 2010-11 | \$110,000 | Sympathetic activity in patients with end-stage renal disease on peritoneal dialysis. | |
| | CIHR | | 2010 | \$100,000 | A randomized controlled trial of renal hypothermia during partial nephrectomy. | \$100,000 |
| | CIHR | | 2010 | \$100,000 | Quinolone prophylaxis for the prevention of BK virus infection in kidney transplantation: a pilot study. | \$100,000 |
| | CIHR | | 2010-12 | \$461,464 | Quinolone prophylaxis for the prevention of BK virus infection in kidney transplantation. | \$100,000 |
| | CIHR | | 2007-12 | \$230,900 | Novel markers to improve the detection of declining kidney function. | \$46,180 |
| | CIHR | | 2010-12 | \$253,504 | The accurate measurement of glomerular filtration rate in patients with kidney disease. | \$126,752 |
| | CBS | Co- appl | 2010-13 | \$559,712 | University of Ottawa Centre for Transfusion Research Infrastructure Support. | |
| | DoM | | 2009-10 | \$50,000 | Mid-Career Salary Award | \$50,000* |
| | CRC | | 2010-15 | \$1million | Tier 1, Research Chair | \$200,000* |

| Principal Investigator | Source | Role | Term | Total Amount | Title | Amount For 2010 |
|------------------------|---------------|------------|---------|---------------|---|-----------------|
| Dr. R. Touyz | CIHR | | 2006-11 | \$645,000 | Novel Nox homologues and redox signaling in hypertension. | \$141,655 |
| | CFI Co-appl. | | 2008-10 | \$900,000 | Translation of Innovation into Medical Excellence (TIMEX). | |
| | CIHR | | 2005-10 | \$611,700 | Role of TRPM channels, magnesium and annexin in hypertension. | \$86,647 |
| | CIHR | | 2010-15 | \$861,681 | Vascular (patho)biology of TRPM7 channels in hypertension. | \$40,583 |
| | JDRF Co-appl. | | 2010-13 | \$1.3million | Nox-derived ROS: Renal and vascular complications in type 1 diabetes | \$16,666 |
| | HSFC | | 2008-10 | \$339,366 | TRPM7 signaling through lipid rafts in vascular smooth muscle cells implications in hypertension. | \$116,313 |
| | KFC/Pfizer | | 2008-10 | \$150,000 | Role of Nox 1 and Nox 4 in diabetic nephropathy and associated cardiovascular injury. | \$37,500 |
| | CIHR | | 2010-11 | \$50,000 | Early vascular aging (EVA), hypertension and microparticles . | \$20,833 |
| | DoM | | 2009-10 | \$21,240 | Adipocytes, aldosterone and vascular function in hypertension | \$15,930 |
| | CRC | | 2005-12 | \$1,4 million | Canada Research Chair in Hypertension | \$200,000* |
| Dr. A. Yogi | HSFC | Fellowship | 2009-12 | \$83,000 | Magnesium regulation of vascular function in hypertension: role of TRPM7. | \$41,500* |
| Dr. D. Burger | KRESCENT | Fellowship | 2010-12 | \$110,000 | Role of epidermal growth factor ligands in microparticle signalling during hypertension | \$55,000* |
| Dr. A Montezano | CIHR | Fellowship | 2009-11 | \$86,250 | Role of c-Src in aldosterone and Ang II cross-talk in hypertension | \$45,630* |
| Dr. M. Sedeek | KRESCENT | Fellowship | 2009-12 | \$110,000 | Role of Nox4 in the development of diabetic nephropathy | \$55,000* |
| Dr. A. Nguyen | CIHR | Fellowship | 2010-13 | \$131,250 | Adipocytes, aldosterone and vascular biology in hypertension | \$19,791* |

| Principal Investigator | Source | Role | Term | Total Amount | Title | Amount For 2010 |
|------------------------|----------------|---------|---------|--------------|---|-----------------|
| Dr. R. L. Hébert | CIHR | | 2006-10 | \$605,000 | Signaling of prostaglandin EP receptors in the diabetic collecting duct . | \$90,635 |
| | KFOC | | 2009-10 | \$100,000 | The role of PPAR gamma in the mice diabetic collecting duct. | \$50,000 |
| | KFC/ Pfizer | Co-appl | 2008-10 | \$150,000 | Role of role of Nox 1 and Nox 4 in diabetic nephropathy and associated cardiovascular injury. | |

Total Operating Grants: \$2,935,021

*Total Salary Awards: \$836,421

5. SCHOLARLY ACTIVITIES

A) PUBLICATIONS 2010

1. Yogi A, O'Connor SE, Callera GE, Tostes RC, **Touyz RM**. Receptor and nonreceptor tyrosine kinases in vascular biology of hypertension. *Curr Opin Nephrol Hypertens*. Mar;19(2):169-176, 2010.
2. **Burns KD**, Wolfs W, Belanger P, McLaughlin K, Levin A. The KRESCENT Program: an initiative to match supply and demand for kidney research in Canada. *Clin Invest Med*. Dec;33(6):E356-67, 2010.
3. Cascino T, Csányi G, Al Ghouleh I, Montezano AC, **Touyz RM**, Haurani MJ, Pagano PJ. Adventitia-derived hydrogen peroxide impairs relaxation of the rat carotid artery via smooth muscle cell p38 mitogen-activated protein kinase. *Antioxid Redox Signal*. Dec 2, 2010.
4. Yogi A, Callera G, Antunes TT, Tostes RC, , **Touyz RM**. Vascular biology of magnesium and its transporters in hypertension. *Magnes Res*. Dec 1:23(4):207-15, 2010.
5. Burger D, Nishigaki N, **Touyz RM**. New insights into molecular mechanisms of hypertension. *Curr Opin Nephrol Hypertens*. Mar 19(2):160-2, 2010.
6. Briones Am, **Touyz RM**. Oxidative stress and hypertension: current concepts. *Curr Hypertens Rep*. Apr;12(2):135-42, 2010.

7. Johnston O, Jaswal D, Gill JS, Doucette S, Fergusson DA, **Knoll GA**. Treatment of polyomavirus infection in kidney transplant recipients: A systematic review. *Transplantation*. May;15;89(9):1057-70, 2010.
8. Podymow T, August P, **Akbari A**, Management of renal disease in pregnancy. *Obstet Gynecol Clin North Am*. Jun;37(2):195-210, 2010.
9. Wilkes P, **Akbari A**. Unappreciated aspects of fluid and electrolyte physiology and implications to patient recovery. *Can J Anaesth*. Jul;57(7):636-40, 2010
10. Sedeek M, Callera GE, Montezano A, Gutsol A, Heitz F, Szyndralewicz C, Page P, **Kennedy CR, Burns KD, Touyz RM, Hebert RL**. Critical role of Nox 4-based NADPH oxidase in glucose-induced oxidative stress in the kidney - implications in type 2 diabetic nephropathy. *Am J Physiol Renal Physiol*. Dec;29;9(6):F1348-58, 2010.
11. Dilauro M, Zimpelmann J, Robertson SJ, Genest D, **Burns KD**. Effect of ACE2 and angiotensin-(1-7) in a mouse model of early chronic kidney disease. *Am J Physiol Renal Physiol*. Jun 29;8(6):F1523-32, 2010.
12. Gill JS, Goldberg A, Prasad GV, Fortin MC, Hansen TB, Levin A, Gill J, Tonelli M, Tibbles LA, **Knoll G**, Cole EH, Caulfield T. Policy statement of Canadian Society of Transplantation and Canadian Society of Nephrology on organ trafficking and transplant tourism. *Transplantation*. Oct 27;90(8):817-20, 2010.
13. **Knoll G**, Blydt-Hansen TD, Campbell P, Cantarovich M, Cole E, **Fairhead T**, Gill JS, Gourishankar S, Hebert D, Hodzman A, House AA, Humar A, Karpinski M, Kim SJ, Mainra R, Prasad GV. Canadian Society of Transplantation and Canadian Society of Nephrology commentary on the 2009 KDIGO clinical practice guideline for the care of kidney transplant recipients. *Am J Kidney Dis*. Aug;56(2):219-46, 2010.
14. **Fairhead T, Knoll G**. Recurrent glomerular disease after kidney transplantation. *Curr Opin Nephrol Hypertens*. Nov;19(6):578-85, 2010.
15. **Hiremath S**, Punnam SR, Brar SS, Goyal SK, Gardiner JC, Shah AJ, Thakur RK. Implantable defibrillators improve survival in end-stage renal disease: results from a multi-center registry. *Am J Nephrol*. 32(4):305-10, 2010.
16. **Hiremath S**, Brar SS. The evidence for sodium bicarbonate therapy for contrast-associated acute kidney injury: far from settled science. *Nephrol Dial Transplant*. Aug;25(8):2802-4, 2010.
17. **Hiremath S**, Doucette SP, Richardson R, Chan K, **Burns K, Zimmerman D**. Left ventricular growth after 1 year of hemodialysis does not correlate with arterio-venous access flow: a prospective cohort study. *Nephrol Dial Transplant*. Aug;25(8):2656-61, 2010.

18. Mulpuru S, Touchie C, **Karpinski J**, Humphrey-Murto S. Coexistent Wegener's granulomatosis and Goodpasture's disease. *J Rheumatol*. Aug 1;37(8):1786-7, 2010.
19. van Walraven C, Austin PC, **Knoll G**. Predicting potential survival benefit of renal transplantation in patients with chronic kidney disease. *CMAJ*. Apr 20;182(7):666-72, 2010.
20. van Walraven C, Austin PC, Manuel D, **Knoll G**, Jennings A, Forster AJ. The usefulness of administrative databases for identifying disease cohorts is increased with a multivariate model. *J Clin Epidemiol*. Dec;63(12):1332-41, 2010
21. **McCormick BB**, Mujais S, Poirier F, Page N, **Lavoie S**. Metabolic effects of incremental doses of intraperitoneal amino acids on automated peritoneal dialysis. *Perit Dial Int*. Mar;30(2):201-7, 2010.
22. Hackam DG, Khan NA, Hemmelgarn BR, Rabkin SW, **Touyz RM**, Campbell NR, Padwal R, Campbell TS, Lindsay MP, Hill MD, Quinn RR, Mahon JL, Herman RJ, Schiffrin EL, **Ruzicka M**, Larochelle P, Feldman RD, Lebel M, Poirier L, Arnold JM, Moe GW, Howlett JG, Trudeau L, Bacon SL, Petrella RJ, Milot A, Stone JA, Drouin D, Boulanger JM, Sharma M, Hamet P, Fodor G, Dresser GK, Carruthers SG, Pylypchuk G, Burgess ED, **Burns KD**, Vallée M, Prasad GV, Gilbert RE, Leiter LA, Jones C, Ogilvie RI, Woo V, McFarlane PA, Hegele RA, Tobe SW. The 2010 Canadian Hypertension Education Program (CHEP) recommendations for the management of hypertension: part 2 - therapy. Canadian Hypertension Education Program. *Can J Cardiol*. May;26(5):249-58, 2010.
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24. Humar A, Morris M, Blumberg E, Freeman R, Preiksaitis J, Kiberd B, Schweitzer E, Ganz S, Caliendo A, Orłowski JP, Wilson B, Kotton C, Michaels M, Kleinman S, Geier S, Murphy B, Green M, Levi M, **Knoll G**, Segev D, Brubaker S, Hasz R, Lebovitz DJ, Mulligan D, O'Connor K, Pruett T, Mozes M, Lee I, Delmonico F, Fischer S. Nucleic acid testing (NAT) of organ donors: is the 'best' test the right test? A consensus conference report. *Am J Transplant*. Apr;10(4):889-99, 2010.
25. **Ruzicka M**, Coletta E, White R, Davies R, Haddad H, Leenen FH. Effects of ACE inhibitors on cardiac angiotensin II and aldosterone in humans: "Relevance of lipophilicity and affinity for ACE". *Am J Hypertens*. Nov;23(11):1179-82, 2010.

26. Litwin M, Simonetti GD, Niemirska A, **Ruzicka M**, Wühl E, Schaefer F, Feber J. Altered cardiovascular rhythmicity in children with white coat and ambulatory hypertension. *Pediatr Res*. Apr;67(4):419-23, 2010.
27. Cybulsky AV, Takano T, Papillon J, Guillemette J, Herzenberg AM, **Kennedy CR**. Podocyte injury and albuminuria in mice with podocyte-specific overexpression of the Ste20-like kinase, SLK. *Am J Pathol*. Nov;177(5):2290-9, 2010.
28. **Kennedy CR**. What type of VEGF do you need? *J Am Soc Nephrol*. Sep;21(9):1410-2, 2010.
29. Stitt-Cavanagh EM, Faour WH, Takami K, Carter A, Vanderhyden B, Guan Y, Schneider A, Breyer MD, **Kennedy CR**. A maladaptive role for EP4 receptors in podocytes. *J Am Soc Nephrol*. Oct;21(10):1678-90, 2010.
30. Faour WH, Thibodeau JF, **Kennedy CR**. Mechanical stretch and prostaglandin E2 modulate critical signaling pathways in mouse podocytes. *Cell Signal*. Aug;22(8):1222-30, 2010.
31. Cherney DZ, Miller JA, Scholey JW, Nasrallah R, **Hébert RL**, Dekker MG, Slorach C, Sochett EB, Bradley TJ. Renal hyperfiltration is a determinant of endothelial function responses to cyclooxygenase 2 inhibition in type 1 diabetes. *Diabetes Care*. Jun;33(6):1344-6, 2010.
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33. **Gupta A, Gaikwad J**, Khaira A, Rana DS. Marfan syndrome and focal segmental glomerulosclerosis: a novel association. *Saudi J Kidney Dis Transpl*. Jul;21(4):754-5, 2010.
34. Montezano AC, **Zimmerman D**, Yusuf H, Burger D, Chignalia AZ, Wadhwa V, van Leeuwen FN, **Touyz RM**. Vascular smooth muscle cell differentiation to an osteogenic phenotype involves TRPM7 modulation by magnesium. *Hypertension*. Sep;56(3):453-62, 2010.
35. Burger D, Nishigaki N, **Touyz RM**. New insights into molecular mechanisms of hypertension. *Curr Opin Nephrol Hypertens*. Mar;19(2):160-2, 2010.
36. Touati S, Meziri F, Devaux S, Berthelot A, **Touyz RM**, Laurant P. Exercise Reverses Metabolic Syndrome in High Fat Diet-Induced Obese Rats. *Med Sci Sports Exerc*. Jul 7, 2010.

37. Yogi A, Callera GE, Hipólito UV, Silva CR, **Touyz RM**, Tirapelli CR. Ethanol-induced vasoconstriction is mediated via redox-sensitive cyclo-oxygenase-dependent mechanisms. *Clin Sci (Lond)*. 118(11):657-68, 2010.
38. **Hiremath S**. Prophylaxis of Contrast-Induced Acute Kidney Injury. *Canadian Journal of General Int. Medicine*. 5(2):68-70, 2010
39. Montezano AC, Paravicini TM, Chignalia AZ, Yusuf H, Almasri M, He Y, He G, Callera GE, Krause K-H, Lambeth D, **Touyz RM**. Nicotinamide adenine dinucleotide phosphate reduced oxidase 5 (Nox5) regulation by angiotensin II and endothelin-1 is mediated via calcium/calmodulin-dependent pathways in human endothelial Cells. *Circ Res*. 106(8):1363-73, 2010.
40. Manns B, Hodsman A, **Zimmerman D**, Mendelssohn D.C., Soroka S, Chan C, Jindal K, Klarenbach S. Canadian Society of Nephrology commentary on the 2009 KDIGO Clinical Practice Guideline for the diagnosis, evaluation, and treatment of CKD-mineral and bone disorder (CKD-MBD) . *Am J Kidney Dis*. 55(5):800-812, 2010.
41. White C, Siegal D, **Akbari A**, **Knoll G**. Use of renal function end points in kidney transplant trials: a systemic review. *American Journal of Kidney Disease*, Dec 6;56(6):1140-1157, 2010.
42. White C, **Akbari A**, Doucette S, Fergusson D, **Knoll G**. Estimating GFR in kidney transplantation. *Clinical Chemistry*. Mar;56(3):474-7, 2010.
43. White CA, **Knoll GA**, Poggio ED. Measuring vs estimating glomerular filtration rate in kidney transplantation. *Transplantation Reviews*. 24:18–27, 2010.
44. Heshka J, **Ruzicka M**, **Hiremath S**, **McCormick B**. Spironolactone is safe and effective for difficult to control hypertension in chronic kidney disease. *J. Am Soc. Hypertens*. Nov-Dec; 4(6):295-301, 2010.

B) BOOK CHAPTERS 2010

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.
2. **Touyz RM**, Chignalia A, Sedeek M. Reactive Oxygen Species, Oxidative Stress and Hypertension. In Studies on cardiovascular disorders. Ed A. Shah, F. Laurindo 2010.

C) AWARDS/DISTINCTIONS 2010

2010 - **Dr. Kevin Burns** won the Kidney Foundation of Canada Medal for Research Excellence for 2010.

Nov 2010 - **Dr. Rhian Touyz** was presented with the Distinguished Service Award at Hypertension Canada's Annual Meeting in Vancouver.

2005-2012 - Canada Research Chair in Hypertension (tier 1) (**Dr. R. Touyz**).

2007-2011 - NIH Member of Hypertension and Microcirculation Study Section (**Dr. R. Touyz**).

2009 - **Dr. Rhian Touyz** appointed as the Chair of the Kidney Council for High Blood Pressure Research of the American Heart Association.

2008-2010 - Ontario Graduate Scholarship In Science and Technology salary support (**Erin Stitt** from Dr.C. Kennedy's lab).

2008-2010 - Fonds de recherche en santé du *Québec (FRSQ)* , salary support for two years, \$15,000 per year (**Genevieve Paris** from Dr. Richard Hébert lab).

2009-2001 - CIHR Fellowship, salary support (**Dr. A. Montezano** from Dr. Rhian Touyz' lab)

2009-2012 - KRESCENT, salary support (**Dr. Mona Sedeek** from Dr. Rhian Touyz' lab).

2009-2012 - KRESCENT, salary support (**Dr. Dylan Burger** from Dr. Rhian Touyz' lab).

2009 -2010 - The KRC laboratory scientist group, led by **Dr. R. Touyz**, was awarded the first ever team grant from the Kidney Foundation of Canada and Pfizer Canada, Inc.

2009-2010 - Ontario Graduate Scholarship In Science and Technology salary support (**Jean Francois Thibodeau** from Dr.C. Kennedy's lab)

2010 - Post Doctoral Scholarship Award from Italian Night Committee c/o Kidney Foundation of Canada (**Dr. Ana Briones**, Dr. R. Touyz' lab).

2009 - Graduate Student Scholarship Award from Italian Night Committee c/o Kidney Foundation of Canada (**Jean-Francois Thibodeau**, Dr. C. Kennedy's lab).

2010 - One of 3 top poster presentation awards at the Gordon Research Conference on Angiotensin 2010. (**Dr. Dylan Burger** from Dr. Touyz' lab).

2008-2011- **Dr. Kevin Burns** appointed Chair, Biomedical Scientific Committee, KFOC

2010 - Winner, Top 10 Trainee Oral Presentations, cash award of \$1,500 at the Canadian Society of Nephrology on May 29, 2010. (**Dr. Dylan Burger** from Dr. Touyz' lab).

2010 - Oral presentation award (\$200) at the Ontario Hypertension Society conference on May 28th (**Hiba Yusuf** from Dr. Touyz' lab).

2010 - Poster presentation at the Ontario Hypertension Society Conference on May 28th (**Dr. Augusto Montezano from** Dr. Touyz' lab).

2010 - Natural Sciences and Engineering Research Council of Canada (*NSERC*) salary award of \$4,500 for summer of 2010 (**Dylan Kwart** from Dr. Touyz' lab).

2010 - Vancouver Hypertension 2010 award, Complementary registration (\$450) for (**Dr Dylan Burger** from Dr. Touyz' lab).

2010 - Canadian Nitric Oxide Society, Post Doctoral Fellow Presentation Award, \$150 to (**Dr. Dylan Burger** from Dr. Touyz' lab).

2010 - Master's Award: Frederick Banting and Charles Best Canada Graduate Scholarships \$17,500 to (**Jean-Francois Thibodeau** from Dr. Kennedy's lab).

2010 - International Society of Hypertension \$1,000 award for ISH International Forum Poster Prize to (**Dr. Dylan Burger** from Dr. Touyz' lab).

2010 - OHRI summer students recognized for exceptional presentations of research project, the OHRI's Goodman Cohen Summer Student Award for work on kidney disease for (**Laura MacLeod** Dr. Chris Kennedy's lab).

2010 - Trainee awards from the International Society of Hypertension/Canadian Hypertension Society for (**Drs. Dylan Burger, Alvaro Yogi and Augusto Montezano** from Dr. Touyz' lab).

2010 - **Brown, PA**. Dr Peter J Swedko Memorial Legacy Endowment Fund. The Ottawa Hospital Foundation. Ottawa, Ontario.

2009-2010 - **Knoll GA**. Department of Medicine Investigator Support for Research.

2009-2013 - **Knoll GA**. Department of Medicine Mid-Career Research Salary Award.

2010-2015 - **Knoll GA**. University of Ottawa Faculty of Medicine, Tier 1 Research Chair.

2010 - KFOC Special Award for contributions to the KRESCENT Program (with Dr. Adeera Levin), awarded at the National Meeting of the Kidney Foundation of Canada. **Burns K**.

2009-2012 - Department of Medicine Research Chair Award. **Burns K**.

2008-2010 - Department of Medicine New Faculty Recruitment Award. **Fairhead T**.

2010 - **Akbari A** completed his MSc degree in Epidemiology at the University of Ottawa.

D) INVITED PRESENTATIONS 2010

1. January 25-26, 2010 - **Touyz RM**. Canadian Institutes for Health Research Sodium Meeting in Toronto, Canada.
2. January 24-25, 2010, - **Knoll, GA**. Renin-angiotensin system blockade in kidney transplantation at Mayo Clinic, Rochester, Minnesota.
3. February 2-8, 2010 - **Touyz RM**. Adipocytes, vascular biology and hypertension at the South African Hypertension Society in South Africa.
4. February 10-12, 2010 – **Touyz RM**. NIH California, USA.
5. February 21-26, 2010 - **Touyz RM**. Angiotensin at the Gordon Research Conference in Ventura, CA, USA.
6. February 24-25, 2010 - **Knoll, GA**. Visiting Professor, Division of Nephrology and Multi-Organ Transplant Program, Dalhousie University, Nova Scotia.
7. March 2010 - **Akbari A**. Medical complications of pregnancy, who should be referred to Nephrology? How to do Research in Doha, Qatar.
8. March 18, 2010 - **Touyz RM** Noxes, signalling and vascular (patho)biology. Hypertension and Vascular Research Division Seminar, Henry Ford Hospital , Detroit, USA.
9. March 23, 2010 - **Touyz RM**. Managing Hypertension at CHEP 2010 at McGill University in Montreal, Canada.
10. April 2, 2010 - **Touyz RM**. Adipocytes and vascular (patho)biology. Seminar series of the Dept of Pharmacology. New York Medical Center, New York.
11. April 16-18, 2010 - **Touyz RM**. Novel concepts in vascular signalling in hypertension: molecules to patient's renin-angiotensin system. Capri, Italy.
12. April 20-25, 2010 - **Touyz RM**. Role of magnesium and novel cation channels in cardiovascular disease at the FASEB (ASN) meeting in Anaheim, CA, USA.
13. May 1-4, 2010 - **Touyz RM** What the hypertension specialist should know about vascular remodeling? American Society of Hypertension in New York, NY, USA.
14. May 4-5, 2010 **Touyz RM**. Nox isoforms and cell signaling at the Nox Meeting at the University of Pittsburgh, Pittsburgh, USA.
15. May 12, 2010 - **Burns KD**. Meet the Leaders at the Ottawa Academic Health Sciences Leadership Program.

16. May 14, 2010 - **Touyz RM** Oxidative stress and vascular (patho)biology at the Oxidative Stress Symposium at the University of Kentucky, USA.
17. May 15, 2010 – **Hiremath, S**, Contrast Induced Acute Kidney Injury: an update: at Cross-Sectional imaging of the abdomen and pelvis at the Easter Ontario Radiology CME. Ottawa.
18. May 17, 2010 - **Touyz RM** Oxidative stress, Noxes and hypertension – what is the clinical significance? Cleveland Clinic in Cleveland, OH, USA.
19. May 2010 - **Karpinski J**. Mentorship. Career Development Half Day. Canadian Society of Nephrology Annual Refresher Course. Montreal QC.
20. May 26-27, 2010 - Kidney Research Scientist Core Education and National Training Program (KRESCENT) Workshop. Montreal, Quebec. **Burns K**.
21. May 28-30, 2010 - **Touyz RM** Ontario Hypertension Society in Nottawasaga, ON, Canada.
22. June 6-11, 2010 - **Touyz RM** Nox4, Nox5 and diabetic nephropathy. Nox family NADPH Oxidases. Gordon Research Conference. Les Diablerets, Geneva, Switzerland.
23. June 15-16, 2010 - **Touyz RM** NIH meeting in Seattle, USA.
24. June 17-19, 2010 - **Touyz RM** Adipocytes and aldosterone at the Aldosterone Meeting, San Diego, USA.
25. June 18-19, 2010 - **Touyz RM**, Vascular inflammation and endothelial function at the European Society of Hypertension, Oslo, Norway.
26. July 16-19, 2010 - **Touyz RM** Redox signaling abnormalities in systemic hypertension in Berlin, Germany.
27. July 20-22, 2010 - **Touyz RM**. Superoxide and vascular disease at the IUPHAR/CPS meeting in Copenhagen, Denmark.
28. August 14, 2010 - **Knoll, GA**. Cardiac complications post transplantation at the Post-Graduate Weekend of the XXIII International Congress of the Transplantation Society, Vancouver, BC.
29. September 10 -11, 2010 - **Knoll, GA**. Novel markers to measure renal transplant function. Renal Function and Transplantation Workshop hosted by the Hospital of Saint-Etienne, Université Jean Monnet de Saint-Etienne and Université de Lyon. Paris, France.
30. September 10-11, 2010 - **Knoll, GA** Endpoints in renal transplant trials. Renal Function and Transplantation Workshop. Hosted by the Hospital of Saint-Etienne, Université Jean Monnet de Saint-Etienne and Université de Lyon. Paris, France.

31. September 23-25, 2010 - **Touyz RM.** The vascular renin-angiotensin system: diverse vascular function and cellular signaling at the World Congress for Microcirculation in Paris, France.
32. September 25-29, 2010 - **Touyz RM.** Integrating newer concepts in vascular signaling for understanding the mechanisms of hypertension at the International Society of Hypertension in Vancouver, BC, Canada.
33. September 25-29 - **Touyz RM.** How do you assess oxidative stress? At the International Society of Hypertension. Vancouver, Canada.
34. October 2, 2010 - **Knoll GA.** Use of statins and RAS blockade in prevention of kidney disease in kidney transplant recipient. Prevention in Renal Disease Annual Conference, Toronto, Ontario.
35. October 14, 2010 - **Knoll GA.** **Preserving renal allograft function. Transplant Atlantic 2010 Conference, Halifax, Nova Scotia.**
36. October 13-16, 2010 - **Touyz RM.** Novel paradigms in hypertension. CHBPR in Washington, DC.
37. October 19, 2010 – **Hébert, R.** Division of Nephrology, CHUM - Hôpital Hôtel-Dieu de Montréal, Hôpital Sacré-Coeur de Montréal and Hôpital Notre-Dame de Montréal and MUHC - Royal Victoria Hospital, Montreal General Hospital and Jewish General Hospital. Montréal, QC.
38. November 13-17, 2010 - **Touyz RM.** ROS, Noxes and hypertension. Scientific Sessions American Heart Association in Chicago, USA.
39. November 13-17, 2010 - **Touyz RM.** Role of nitric oxide in cardiovascular and renal disease. Scientific Sessions, AHA. Chicago Nov 13-17, 2010.
40. November 16, 2010 - **Knoll GA.** Transplantation – Renal Allograft Function. In-Depth Nephrology Course on Improving Comparative Effectiveness Research of Drugs, Devices, and Clinical Strategies in Nephrology. American Society of Nephrology Annual Scientific Meeting, Denver, Colorado, USA.
41. November 20, 2010 - **Knoll GA.** Proteinuria following transplantation: Differential diagnosis and management. Clinical Nephrology Conference on the Well-Transplant Visit: More than Vital Signs and a Creatinine Check. American Society of Nephrology Annual Scientific Meeting, Denver, Colorado, USA.
42. November, 2010 – **Drs. Knoll, GA., Burns, KD. and Fairhead T.** Workshop teaching at the KRESCENT meeting in Ottawa.

E) VISITING SCHOLARS

1. March 25, 2010 - **Dr. Anne Marie Nuyt, MD.** from St-Justine, University of Montreal presented “Renal and vascular consequences of neonatal oxygen exposure” at the Kidney Research Centre Journal Club.
2. April 22, 2010 - **Dr. Todd Alexander** Assistant Professor of Pediatrics from the University of Alberta, Edmonton, Alberta presented “New insights into the factors mediating proximal tubular calcium flux” at the Kidney Research Centre Journal Club.
3. April 27, 2010 - **Dr. Andrew A. House, MD, MSc, FRCPC.** from University of Western Ontario, Division of Nephrology presented “The Italian job, why dose of CRRT matters” at the Division of Nephrology Grand Rounds.
4. April 29, 2010 - **Dr. Dominik Mueller** from Germany presented “Role of the immune system in hypertension-induced target organ damage” at the Kidney Research Centre Journal Club.
5. June 1, 2010 - **Dr. Atul Humar, MD, MSc, FRCPC,** Director, Transplant Infectious Diseases, Associate Professor , Dept of Medicine, University of Alberta presented “Hot topics in transplant ID” at the Division of Nephrology, Nephrology Grand Rounds.
6. June 22, 2010 - **Dr. Navdeep Tangri, MD, FRCPC,** Clinical Research Fellow, Division of Nephrology, Tufts Medical Centre, Boston MA presented “A new predictive model for progression of chronic kidney disease” at the Division of Nephrology, Nephrology Grand Rounds.
7. September 14, 2010 - **Dr Darren Yuen, MD, FRCPC** presented “Endothelial progenitor cells; A new therapy for chronic kidney disease? ” at the Division of Nephrology, Nephrology Grand Rounds.
8. September 21, 2010 - **Dr. Robert M.A. Richardson, MD, FRCPC,** Professor of Medicine, University of Toronto, Director of Hemodialysis, University Health Network presented “SLED is the best treatment for ICU AKI” at the Division of Nephrology, Nephrology Grand Rounds.
9. October 12, 2010 - **Dr. S. Joseph Kim, MD, PhD, MHS, FRCPS,** Assistant Professor of Medicine, Faculty of Medicine, University of Toronto, Division of Nephrology and the Kidney Transplant Program, Toronto General Hospital, University Health Network presented “Delayed graft function and the risk of death with function after kidney transplantation; Is there a link?” at the Division of Nephrology, Nephrology Grand Rounds.
10. October 18, 2010 - **Dr. Frederic Jaisser, MD, PhD,** from INSERM France presented “Pathophysiological roles of aldosterone and the mineralocorticoid receptor: novel paradigms” at the Kidney Research Centre Journal Club.

11. November 9, 2010 - **Dr. Joanne Bargman, MD, FRCPC**, Professor of Medicine, University of Toronto, Staff Nephrologist, University Health Network, Director of Home Peritoneal Dialysis Unit, Director of Clinical Fellowship Program in Nephrology at the University of Toronto, Toronto General Hospital, presented “Lupus nephritis, “solved” and “unsolved” problems” at the Division of Nephrology, Nephrology Grand Rounds
12. December 21, 2010 - **Taben Hale, PhD**, Assistant Professor from University of Arizona College of Medicine – Phoenix presented “Effect of ACE inhibition on vascular modeling in hypertension “ at The Kidney Research Centre.