

## Department of Medical Imaging Annual Report 2004-2005

<b>CHAIR'S REPORT</b> .....	<b>4</b>
<b>DEPARTMENT OF MEDICAL IMAGING - UNIVERSITY OF TORONTO</b> .....	<b>7</b>
Radiologists-in-Chief.....	7
Program Directors.....	7
Division Heads .....	7
Department Administrative Staff.....	7
<b>COMMITTEES</b> .....	<b>8</b>
Executive Committee .....	8
Promotions Committee .....	8
Undergraduate Teaching Committee .....	8
Specialty Training Committee .....	8
<b>UNIVERSITY OF TORONTO FULLY AFFILIATED HOSPITALS AND INSTITUTES</b> .....	<b>9</b>
<b>DEPARTMENT OF MEDICAL IMAGING FACULTY</b> .....	<b>10</b>
<b>THE DEPARTMENT OF MEDICAL IMAGING AND THE UNIVERSITY OF TORONTO TEACHING HOSPITALS</b> .....	<b>14</b>
University Health Network/Mount Sinai Hospital .....	14
Sunnybrook and Women's College Health Sciences Centre .....	14
St. Michael's Hospital .....	15
Hospital for Sick Children .....	15
<b>RESEARCH GRANTS</b> .....	<b>16</b>
<b>PUBLICATIONS: PEER-REVIEWED PAPERS AND ABSTRACTS</b> .....	<b>22</b>
<b>PUBLICATIONS: NON-PEER-REVIEWED, BOOKS, CHAPTERS</b> .....	<b>41</b>
<b>INVITED PRESENTATIONS AND VISITING PROFESSORSHIPS</b> .....	<b>44</b>
<b>SCIENTIFIC PRESENTATIONS: PEER-REVIEWED PAPERS, POSTERS AND EXHIBITS</b> .....	<b>65</b>
<b>AWARDS AND SPECIAL RECOGNITION</b> .....	<b>90</b>
<b>RESEARCH PROGRAM</b> .....	<b>91</b>
The Faculty Research Award.....	91
The Medical Imaging Research and Development Awards.....	91
Multidisciplinary Research Program – Translational Research Grant.....	93
RSNA Roentgen Resident/Fellow Research Award.....	93
Research Day.....	93
Positron Emission Tomography Centre, Centre for Addiction and Mental Health .....	93
Imaging/Bioengineering Research, SWCHSC .....	94
Image Guided Minimally Invasive Therapy (IGMIT) .....	94
Downtown Imaging Physics Group.....	95
Faculty List – non-clinical .....	102
Grants .....	103
Publications .....	105
Books or Book Chapters.....	111
Abstracts and Scientific Presentations .....	111
Patents.....	114
Invited Presentations.....	115
Teaching - Hours of Lectures .....	115

Department of Medical Imaging - Annual Research Day 2005.....	116
<b>RESIDENT TRAINING PROGRAM .....</b>	<b>119</b>
General Description .....	119
PGY1 .....	119
PGY2 .....	119
PGY3 .....	120
PGY4 .....	120
PGY5 .....	120
Armed Forces Institute of Pathology .....	120
Physics Instruction.....	120
Conferences .....	121
Seminars and Half-Day Program.....	121
Research .....	121
Rounds.....	121
View Box Teaching .....	122
Journal Club.....	122
Visiting Professor Program.....	122
Organ Imaging Review Course .....	122
Program Evaluation .....	122
Program Supervision .....	122
Resident Evaluations .....	123
Resident Awards.....	123
Summary.....	124
<b>RESIDENTS .....</b>	<b>125</b>
PGY1 Level .....	125
PGY2 Level .....	125
PGY3 Level .....	126
PGY4 Level .....	126
PGY5 Level .....	127
<b>NUCLEAR MEDICINE TRAINING PROGRAM .....</b>	<b>128</b>
General Description .....	128
General Objectives .....	128
Dual Radiology and Nuclear Medicine Residency .....	128
<b>RADIOLOGY SCIENTIST TRAINING PROGRAM.....</b>	<b>129</b>
Objectives .....	129
Organization .....	129
Eligibility and Application Procedure .....	129
Remuneration .....	129
Selection of Research Project and Supervisor .....	129
Graduate Degrees .....	130
Clinical Responsibilities .....	130
<b>OBJECTIVES OF TRAINING &amp; SPECIALTY TRAINING REQUIREMENTS IN DIAGNOSTIC RADIOLOGY .....</b>	<b>131</b>
Definition.....	131
General Objectives .....	131
Specific Objectives .....	131
Training in Canada .....	134
<b>SPECIALTY TRAINING REQUIREMENTS IN DIAGNOSTIC RADIOLOGY .....</b>	<b>135</b>
<b>RESIDENT RESEARCH PROGRAM.....</b>	<b>137</b>

Seminar Series .....	137
Support .....	137
Presentation Day.....	138
<b>FELLOWSHIP PROGRAM .....</b>	<b>139</b>
<b>UNDERGRADUATE PROGRAM .....</b>	<b>142</b>
Year I Medicine .....	142
Year II Medicine.....	142
Year III Clerkship.....	144
Year IV .....	145
Other Teaching Activities and Involvement .....	146
<b>CONTINUING EDUCATION PROGRAM.....</b>	<b>148</b>
Organ Imaging Review .....	148
<b>INVITED LECTURERS AND VISITING PROFESSORS.....</b>	<b>150</b>

## CHAIR'S REPORT

This past year we moved forward with the implementation of our May 2004 Strategic Plan update. Six research teams received the first year of a two to three year departmental seed grant to enable them to move forward with their translational research programs, most of which are in collaboration with related groups in Medical Biophysics, Surgery, Radiation Oncology and Neurosciences. These areas of translational research include: advanced methods of cancer imaging and treatment, neuro-imaging, microvascular imaging, musculoskeletal imaging, minimally invasive image guided therapy, and image registration and fusion. As in the past few years, in order to achieve our goals we continued to increase the number of faculty with protected research time, principally funded from clinical practice plans, but with financial incentives from our university budget. At the trainee level, Dr. Richard Bitar, our first Resident to enroll in a Ph.D program during residency, will soon complete his Ph.D. requirements in the area of non-invasive vascular imaging. We plan to have a second Resident enroll in a Ph.D. program next year.

We continue to have strong educational programs. I am especially grateful to our Program Directors, all of whom contribute a great deal of their time towards the success of our department: Drs. Timothy Dowdell and Nasir Jaffer (Undergraduate Program), Drs. Walter Montanera and Suzanne Laughlin (Residency Program), Dr. Manohar Shroff (Fellowship Program), and Dr. Paul Hamilton (Continuing Education). At the Undergraduate level in particular, Drs. Dowdell and Jaffer made significant progress in creating a standardized spiral program for all four years of the curriculum.

Our department maintained strong support of its faculty for protected research time. This year, the faculty members with departmentally sponsored research time were:

- Dr. Mostafa Atri (Evaluation of QCT and DCE-MRI of cervical cancer perfusion and USPIO-enhanced MRI of cervical cancer lymphadenopathy)
- Dr. Petrina Causer (MRI evaluation of the contralateral breast in women with a recent diagnosis of breast cancer)
- Dr. Bairbre Connolly (Radiation dose to children and radiologist during PICC Insertions)
- Dr. Alan Daneman (Necrotizing enterocolitis: comparison of Grey scale and Doppler sonography findings with clinical radiographic and pathological findings)
- Dr. Andrea Doria (Comparative measurements of BOLD signal in experimental arthritis according to variations in the region-of-interest)
- Dr. Richard Farb (The dural worm: A sign of previous sinovenous thrombosis)
- Dr. Kartik Jhaveri (Advanced MRI techniques application (diffusion imaging and MR spectroscopy) in ovarian mass characterization)
- Dr. Roberta Jong (The ACRIN Digital Mammography Imaging Screening Trial)
- Dr. John Kachura (Radiofrequency ablation of liver tumors: Patient survival, local progression-free survival and factors for failure of effectiveness)
- Dr. Korosh Khalili (Prevalence of cecal angiodysplasia in an asymptomatic population. Multidetector CT angiography in evaluation of occult GI hemorrhage)
- Dr. Martin O'Malley (Growth rates of hepatocellular carcinoma stratified by size)

- Dr. Narinder Paul (Comparison of low dose computed tomography of the thorax (LDCTT) and minimum dose computed tomography of the thorax (MD-CTT) with chest radiography (CXR) for the detection of lung metastases in a high risk population)
- Dr. Yves Provost (CT coronary angiography)
- Dr. Dheeraj Rajan (Interventional research/Research in minimally invasive therapy)
- Dr. Heidi Roberts (Early lung cancer detection using computed tomography)
- Dr. Manohar Shroff (Is contrast really needed following a normal unenhanced CT of the brain in children?)
- Dr. Lawrence White (Quantitative T2 Mapping of Cartilage Transplantation in an Animal Model)
- Dr. Stephanie Wilson (Introduction of microbubble enhanced sonography to routine clinical practice, with cost impact analysis)

We are very proud of the excellent teaching in all of our educational programs. Every year we publicly recognize those teachers selected by our trainees as being the most outstanding. Our departmental teaching awards this year were:

Edward L. Lansdown Award for Outstanding Teaching in the Residency Training Program

- Dr. Robert Bleakney

Outstanding teaching in the residency program

- Dr. Mostafa Atri
- Dr. Edna Becker
- Dr. Robert Bleakney
- Dr. Raymond Chan
- Dr. Dae-Gyun Chung
- Dr. TaeBong Chung
- Dr. Lisa Ehrlich
- Dr. Anthony Hanbidge
- Dr. Nasir Jaffer
- Dr. Edward Kassel
- Dr. Korosh Khalili
- Dr. Matthew Lax
- Dr. Walter Montanera
- Dr. Derek Muradali
- Dr. David Salonen
- Dr. Manohar Shroff
- Dr. Harry Shulman
- Dr. Sean Symons
- Dr. Louis Wu
- Dr. Eugene Yu
- Dr. Leon Zelovitzky

Outstanding teaching in the fellowship program

- Dr. Derek Armstrong

- Dr. Mostafa Atri
- Dr. Paul Babyn
- Dr. Susan Blaser
- Dr. Peter Chait
- Dr. Dae-Gyun Chung
- Dr. Alan Daneman
- Dr. Anthony Hanbidge
- Dr. Kartik Jhaveri
- Dr. Tae Kyoung Kim
- Dr. David Manson
- Dr. David Mikulis
- Dr. Walter Montanera
- Dr. Oscar Navarro
- Dr. Martin O'Malley
- Dr. Charles Raybaud
- Dr. Manohar Shroff
- Dr. Sean Symons
- Dr. Robert Willinsky
- Dr. Stephanie Wilson
- Dr. Louis Wu

Achieved distinction for outstanding teaching in both the residency and fellowship programs

- Dr. Mostafa Atri
- Dr. Dae-Gyun Chung
- Dr. Anthony Hanbidge
- Dr. Walter Montanera
- Dr. Manohar Shroff
- Dr. Sean Symons
- Dr. Louis Wu

The academic promotions this year were (effective July 1, 2005):

Associate Professor - Dr. Derek Muradali  
 Assistant Professor - Dr. Margaret Cheng  
                                   Dr. Sophie Pantazi  
                                   Dr. Louis Wu

I would like to thank Amy Shea, Gina Sciortino, Ayethida Walker and Felomena Teixeira - the administrative staff at the university offices. Gina will be temporarily retiring this year to spend more time with her young and very active family. I will miss her greatly. Fortunately we have managed to recruit an excellent person for her job – Suzanne D'Alvise – who has now assumed the position of department business officer. I greatly appreciate the efforts of the team!

Walter Kucharczyk, M.D., F.R.C.P. (C)  
 Professor and Chair

# DEPARTMENT OF MEDICAL IMAGING - UNIVERSITY OF TORONTO

(as of June 30, 2005)

Chair ..... Kucharczyk, W.  
Associate Chair..... Roberts, T.

## **Radiologists-in-Chief**

Hospital for Sick Children .....Babyn, P.  
Mount Sinai Hospital-University Health Network (Princess Margaret Hospital/  
Toronto General Hospital/Toronto Western Hospital) ..... Bret, P.  
St. Michael's Hospital ..... Common, A.  
Sunnybrook & Women's College Health Sciences Centre .....Moody, A.

## **Program Directors**

Continuing Education ..... Hamilton, P.  
Fellowship ..... Shroff, M.  
Neuroradiology ..... Fox, A.  
Nuclear Medicine ..... Hershkop, M.  
PGY1 ..... Laughlin, S.  
Radiology Residency ..... Montanera, W.  
Radiology Residency (Co-Director) ..... Laughlin, S.  
Research ..... Roberts, T.  
Undergraduate ..... Dowdell, T.  
Undergraduate (Co-Director)..... Jaffer, N.

## **Division Heads**

Abdominal Imaging..... Atri, M.  
Breast Imaging.....Muradali, D.  
Cardiothoracic  
    Cardiac Imaging ..... Merchant , N.  
    Thoracic Imaging ..... Paul, N.  
Musculoskeletal Imaging..... White, L.  
Neuroradiology ..... TerBrugge, K.G.  
Pediatric Imaging..... Manson, D.  
Vascular and Interventional Radiology ..... Chait, P.

## **Department Administrative Staff**

Business Officer .....Sciortino, G.  
Administrative Assistant.....Shea, A.  
Residency Program Assistant ..... Teixeira, F.  
Research Program Assistant ..... Walker, A.

## COMMITTEES

### Executive Committee

Kucharczyk, W. (Committee Chair)  
Jaskolka, J. (Chief Resident)  
Babyn, P.  
Bret, P.  
Laughlin, S.  
Common, A.  
Dowdell, T.  
Hamilton, P.  
Hershop, M.  
Jaffer, N.  
Laughlin, S.  
Montanera, W.  
Moody, A.  
Roberts, T.  
Salem, S.  
Shroff, M.

### Promotions Committee

TerBrugge, K. (Committee Chair)  
Mostafa Atri  
Babyn, P.  
Jaffer, N.  
Rubenstein, J.  
Weiser, W.  
Yaffe, M.

### Undergraduate Teaching Committee

Dowdell, T. (Committee Chair)  
Bleakney, R.  
Chawla, T.  
Chung, T.B.  
Deitel, W.  
Jaffer, N.  
Margolis, M.  
Paul, N.  
Sarrazin, S.  
Shroff, M.

### Specialty Training Committee

Montanera W. (Committee Chair)  
Jaskolka, J. (Chief Resident)  
David, E.  
Hayeems, E.  
Herskop, M.  
Laughlin, S.  
MacDonald, C.  
Mikulis, D.  
Pearce, D  
Prasad, V.  
Martinovic E.  
Rosta, N.  
Stimec, J.  
Mohktassi, A.



## UNIVERSITY OF TORONTO FULLY AFFILIATED HOSPITALS AND INSTITUTES

<b>Hospital for Sick Children</b> .....	555 University Avenue Toronto, Ontario M5G 1X8
<b>Mount Sinai Hospital</b> .....	600 University Avenue Toronto, Ontario M5G 1X5
<b>St. Michael's Hospital</b> .....	30 Bond Street Toronto, Ontario M5B 1W8
<b>Sunnybrook &amp; Women's College Health Sciences Centre</b>	
Sunnybrook Campus .....	2075 Bayview Avenue Toronto, Ontario M4N 3M5
Women's College Campus .....	76 Grenville Street Toronto, Ontario M5S 1B2
<b>University Health Network</b>	
Princess Margaret Hospital.....	610 University Avenue Toronto, Ontario M5G 2M9
Toronto General Hospital .....	585 University Avenue, NCSB Toronto, Ontario M5G 2N2
Toronto Western Hospital .....	399 Bathurst Street Toronto, Ontario M5T 2S8
<b>Centre for Addiction and Mental Health</b> .....	250 College Street Toronto, Ontario M5T 1B8
<b>Positron Emission Tomography Centre</b> .....	250 College Street Toronto, Ontario M5T 1B8

## DEPARTMENT OF MEDICAL IMAGING FACULTY

Academic Rank, Subspecialty Division and Hospital as of June 30, 2005

<u>NAME</u>	<u>RANK</u>	<u>DIVISION</u>	<u>HOSPITAL</u>
Alton, D.J.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Arenson, A.M.	Assistant Professor	Abdominal Imaging	Sunnybrook & Women's College Health Sciences Centre
Armstrong, D.	Assistant Professor	Neuroradiology	Hospital for Sick Children
Ash, J.M.	Associate Professor	Pediatric Imaging	Hospital for Sick Children
Atri, M.	Associate Professor	Abdominal Imaging	Sunnybrook & Women's College Health Sciences Centre
Au, F.	Lecturer	Breast Imaging	University Health Network
Aviv, R.	Assistant Professor	Neuroradiology	Sunnybrook & Women's College Health Sciences Centre
Babyn, P.S.	Associate Professor	Pediatric Imaging	Hospital for Sick Children
Becker, E.J.	Associate Professor	Musculoskeletal Imaging	University Health Network
Blaser, S.	Associate Professor	Neuroradiology	Hospital for Sick Children
Bleakney, R.	Assistant Professor	Musculoskeletal Imaging	Mount Sinai Hospital
Blend, R.	Associate Professor	Neuroradiology	University Health Network
Bret, P.	Professor	Abdominal Imaging	University Health Network
Bukhanov, K.	Assistant Professor	Breast Imaging	Mount Sinai Hospital
Caldwell, C.B.	Assistant Professor	Research	Sunnybrook & Women's College Health Sciences Centre
Causar, P.	Lecturer	Abdominal Imaging	Sunnybrook & Women's College Health Sciences Centre
Chait, P.G.	Associate Professor	Pediatric Imaging	Hospital for Sick Children
Chan, R.	Assistant Professor	Vascular Imaging	St. Michael's Hospital
Charron, M.	Professor	Pediatric Imaging	Hospital for Sick Children
Chawla, T.	Assistant Professor	Abdominal Imaging	Mount Sinai Hospital
Cheng, M.H.L.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Cheyne, D.	Associate Professor	Pediatric Imaging	Hospital for Sick Children
Christakis, M.	Assistant Professor	Musculoskeletal Imaging	Sunnybrook & Women's College Health Sciences Centre
Chuang, S.H.	Associate Professor	Neuroradiology	Hospital for Sick Children
Chui, M.C.	Assistant Professor	Neuroradiology	St. Michael's Hospital
Chung, D-G.	Lecturer	Abdominal Imaging	St. Michael's Hospital
Chung, T.B.	Assistant Professor	Cardiothoracic Imaging	University Health Network
Common, A.A.	Assistant Professor	Vascular Imaging	St. Michael's Hospital
Connolly, B.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Cooke, G.M.	Assistant Professor	Musculoskeletal Imaging	St. Michael's Hospital
Cooper, P.W.	Assistant Professor	Neuroradiology	Sunnybrook & Women's College Health Sciences Centre
Crawley, A.	Assistant Professor	Research	University Health Network
Curpen, B.	Assistant Professor	Breast Imaging	Sunnybrook & Women's College Health Sciences Centre
Damyranovich, A.	Assistant Professor	Research	University Health Network
Daneman, A.	Professor	Pediatric Imaging	Hospital for Sick Children
David, E.	Lecturer	Vascular Imaging	Sunnybrook & Women's College Health Sciences Centre
Deitel, W.	Assistant Professor	Abdominal Imaging	St. Michael's Hospital
Dill-Macky, M.	Assistant Professor	Breast Imaging	University Health Network
Doria, A.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Dowdell, T.R.	Assistant Professor	Musculoskeletal Imaging	St. Michael's Hospital
Ehrlich, L.E.	Associate Professor	Nuclear Medicine	Sunnybrook & Women's College Health Sciences Centre
Farb, R.	Assistant Professor	Neuroradiology	University Health Network
Fishell, E.	Associate Professor	Breast Imaging	Sunnybrook & Women's College Health Sciences Centre
Fong, K.	Associate Professor	Abdominal Imaging	Mount Sinai Hospital
Fox, A.	Professor	Neuroradiology	Sunnybrook & Women's College Health Sciences Centre
Ganguli, N.	Lecturer	Nuclear Medicine	Sunnybrook & Women's College Health Sciences Centre
Gianfelice, D.	Associate Professor	Abdominal Imaging	University Health Network
Gilday, D.L.	Professor	Pediatric Imaging	Hospital for Sick Children
Glanc, P.	Assistant Professor	Abdominal Imaging	Sunnybrook & Women's College Health Sciences Centre
Goldberg, F.	Assistant Professor	Breast Imaging	St. Michael's Hospital
Gray, B.	Assistant Professor	Neuroradiology	St. Michael's Hospital
Greyson, N.D.	Associate Professor	Nuclear Medicine	St. Michael's Hospital
Haider, M.	Assistant Professor	Abdominal Imaging	University Health Network
Hamilton, P.A.	Assistant Professor	Abdominal Imaging	Sunnybrook & Women's College Health Sciences Centre

Hanbidge, A.	Assistant Professor	Abdominal Imaging	University Health Network
Hayeems, E.	Assistant Professor	Vascular Imaging	Mount Sinai Hospital
Hendler, A.L.	Assistant Professor	Nuclear Medicine	University Health Network
Herman, S.J.	Associate Professor	Cardiothoracic Imaging	University Health Network
Hershkop, M.	Assistant Professor	Nuclear Medicine	University Health Network
Ho, C.S.	Professor	Vascular Imaging	University Health Network
Houle, S.	Associate Professor	Nuclear Medicine	Centre for Addiction and Mental Health
Hurwitz, G.	Associate Professor	Nuclear Medicine	St. Michael's Hospital
Ibach, K.	Lecturer	Abdominal Imaging	University Health Network
Jaffer, N.M.	Associate Professor	Vascular Imaging	Mount Sinai Hospital
Jang, H.J.	Assistant Professor	Abdominal Imaging	University Health Network
Jhaveri, K.	Assistant Professor	Abdominal Imaging	University Health Network
John, P.	Associate Professor	Pediatric Imaging	Hospital for Sick Children
Jong, R.A.	Associate Professor	Breast Imaging	Sunnybrook & Women's College Health Sciences Centre
Kachura, J.	Assistant Professor	Vascular Imaging	University Health Network
Kassel, E.E.	Associate Professor	Neuroradiology	Mount Sinai Hospital
Kassner, A.	Assistant Professor	Research	University Health Network
Keller, M.A.	Assistant Professor	Neuroradiology	University Health Network
Khalili, K.	Assistant Professor	Abdominal Imaging	University Health Network
Kim, T.K.	Associate Professor	Abdominal Imaging	University Health Network
Koff, D.	Assistant Professor	Abdominal Imaging	Sunnybrook & Women's College Health Sciences Centre
Kucharczyk, W.	Professor and Chair	Neuroradiology	University Health Network
Kulkarni, S.	Assistant Professor	Breast Imaging	University Health Network
Lata, A.C.	Assistant Professor	Cardiothoracic Imaging	St. Michael's Hospital
Laughlin, S.	Assistant Professor	Neuroradiology	University Health Network
Lax, M.	Assistant Professor	Musculoskeletal Imaging	Mount Sinai Hospital
Lazinski, D.	Lecturer	Neuroradiology	Mount Sinai Hospital
Lee, S.K.	Assistant Professor	Neuroradiology	University Health Network
Loucks-Gray, T.	Lecturer	Vascular Imaging	Sunnybrook & Women's College Health Sciences Centre
MacDonald, C.E.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Macgowan, C.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Manson, D.E.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Marcuzzi, D.W.	Assistant Professor	Vascular Imaging	St. Michael's Hospital
Margolis, M.	Assistant Professor	Abdominal Imaging	Mount Sinai Hospital
Marotta, T.	Assistant Professor	Neuroradiology	St. Michael's Hospital
Merchant, N.	Assistant Professor	Cardiothoracic Imaging	University Health Network
McGregor, C.	Lecturer	Abdominal Imaging	Sunnybrook & Women's College Health Sciences Centre
Mikulis, D.	Associate Professor	Neuroradiology	University Health Network
Miller, S.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Montanera, W.	Associate Professor	Neuroradiology	University Health Network
Moody, A.	Associate Professor	Cardiothoracic Imaging	Sunnybrook & Women's College Health Sciences Centre
Muradali, D.	Associate Professor	Breast Imaging	St. Michael's Hospital
Murray, S.Y.	Assistant Professor	Nuclear Medicine	Sunnybrook & Women's College Health Sciences Centre
Navarro, O.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Noël de Tilly, L.	Assistant Professor	Neuroradiology	St. Michael's Hospital
Nugent, P.	Lecturer	Abdominal Imaging	Sunnybrook & Women's College Health Sciences Centre
O'Malley, M.	Assistant Professor	Abdominal Imaging	University Health Network
Oudjhane, K.	Associate Professor	Pediatric Imaging	Hospital for Sick Children
Pantazi, S.	Assistant Professor	Breast Imaging	Mount Sinai Hospital
Paul, N.	Assistant Professor	Cardiothoracic Imaging	University Health Network
Pearce, D.	Lecturer	Musculoskeletal Imaging	St. Michael's Hospital
Provost, Y.	Lecturer	Cardiothoracic Imaging	University Health Network
Pugash, R.A.	Assistant Professor	Vascular Imaging	Sunnybrook & Women's College Health Sciences Centre
Rajan, D.	Assistant Professor	Vascular Imaging	University Health Network
Ranson, M.	Assistant professor	Pediatric Imaging	Hospital for Sick Children
Raybaud, C.	Professor	Neuroradiology	Hospital for Sick Children
Roberts, H.	Associate Professor	Cardiothoracic Imaging	University Health Network
Roberts, T.	Professor	Research	University of Toronto
Rowlands, J.A.	Professor	Research/Medical Biophysics	Sunnybrook & Women's College Health Sciences Centre
Rubenstein, J.D.	Associate Professor	Musculoskeletal Imaging	Sunnybrook & Women's College Health Sciences Centre
Salem, S.	Associate Professor	Abdominal Imaging	Mount Sinai Hospital
Salonen, D.C.	Assistant Professor	Musculoskeletal Imaging	University Health Network

Sarrazin, J.	Assistant Professor	Cardiothoracic Imaging	Sunnybrook & Women's College Health Sciences Centre
Shroff, M.	Assistant Professor	Neuroradiology	Hospital for Sick Children
Shulman, H.S.	Professor	Cardiothoracic Imaging	Sunnybrook & Women's College Health Sciences Centre
Simons, M.	Assistant Professor	Vascular Imaging	University Health Network
Smith, R.	Assistant Professor	Neuroradiology	University Health Network
Sniderman, K.W.	Associate Professor	Vascular Imaging	University Health Network
Sussman, M.	Assistant Professor	Research	University Health Network
Sussman, S.	Lecturer	Cardiothoracic Imaging	University Health Network
Symons, S.	Assistant Professor	Neuroradiology	Sunnybrook & Women's College Health Sciences Centre
Tan, K.T.	Assistant Professor	Vascular Imaging	University Health Network
Temple, M.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
TerBrugge, K.G.	Professor	Neuroradiology	University Health Network
Thomas, K.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Thurston, W.	Assistant Professor	Abdominal Imaging	St. Joseph's Health Centre
Toi, A.	Associate Professor	Abdominal Imaging	Mount Sinai Hospital
Traubici, J.	Assistant Professor	Pediatric Imaging	Hospital for Sick Children
Turner, D.	Assistant Professor	Musculoskeletal Imaging	Sunnybrook & Women's College Health Sciences Centre
Wall, J.	Lecturer	Abdominal Imaging	Sunnybrook & Women's College Health Sciences Centre
Weisbrod, G.L.	Professor	Cardiothoracic Imaging	University Health Network
Weiser, W.J.	Professor	Cardiothoracic Imaging	St. Michael's Hospital
White, L.	Associate Professor	Musculoskeletal Imaging	Mount Sinai Hospital
Willinsky, R.A.	Professor	Neuroradiology	University Health Network
Wilson, S.R.	Professor	Abdominal Imaging	University Health Network
Wood, M.L.	Professor	Research/Medical Biophysics	Sunnybrook & Women's College Health Sciences Centre
Wright, B.E.	Assistant Professor	Breast Imaging	Sunnybrook & Women's College Health Sciences Centre
Wu, L.	Assistant Professor	Abdominal Imaging	Sunnybrook & Woman's College Health Sciences Centre
Xiang, J.	Assistant Professor	Research	Hospital for Sick Children
Yaffe, M.J.	Professor	Research/Medical Biophysics	Sunnybrook & Women's College Health Sciences Centre
Yoo, S-J.	Professor	Pediatric Imaging	Hospital for Sick Children
Yu, E.	Lecturer	Neuroradiology	University Health Network
Zalev, A.H.	Assistant Professor	Abdominal Imaging	St. Michael's Hospital
Zelovitzky, J.L.	Assistant Professor	Cardiothoracic Imaging	University Health Network

### **Cross Appointments**

Bronskill, M.J.	Professor	Medical Biophysics
Foster, S.	Professor	Medical Biophysics
Freedom R.	Professor	Pediatrics
Henkelman, R.M.	Professor	Medical Biophysics
Johnson, J.A.	Associate Professor	Obstetrics and Gynaecology
McLaughlin, P.R.	Professor	Medicine
Nosworthy, M.	Assistant Professor	Medical Biophysics
Noyek, A.M.	Professor	Otolaryngology
Pharoah, M.J.	Professor	Dentistry
Plewes, D.B.	Professor	Medical Biophysics
Reilly, R.	Associate Professor	Pharmacy
Tomlinson, G.	Assistant Professor	Biostatistics
Trachtenberg, J.	Professor	Surgery
Vanek, I.	Assistant Professor	Ophthalmology

### **Radiation Sciences Program (Joint Program with Michener Institute)**

Babiak, C.	Instructor
Cornacchione, P.	Instructor
Crowley, S.	Instructor
Goodin, L.	Instructor
Havil, D.	Instructor
King, D-M.	Instructor
Maynard, L.	Instructor
Murray, L.	Instructor
Rodrigues, G.	Instructor

Sharpe, W.	Instructor
Sinn, H.	Instructor
Souter, C.	Instructor
Topple, A.	Instructor
Watson, T.	Instructor
Wong, B.	Instructor

## **THE DEPARTMENT OF MEDICAL IMAGING AND THE UNIVERSITY OF TORONTO TEACHING HOSPITALS**

The academic programs in the Department of Medical Imaging are integrated with its five major teaching hospitals: the University Health Network (UHN), Mount Sinai Hospital (MSH), St. Michael's Hospital, Sunnybrook & Women's College Health Sciences Centre, and the Hospital for Sick Children. The medical imaging departments at UHN and MSH are consolidated into a single operational unit under the leadership of Dr. Patrice Bret. The Medical Imaging departments at St. Michael's Hospital, Sunnybrook & Women's College Health Sciences Centre, and the Hospital for Sick Children are led by Dr. Andrew Common, Dr. Alan Moody, and Dr. Paul Babyn.

### **University Health Network/Mount Sinai Hospital**

Recruitment remains a priority for the Department, both for technologists and for radiologists. Our largely international fellowship program continues to contribute a number of outstanding radiologists from outside Canada to our Faculty, which in turn increases the pool of Canadian radiologists. As part of the MOH initiatives around waiting lists, some funding has been made available to Medical Imaging to reduce the waiting lists in MRI. This has allowed to complete the 24/7 coverage on most of the units and resulted in a significant decrease of the waiting list. At the same time, reorganization of the CT modality has allowed to also reduce the waiting list to a point where it now meets the benchmark standards for almost every indication. A large number of our faculty members continue to have time protected for academic work. Their work is more fully described in the Research Director's report. Significant events and accomplishments include very major renovations at Toronto Western Hospital, which created a virtually brand new facility. This opened with redesigned space and new imaging equipment including a 3T MRI, new neuroangio equipment, and a gamma knife, providing a unique environment for the treatment of neurological disorders. PMH has a PET/CT scanner but access remains unavailable to most patients because funding is only available within a few supported clinical trials. This continues to be a handicap for Princess Margaret Hospital and to our Department – our recruitment efforts of a PET expert are severely hampered by lack of funding for PET studies.

### **Sunnybrook and Women's College Health Sciences Centre**

The Sunnybrook and Women's College Health Sciences Centre Medical Imaging Department is comprised of 6 divisions - Body Imaging, Neuroradiology, Cardiothoracic/VIR, Nuclear Medicine, Musculoskeletal and Breast Imaging, supporting major regional programmes including Oncology, Trauma, Burns and Stroke. The Department is research driven, encouraging hypothesis generated clinical research and collaboration with the adjacent department of Research Imaging. Access to state-of-the-art research equipment including 3T MRI, 1.5T MRI and PET-CT complement clinical twin speed MRI's (2), 3 CT scanners and fully equipped nuclear medicine, angiography and ultrasound departments. The Department is fully integrated with PACS and RIS systems. For further information regarding clinical or research imaging please contact [alan.moody@sw.ca](mailto:alan.moody@sw.ca).

## **St. Michael's Hospital**

The Medical Imaging Department at St. Michael's Hospital has undergone considerable remodeling in the past few years. A Siemens PACs system with integrated voice recognition technology has been installed, and electronic work-listing will soon render the department paperless, with markedly improved reporting efficiency. The annual tally of imaging examinations is over 250, 000, excluding a very busy cardiac catheterization service which performs over 4000 radiologist-interpreted procedures per year. Virtually all of the imaging equipment has been replaced, with three helical CT scanners (including two new 64-slice units), three new 1.5 Tesla MRI units, and three angio suites, including a bi-plane neuro interventional facility. An aggressive recruiting campaign of sub-specialist radiologists has brought full-time staffing levels to 18 which has allowed the department to better meet the needs of the University Residency and Fellowship Programs. St. Michael's is proud of its long-standing commitment to teaching and clinical excellence. The hospital has appointed a renowned Critical Care researcher as VP of Research, and there is renewed commitment to increasing the research profile of the hospital. A new state-of-the-art research building will soon be built. Other unique hospital attributes which are reflected in the Medical Imaging Department at St. Michael's are the Inner City Health Programme, and the Hereditary Hemorrhagic Telangiectasia Program. St. Michael's has recently been designated as a Centre of Excellence for Vascular Surgery, with a cooperative endovascular stent-graft program shared between Medical Imaging and Vascular Surgery. Our Neurointerventional Service has grown rapidly in the last few years, and will continue to do so as we expand our activities as a Regional Stroke Center. The Breast Imaging service has recently moved into a new CIBC Breast Centre on the same floor as the Medical Imaging Department. Further, St. Michael's is downtown Toronto's helipad-serviced trauma centre, and lithotripsy centre, and has outstanding clinical and research programs in renal disease, and in heart and vascular diseases, which are actively supported by the Medical Imaging Department.

## **Hospital for Sick Children**

The Hospital for Sick Children Department of Diagnostic Imaging provides full imaging service for all children up to the age of 18 years. We currently perform approximately 140,000 examinations per year. The department has 23 full-time and part-time staff, in all pediatric imaging subspecialties. The department has two 1.5T MR scanners, two CT scanners, (including one 8 slice CT), along with a dedicated Image Guided Therapy suite. This suite allows both Interventional radiology and minimally invasive surgical procedures to be combined, and consists of four rooms containing integrated CT fluoroscopy, a biplane unit, and two single plane fluoroscopic units with ultrasound units. The department has an active sonography service with eleven ultrasound units. There is an integrated PACS and RIS system providing image and report distribution throughout the department and the hospital. Research and sub-specialty training are active interests of the department with three imaging scientists and seventeen fellows in subspecialty training from across the world.

## RESEARCH GRANTS

Members of the Department of Medical Imaging (underlined) were investigators on the following grants, identified by the principal investigator, other investigators, project title, sponsor, total amount of grant, and start and end dates of the funding period.

Babyn P, Blanchette V, Feldman B, and Hedden D (Investigators). Magnetic resonance imaging (MRI) of Elbows, Knees and Ankles of Subjects enrolled in the Escalating Dose Primary Prophylaxis Study. Bayer, Healthcare Division. \$86,842.48. October 2003 – October 2005.

Banwell B (Principal Investigator), Shroff M (Radiologist for study). Neuropsychological and MRI characteristics of pediatric multiple sclerosis – Creation of MRI criteria for pediatric MS. CIHR. CAD 4.5 million. 2003 – 2008.

Bassett A (Principal Investigator), Mikulis DJ (Co-Investigator). Delineating a high risk phenotype in familial schizophrenia. Canadian Institutes of Health Research (CIHR). \$140,000.00/yr. April 2002-March 2007.

Bouffet E. (Principal Investigator), Cheng M. (Co-Investigator). A phase II study of vinblastine sulphate injection in children with recurrent or refractory low grade glioma. Ontario Cancer Care. \$25,000/year. 2005-2008.

Bukhanov K. Z-Tech breast cancer detection system using homologous electrical difference analysis (HEDA). Z-Tech (Canada) Inc. \$22,295.00. 2001-2005.

Cheng M. (Principal Investigator). The Chair's Startup Fund. Department of Medical Imaging, University of Toronto. \$5,000. 2005.

Cheyne D. (Principal Investigator). MEG Studies of Sensorimotor Rhythms in Humans. NSERC (Operating Grant). \$95,000/year. 2004-2009.

Chow E (Principal Investigator), Mikulis DJ (Co-Investigator). 22q11 Deletion Syndrome: Children at high risk for psychiatric disorders. Canadian Institutes of Health Research (CIHR). \$81,508/yr for 3 years. April 2005-March 2008.

Cohen G (Principal Investigator), Macgowan C (Co-Applicant). Left Ventricular Mass Regression Following Stentless and Stented Aortic Valve Replacement: Follow up of a Randomized Trial. Heart and Stroke Foundation (Grants-in-Aid). \$89,350. 2004/07 – 2006/06.

Connolly B, Swoboda N. Radiation Dose to Children in an Interventional Program. Research & Development: Dept of Medical Imaging, University of Toronto. \$8,000. April 1, 2004 – March 31, 2005.



Doria A.S. (principal investigator), Dick P. Comparative measurements of BOLD signal in experimental arthritis according to variations in the region-of-interest. 2004 – Medical Imaging Research and Development Award. \$8,000. July 1, 2004 – June 30, 2005.

Doria A. (Principal Investigator). Functional MR imaging assessment of therapeutic outcomes in experimental arthritis. 2004 – Chair’s Start-up Fund. \$5,000. October 13, 2004.

Doria A. (Principal Investigator). Pediatric Musculoskeletal Imaging. 2005 – Seed Grant Funding – Department of Medical Imaging - University of Toronto. \$35,000 / year – 3 year period. Jan 21, 2005.

Esdaile J (Principal Investigator), White LM, et al. Tooling up for OA: Measuring what matters. Canadian Institutes of Health Research (CIHR), and the Institute of Musculoskeletal Health and Arthritis (IMHA). \$1,500,000 (CIHR New Emerging Team Grant). 2003-2006.

Fox, AJ - Advisor to CIHR Judging Panel, Multi-Centre Trials, Aneurysm Treatment Research, winter 2005.

Fox, AJ - Director, Angiographic Core Lab for Cerecyte (aneurysm coiling) Trial, from fall 2004.

Fox, AJ - Grant reviewer, Heart and Stroke Foundation of Canada, Aneurysm Treatment Research, fall 2004.

Fox, AJ - Grant reviewer, CIHR, Aneurysm Treatment Research, fall 2004

Haider MA (Principal Investigator), Toi A, Sweet J, O’Malley M, Trachtenberg J (Co-Investigators). The utility of functional and morphologic MRI in the detection of prostate cancer for patients with elevated PSA and prior negative biopsy. PMH Foundation. \$30,000.00. April 2002 (on-going).

Haider MA (Principal Investigator), Langer D, Toi A, Menard C, Trachtenberg J (Co-Investigators). Advanced prostate imaging. Granting Agency: Dept. of Medical Imaging Research Program Grant, Faculty of Medicine, University of Toronto. \$70,000.00. 2005-2007.

Hill R (Principal Investigator), Bristow R, Fyles A, Hedley D, Milosevic M, Yeung I, Haider MA (Co-Investigators). Hypoxia in human tumors: clinical and experimental studies. Project 5 (Biomarkers and imaging studies of the tumour microenvironment: treatment response and new therapeutic targets in cervix and prostate cancer). Terry Fox Program Project Grant, National Cancer Institute of Canada. \$5,935,083.00 (2004-2008).

Hurtig MB, White LM, Marks PH (Principal Investigators), Buschmann M, Shirazi S, Dickey J, Weller I, Mohtadi NG (Collaborators). Risk factors that predict the progression of osteoarthritis after knee injury: A retrospective pilot study (Study 04-SRID-OA-02). Canadian Arthritis Network (CAN). \$132,000.00. 2004-2005.

Hurtig MB, White LM, Marks PH (Principal Investigators), Buschmann M, Shirazi S, Dickey J, Weller I, Mohtadi NG (Collaborators). Risk factors and indicators that predict the progression of osteoarthritis after knee injury. Canadian Institutes of Health Research (CIHR), and the Institute of Musculoskeletal Health and Arthritis (IMHA). \$1,500,000.00 (CIHR New Emerging Team NET Grant; Quality of Life Enhancement Competition 2004). 2004-2009.

Jewett MAS (Principal Investigator), Haider MA, Panzarella T, Evans A, Rendon R, Fleshner N, Klotz L, Nam R, Macgregor P, Gallie B, Chin J, Kachura J, Kapoor A, Siemens R (Co-Investigators). The natural history of small renal masses. Kidney Foundation of Canada. \$100,000.00. 2004-2006.

Jewett M (Principal Investigator), Chin J, Evans A, Fleshner N, Gallie B, Haider MA, Kachura J, Kapoor A, Klotz L, MacGregor P, Morash C, Nam R, Panzarella T, Rendon R, Siemens R (Co-Applicants). The natural history of small renal masses/Identification of prognostic factors for progression of early stage renal cell cancer. Canadian Urologic Oncology Group. \$50,000.00 per annum. July 2004-June 2006.

Jong RA - Screening Breast Ultrasound in High Risk Women Berg, W (PI) (Toronto Site Principle Investigator) Avon Foundation & National Institutes of Health 2004 – 2007 - (\$240,000 (US\$) for Toronto site

Kandel R (Principal Investigator), White LM, et al. Bioengineering of skeletal tissue. Canadian Institutes of Health Research (CIHR). \$1,000,000 (CIHR New Emerging Team Grant). 2002-2007.

Kapur S (Principal Investigator), Mikulis DJ (Co-Investigator). Schizophrenia, reward learning and reward prediction errors - A study using computational models and event related fMRI. Canadian Institutes of Health Research (CIHR). \$108,619.00. 2004-2006.

Kassner A, Mikulis DJ (Co-Principal Investigators). MRI in hyperacute stroke. Canadian Institutes of Health Research (CIHR). \$80,000/yr for 3 years. April 2005-June 2008.

Kim TK (Principal Investigator), Jang HJ (Co-Investigator). A phase III open label multicenter trial to compare the diagnostic accuracy of definity®-enhanced ultrasound imaging versus contrast enhanced CT for characterizing liver lesions. Bristol-Myers Squibb. \$50,000.00 USD. 2004-2005.

Koff D - Grant of \$1,200 from the Royal College for our “First Annual Practical Course in Digital Imaging and Teleradiology connectivity in the 21st century”. Course director. Toronto, April 10, 2005.

Lehman C (PI), Causier P. - MRI Screening of the Contralateral Breast ACRIN 6667. NIH (\$55,000 to our centre). Co-investigator (P.I.) 2003-2006

Leong WL (Principal Investigator), Kulkarni S, Boerner S, Done S, Macgregor P, Woodgett JR (Co-Investigators). The effects of anaesthetics on fine needle aspiration biopsy (FNAB)-based breast cancer gene profiling. Genome Canada. \$39,440.00. 2004.

Leong WL (Principal Investigator), Kulkarni S, Done S, Boerner S, Vallis K, McCready D, Woodgett J, Leighl N (Co-Investigators). Breast cancer gene profiling. Breast Cancer Clinical Research Program. Princess Margaret Hospital. \$400,000.00. 2005-2009.

Leong WL (Principal Investigator), Kulkarni S, Done S, Boerner S, Vallis K, McCready D, Woodgett J, Leighl N (Co-Investigators). Breast cancer gene profiling. Genome Canada Research Matching Fund. \$400,000.00. 2005-2009.

Macgowan C (Principal Investigator), S-J Yoo, MD (Co-Applicant). MRI Assessment of Pulmonary Hemodynamics within the Lungs. Canadian Institutes of Health Research (Operating Grant). \$212,279. 2004/10 – 2007/09

MacRae AR (Principal Investigator), Chitayat D, Chodirker BN, Holowaty PH, Knight GJ, Lockner CA, MacKenzie JJ, Palomaki G, Toi A, Van Caeseele PG (Co-Investigators). The SAFER study: second and first trimester evaluation of risk of fetal trisomies. Canadian Institutes of Health Research (CIHR).15/9/2002 competition. \$176,506.00 + equipment \$114,000.00. January 29, 2003(3 years).

Merchant N (Principal Investigator-TGH site). Ontario Consortium for Cardiac Imaging. Ontario Research and Development Challenge Fund. Funding includes ORDCF, Private Sector and Institution Component. \$1,886,700.00. 2001-2006.

Mikulis DJ (Co-Principal Investigator). The behavioral research and imaging network. Grant Support (BRAIN #01-MAR-0936). Ontario Research and Development Challenge Fund. \$95,000.00/yr. 2002-2007.

Mikulis D, Green R (Principal Investigators). Cognitive vs motor recovery after traumatic brain injury: Is there competition for limited neural resources. Agency: The Physician Services Incorporated Foundation (03-32). \$42,000.00 (2004); \$80,000.00 (2005).

Milosevic M (Principal Investigator), Haider MA, Dinniwell R, Warde P, Catton C, Bayley A, Haycocks T, Jaffray D, Jhaveri K, Chan P, Chung P (Co-Investigators). Magnetic resonance imaging with ultra-small super-paramagnetic iron oxide for pelvic lymph node target definition in the treatment of high-risk prostate cancer. Abbott-CARO Uro-Oncologic Radiation Award (ACURA). \$36,393.00. 2004.

Milosevic MF (Principal Investigator), Dinniwell R, Haider MA, et al (Co-Investigators). Magnetic resonance imaging using ultra-small superparamagnetic iron oxide for pelvic lymph node targeted definition in high risk prostate cancer. Canadian Prostate Cancer Research Initiative IDEA Grant, National Cancer Institute of Canada. \$36,069.00 (2004-2005).

Moody AR. - The Site, cause and outcome of complicated atherosclerotic plaque in the cardiovascular and neurovascular circulations. Pfizer \$300,000 2004-2007.

Nam RK (Principal Investigator), Narod S, Trachtenberg J, Klotz L, Fleshner N, Jewett M, Sugar L, Toi A, Diamandis E (Co-Investigators). Prospective evaluation of prostate biopsies for prostate cancer detection. National Cancer Institute of Canada. \$410,070.00. 2004-2007.

Paul N (Principal Investigator) Multidetector 64 slice CT coronary angiography in patients referred for cardiac surgery: correlation with coronary angiography. Granting Agency: Canadian Association of Radiologists. CHAR Award. \$6,000.00. April 2005.

Roberts H (Principal Investigator). International Early Lung Cancer Action Program. Lusi Wong Lung Cancer Early Detection Research Fund. Approximately \$2.5 million. 2003-2008.

Roberts H (Principal Investigator). IMI Lung Alert substudy to I-ELCAP. IMI Medical Innovations International Inc. \$530,000.00. 2003-2008.

Shroff MM, Taylor MJ (co-PIs). Translational Research Grant. Dept. of Medical Imaging, University of Toronto. \$35,000/year, January 2005 – December 2007.

Shroff M (Principal Investigator). Neuroplasticity in Pediatric Stroke. Department of Medical Imaging, University of Toronto. \$35,000. 2004 – 2005.

Shroff M (Principal Investigator). The Need for Contrast in Pediatric Head CT. Department of Medical Imaging, University of Toronto. \$8,000. 2003 – 2004.

Sung L (Principal Investigator), Hitzler J, Lange B, Aplenc R (Co-applicants), Traubici J (Radiologist for study), Beyene J (Statistician), Allen U (Infectious Diseases). Prospective cohort study of genetic variation and risk of infection in Canadian children with primary acute myeloid leukemia. NCIC Research Grant. 2005/2006: \$153,258, 2006/2007: \$148,658, 2007/2008: \$142,508.

Ward D (Principal Investigator), Josse R, Bukhanov K (Collaborators). A randomized feasibility study of letrozole in postmenopausal women at increased risk for development of breast cancer as evidenced by high breast density. Novartis. \$433,880.00. Summer 1999 (end date unknown).

Warner E (PI), Plewes, DB, Causer P (CI). - Surveillance magnetic resonance imaging and ultrasound for women at high risk for hereditary breast cancer. CBCRA (\$1,300,000) for 2004-2009. CBCRI (\$710,409) for 2001-2004.

Warner E (PI) Causer P, DeBoer G, Jong RA, Messner S, Narod S, Plewes D, Wong J, Wright F, Yaffe MJ (C-I) Surveillance Magnetic Resonance Imaging and Ultrasound for Women at High Risk for Hereditary Breast Cancer; Canadian Breast Cancer Research Alliance 2004 – 2009 (\$1,300,000)

Wright F (PI), Causer P. - Is Clinical Breast Examination, Mammography or Magnetic Resonance Imaging the Best Method for Assessing Residual Disease after Neo-Adjuvant therapy in Women with Locally Advanced Breast Cancer? CBCF (\$113,096) 2004-2007.

Wright G, Dick A, Moody AR, Merchant N. - Magnetic resonance for ischaemia. CIHR operating grant 127,606 pa 5 years April 2005.

Wright G (Principal Investigator), Merchant N (Co-Investigator). Magnetic resonance imaging for ischemic heart disease. Canadian Institutes of Health Research (CIHR). \$135,240.00 per year + equipment x 4 years (2003-2007).

## **PUBLICATIONS: PEER-REVIEWED PAPERS AND ABSTRACTS**

Agid R, Farb RI. Sympathetic mastoid effusion associated with transverse sinus thrombosis. *Eur Radiol* April 2005;15(4):755-758.

Agid R, Souza MP, Reintamm G, Armstrong D, Dirks P, terBrugge KG. The role of endovascular treatment for pediatric aneurysms. *Childs Nerv Syst* April 29, 2005. (Online)

Alkazaleh F, Geary M, Kingdom J, Kachura JR, Windrim R. Elective non-removal of the placenta and prophylactic uterine artery embolization postpartum as a diagnostic imaging approach for the management of placenta percreta: a case report. *J Obstet Gynaecol Can* August 2004;26(8):743-746.

Al-Kwif O, Kim JK, Stainsby J, Huan Y, Sussman MS, Farb RI, Wright GA. Pulsatile motion effects on 3D magnetic resonance angiography: implications for evaluating carotid artery stenosis. *Magn Reson Med* September 2004;52(3):605-611.

Ashley Robinson, Susan Blaser, Ants Toi, David Chitayat, Sarah Keating, Greg Ryan, Sandra Viero. MR Imaging of the Fetal Eyes: Examples of Abnormal Biometry and Development, with Ultrasonographic and Clinicopathologic Correlation. *Pediatric Radiology*. 2005; 35, S01: S53.

Aviv R, Benseler SM, Silverman ED, Hawkins C, Rayfel S, Tyrrell PN, DeVeber G, Tsang LM, Armstrong D, Laxer RM. Primary CNS vasculitis of childhood: Magnetic Resonance Imaging (MRI) and Magnetic Resonance Angiography (MRA) appearances and correlation. *Arthritis Rheum*, Jul 2005, 52 (7), 2159-67.

Aviv RI, O'Neill R, Patel M, Collqhoun I - Abciximab use in subarachnoid haemorrhage. *AJNR Am J Neuroradiol* 2005 26: 1744-1750.

Aviv RI, Casselman, J, Orbital Imaging-Anatomy - *Clinical Radiology* 2005;60:279-287.

Aviv RI, Miszkial K - Orbital imaging-Pathology - *Clinical Radiology* 2005;60:288-307.

Aziz D, Chait P, Kreichman F, Langer JC. Image-Guided Percutaneous Gastrostomy in Neonates with Esophageal Atresia. *Journal of Pediatric Surgery*. 2004 Nov;39(11):1648-50.

Babyn P, Cole W, Koplewitz B. Congenital Dislocation of the Patella. *APR*. 2005;184:1640-1646.

Babyn PS, Doria AS. Radiologic investigation of rheumatic diseases. *Pediatr Clin North Am* 2005 Apr; 52 (2): 373-411.

Babyn P, Doria A, Kilcoyne R, Lundin B, Ljung R, Miller S, Nuss R, Rivard GE, Pettersson H. Compatible scales for progressive and additive MRI assessment of haemophilic arthropathy. *Haemophilia*. 2005.11; 109-115.

Babyn P, Epelman M, Kellenberger C, Miller S. Fast STIR whole-body MR imaging in children. *Radiographics*. 2004 Sept – Oct. 24(5): 1317-1330.

Babyn P, Faingold R, Daneman A, Tomlinson G, Manson D, Mohanta A, Moore A, Hellmann J, Smith C, Gerstle T, Kim JH. Necrotizing Enterocolitis: Assessment of Bowel Viability with Color Doppler US. *Radiology*. 2005. 235:587-594.

Babyn P, Gahunia H, Massicotte P. Pulmonary thromboembolism in children. *Pediatr Radiol*. 2005. 35:258-274.

Babyn P, Gilday D, Khan M, Puetter R, Wesolowski C, Yahil A. Improved lesion detection from spatially adaptive, minimally complex, Pixion reconstruction of planar scintigraphic images. *Computerized Medical Imaging and Graphics*. 2005. 29:65-81.

Baerlocher MO, Rajan DK, Ing DJ, Rubin BB. Primary stenting of bilateral radiation-induced external iliac stenoses. *Journal of Vascular Surgery* November 2004;40(5):1028-1031.

Baerlocher MO, Asch MR, Hayeems EB. Current issues of interventional radiology in Canada: a national survey by the Canadian Interventional Radiology Association. *Can Assoc Radiol J* June 2005;56(3):129-139.

Barkovich AJ, Raybaud CA. Malformations of cortical development. *Neuroimaging Clin N Am*. 2004 Aug; 12(3):401-23.

Beck C, Krafchik B, Traubici J, Jacobson S. Mercury intoxication: it still exists. *Pediatr Dermatol* May-Jun 2004;21:254-259.

Beecroft JR, Rajan DK, Clark TWI, Robinette MA, Stavropoulos SW. Transplant renal artery stenosis: Outcome following percutaneous intervention. *J Vasc Interv Radiol* December 2004;15(12):1407-1413.

Bleakney RR, White LM. Imaging of the achilles tendon. *Foot and Ankle Clinics* June 2005; 10(2):239-254.

Benjaminov O, Atri M. - Sonography of the abnormal fallopian tube. *AJR Am J Roentgenol*. 2004 Sep;183:737-742.

Benseler S M, deVeber G A, Hawkins C, Tyrrell PN, Aviv R I, Armstrong D, Laxer RM, Silverman E. - Angiography negative primary CNS vasculitis: A newly recognized inflammatory central nervous system disease *Arthritis Rheum* 2005;52:2159-67.

Bhargava P, Zhuang H, Kumar R, Charron M, Alavi A. Iatrogenic Artifacts on Whole body F18-FDG PET Imaging. *Clin Nucl Med*. 2004 July;29(7):429-439.

Bhargava P, Charron M, Beauchemin D. Asymmetric Lower Limb Muscle Activity on a Gallium Scan. *Clin Nucl Med*. 2005 May;30(5):367-368.

Bitar R, Gladstone D, Sahlas D, Moody AR - MR angiography of subclavian steal syndrome: pitfalls and solutions. *AJR Am J Roentgenol.* 2004 Dec;183(6):1840-1.

Bluemke DA, Gatsonis CA, Chen MH, DeAngelis GA, DeBruhl N, Harms S, Geywang-Kobrunner SH, Hylton N, Kuhl CK, Lehman C, Pisano ED, Causer P, Schnitt SJ, Smazal SF, Stelling CB, Weatherall PT, Schnall MD. - Magnetic resonance imaging of the breast prior to biopsy. *JAMA* 2004; 292(22):2735-2742. (C)

Brouwer PA, Souza MPS, Agid R, terBrugge K. A five-vessel aortic arch with an anomalous origin of both vertebral arteries and an aberrant right subclavian artery. *Interventional Neuroradiology* December 2004;10:309-314.

Byun JH, Kim TK, Lee CW, Lee JK, Kim AY, Kim PN, Ha HK, Lee MG. Arteriportal shunt: prevalence in small hemangiomas versus that in hepatocellular carcinomas 3 cm or smaller at two-phase helical CT. *Radiology* 2004;232:354-360.

Campisi P, James A, Hayward L, Blaser S, Papsin B. Cochlear implant positioning in children: a survey of patient satisfaction. *Int J Pediatr Otorhinolaryngol.* 2004 Oct;68(10):1289-93.

Chan RP, David E. Reperfusion of Splanchnic Artery Aneurysm Following Transcatheter Embolization: Treatment with Percutaneous Thrombin Injection, *Cardiovascular Intervent Radiol* 2004 May –June; 27 (3): 264-267.

Chan RP, Common AA. Stent graft repair of femoral pseudoaneurysm/AV fistula using a retrograde popliteal approach. *Cardiovasc Intervent Radiol* 2004 September-October; 27(5): 516-519.

Cheng G, Soboleski D, Daneman A, Poenaru D, Hurlbutt D. Sonographic pitfalls in the diagnosis of enteric duplication cysts. *AJR.* 2005 February ;184(2):521-525.

Cheng HLM, Chen J, Babyn PS, Farhat WA. Dynamic Gd-DTPA enhanced MRI as a surrogate marker of angiogenesis in tissue-engineered bladder constructs: a feasibility study in rabbits. *JMRI* April 2005; 21(4): 415-423.

Cho JY, Kim KW, Lee YH, Toi A. Measurement of nuchal skin fold thickness in the second trimester: Influence of imaging angle and fetal presentation. *Ultrasound Obstet Gynecol* March 2005; 25(3):253-257.

Cho JY, Lee YH, Toi A, MacDonald B. Prenatal diagnosis of horseshoe kidney by measurement of the renal pelvic angle. *Ultrasound Obstet Gynecol* June 2005;25(6):554-558.

Couwenhovena M, Sehnerta W, Wanga X, Dupina M, Wandtkeb J, Donc S, Krausc R, Paul N, Haline N, Sarno R. Observer study of a noise suppression algorithm for computed radiography images. *Proceedings of SPIE Medical Imaging 2005: Image Perception, Observer Performance and Technology Assessment* 2005;5749:318-327.



Crawley AP, Jurkiewicz MT, Yim A, Heyn S, Verrier MC, Fehlings MG, Mikulis DJ. Absence of localized grey matter volume changes in the motor cortex following spinal cord injury. *Brain Research* November 2004;1028:(1)19-25.

Crean A, Merchant N. Role of cardiac magnetic resonance imaging in identification of amyloid cardiomyopathy. *Indian Heart J* November-December 2004;56(6):683-686. (Letters to the Editor)

Crean A, Provost Y, Paul N, Merchant N. Simultaneous occurrence of two different cardiac tumours in an 84 year-old woman characterized by cardiovascular magnetic resonance. *J Cardiovasc Magn Reson* June 2005;7(2):517-519.

Crystal P, Zelinger J, Crystal E. Breast arterial calcifications as a cardiovascular risk marker in women. *Expert Rev Cardiovasc Ther* September 2004; 2(5):753-760.

Crystal P, Shaco-Levy R. Concentric rings within a breast mass on sonography: lamellated keratin in an epidermal inclusion cyst. *Am J Roentgenol* March 2005;184(3 Suppl):S47-48.

Crystal P, Koretz M, Shcharynsky S, Makarov V, Strano S. The accuracy of sonographically guided 14-gauge core-needle biopsy: results of 715 consecutive breast biopsies with at least two-year follow-up of benign lesions. *Journal of Clinical Ultrasound* 2005;33:47-52.

Crystal P, Bukhanov K. Sonographic findings of palpable isoechoic breast fat necrosis. Look for skin integrity. *J Ultrasound Med* 2005;24(1):105-107. (Case Report)

Daneman A, Navarro O. Intussusception: the debate endures. *Pediatr Radiol* January 2005; 35:95-96.

Das P, Grant R, Malkin D, Lee KH, Ngan B, MacDonald CE, Carcao M. Lymphomatous involvement of the heart in children: Two cases and a review of the literature. *J Pediatr Hematol Oncol*. 2004 December;26:852-854.

Daya H, Lo S, Papsin BC, Zachariasova A, Murray H, Pirie J, Laughlin S, Blaser S. Retropharyngeal and parapharyngeal infections in children: the Toronto experience. *Int J Pediatr Otorhinolaryngol*. 2005 Jan;69(1):81-6.

Davis KD, Pope GE, Crawley AP, Mikulis DJ. Perceptual illusion of “paradoxical heat” engages in insular cortex. *Journal of Neurophysiology* August 2004;92(2):1248-1251.

Davis AM, Damani M, White LM, Wunder JS, Griffin AM, Bell RS. Periprosthetic bone remodeling around a prosthesis for distal femoral tumors: Longitudinal follow-up. *J Arthroplasty* 2005;20(2):219-224.

deAndrade DO, Dravet C, Raybaud C, Broglin D, Laguitton V, Girard N. An unusual case of neurocutaneous melanosis. *Epileptic Disord*. 2004 Sep; 6(3): 145-52.

Dennis M, Edelstein K, Copeland K, Frederick J, Francis DJ, Hetherington R, Blaser S, Kramer LA, Drake JM, Brandt ME, Fletcher JM. Covert orienting to exogenous and endogenous cues in children with spina bifida. *Neuropsychologia*. 2005;43(6):976-87. Epub 2004 Dec 8.

Dennis M, Edelstein K, Hetherington R, Copeland K, Frederick J, Blaser S, Kramer LA, Drake JM, Brandt M, Fletcher JM. Neurobiology of perceptual and motor timing in children with spina bifida in relation to cerebellar volume. *Brain*. 2004 Jun;127(Pt 6):1292-301. Epub 2004 Apr 6.

Desal HA, Lee SK, Kim BS, Raoul S, Tymianski M, terBrugge K. Multiple de novo vascular malformations in relation to diffuse venous occlusive disease: a case report. *Neuroradiology* January 2005;47(1):38-42.

Djaiani G, Fedorko L, Borger M, Mikulis D, Carroll J, Cheng D, Karkouti K, Beattie S, Karski J. Mild to moderate atheromatous disease of the thoracic aorta and new ischemic brain lesions after conventional coronary artery bypass graft surgery. *Stroke* September 2004;35(9):e356-358.

Doan AP, Lee SK, Chaloupka J, Nerad JA, Lee AG. Subperiosteal hematoma of the orbit following an aneurysm coiling procedure. *Am J Ophthalmol* 2004;138(4):680-682.

Doria AS. Meta-analysis and structured literature review in radiology. *Acad Radiol* 2005 Apr; 12 (4): 399-408.

Doria A, Lundin B, Kilcoyne RF, Babyn P, Miller S, Nuss R, Rivard G, Stephens D, Petterson H. Reliability of progressive and additive MRI scoring systems for evaluation of haemophilic arthropathy in children: Expert MRI Working Group of the International Prophylaxis Study Group. *Haemophilia*. 2005.11:245-253.

Dos Santos Souza MP, Agid R, Willinsky RA, Cusimano M, Montanera W, Wallace MC, terBrugge KG, Marotta TR. Microstent-assisted coiling for wide-necked intracranial aneurysms. *Can J Neurol Sci* February 2005; 32(1):71-81.

Downar J, Williams WG, MacDonald C, Wigle ED, McCrindle BW. Outcomes after “unroofing” of a myocardial bridge of the left anterior descending coronary artery in children with hypertrophic cardiomyopathy. *Pediatr Cardiol*. 2004 July-Aug;25: 390-393.

DuBois SG, Messina J, Maris JM, Huberty J, Glidden DV, Veatch J, Charron M, Hawkins R, Matthey KK. Hematologic Toxicity of High Dose 131I-Metaiodobenzylguanidine Therapy for Advanced Neuroblastoma. *J Clin Oncol*. 2005 June;22:2452-2460.

Faingold R, Daneman A, Tomlinson G, Babyn PS, Manson DE, Mohanta A, Moore AM, Hellmann J, Smith C, Gerstle JT, Kim JH. Necrotizing enterocolitis: assessment of bowel viability with color doppler US. *Radiology*. 2005 May ;235(2):587-594.

Faughnan ME, Thabet A, Mei-Zahav M, Colombo M, MacLusky I, Hyland RH, Pugash RA, Chait P, Henderson K, White Jr. RI. Pulmonary Arteriovenous Malformations in Children: Outcomes of Transcatheter Embolotherapy Journal of Pediatrics. 2004 Dec;145:826-831.

Fanning N, Laffan E, Shroff M. Serial diffusion-weighted magnetic resonance imaging correlated with clinical course and treatment response in children with intracranial pus collections: accepted for publication in Pediatric Radiology, June 2005.

Feldman BM, Babyn PS, Doria AS, Heijnen L, Jacobson J, Kilcoyne R, Lundin B, Manco-Johnson M, McLimont M, Petrini P, Pettersson H, Blanchette VS. Proceedings of the International Prophylaxis Study Group (IPSG) meeting. November 2003. Montreal, PQ, Canada. Haemophilia 2005 Jan; 11 (1): 58-63.

Fithian DC, Paxton EW, Stone ML, Silva P, Davis DK, Elias DA, White LM. Epidemiology and natural history of acute patellar dislocation. Am J Sports Med 2004;32(5):1114-1121.

Fong KW, Ghai S, Toi A, Blaser S, Winsor EJ, Chitayat D. Prenatal ultrasound findings of lissencephaly associated with Miller-Dieker syndrome and comparison with pre- and postnatal magnetic resonance imaging. Ultrasound Obstet Gynecol December 2004;24(7):716-723.

Fong KW, Shin V, Toi A. Patient factors affecting the quality of routine second trimester obstetrical ultrasound images. Ultrasound Obstet Gynecol 2004;24:14.

Fong KW, Ghai S, Toi A, Blaser S, Winsor EJ, Chitayat D. Prenatal ultrasound findings of lissencephaly associated with Miller-Dieker syndrome and comparison with pre- and postnatal magnetic resonance imaging. Ultrasound Obstet Gynecol. 2004 Dec;24(7):716-23.

Fraser D, Moody A, Martel A, Morgan P. Re-evaluation of iliac compression syndrome using magnetic resonance imaging in patients with acute deep venous thromboses. J Vasc Surg. 2004 Oct. 40(4): 604-11

Fraser D, Moody A, Martel A, Morgan P. Iliac compression syndrome and recanalization of femoropopliteal and iliac venous thrombosis: A prospective study with magnetic resonance venography. J Vasc Surg. 2004 Oct;40(4):612-9.

Freedom RM, Yoo SJ, Perrin D. The biological "scrabble" of pulmonary arteriovenous malformations: considerations in the setting of cavopulmonary surgery. Cardiol Young. 2004 August;14:417-437.

Freedom RM, Yoo SJ, Russell J, Perrin D, Williams WG. Designing therapeutic strategies for patients with a dominant left ventricle, discordant ventriculo-arterial connections, and unobstructed flow of blood to the lungs. Cardiol Young. 2004 December;14:630-653.

Freedom RM, Yoo SJ, Russell J, Perrin D, Williams WG. Thoughts about fixed subaortic stenosis in man and dog. Cardiol Young. 2005 April; 15:186-205.

Friedman JN, Ahmed S, Connolly B, Chait P, Mahant S. Complications associated with image-guided gastrostomy and gastrojejunostomy tubes in children. *Pediatrics*. 2004 August; 114(2):458-61

Gallix BP, Bret PM, Atri M, Lecesne R, Reinhold C. - Comparison of qualitative and quantitative measurements on unenhanced T1-weighted fat saturation MR images in predicting pancreatic pathology. *J Magn Reson Imaging*. 2005 May;21(5):583-589.

Gamulka B, Mendoza C, Connolly B. Evaluation of a unique, nurse-inserted, peripherally inserted central catheter program. *Pediatrics*. 2005 Jun; 115(6):1602-6

Ganesh A, Dondey J, Forte V, Drake JM, Gentili F, Armstrong D, Phillips J, Buncic JR. Orbital Involvement by Nasopharyngeal Angiofibroma. *Journal of Pediatric Ophthalmology & Strabismus*, March/April 2004/Vol 41, No. 2.

Georgalas C, Thomas K, Owens C, Abramovitch S, Lack G. Medical treatment for rhinosinusitis associated with adenoidal hypertrophy in children - an evaluation of clinical response and changes on MRI. Accepted 2005, *Annals of Otology, Rhinology and Laryngology*

Ghai S, Bukhanov K. Eccrine acrospiroma of breast: mammographic and ultrasound findings - a case study. *Clinical Radiology* 2004; 59(12):1142-1144. (Case Report)

Ghai S, Dill-Macky M, Wilson SR, Haider M. Fluid-fluid levels in cavernous hemangiomas of the liver: Baffled? *Am J Roentgenol* March 2005;184(3 Suppl):S82-S85.

Ghert MA, Abudu A, Driver N, Davis AM, Griffin AM, Pearce D, White LM, O'Sullivan B, Catton CN, Bell RS, Wunder JS. The indications for and the prognostic significance of amputation as the primary surgical procedure for localized soft tissue sarcoma of the extremity. *Annals of Surgical Oncology* 2005; 12(1):10-17.

Giede C, Toi A, Chapman W, Rosen B. The use of transrectal ultrasound to biopsy pelvic masses in women. *Gynecol Oncol* December 2004;95(3):552-556.

Glanc, P., D. Chitayat, S. Unger - Fetal Musculoskeletal Ultrasound. Chapter in textbook: *DIAGNOSTIC ULTRASOUND*; editors Carole M. Rumack MD, Stephanie Wilson, MD, J. William Charboneau, MD; 3rd edition

Haider MA (PA), Milosevic M, Fyles A, et al. Assessment of the tumor microenvironment in cervix cancer using dynamic contrast enhanced CT, interstitial fluid pressure and oxygen measurements. *Int J Radiat Oncol Biol Phys* 2005;62:1100-1107.

Haidar S, Drake J, Armstrong D. Cervical ankylosis following Grisel's syndrome in a 14-year-old boy with infectious mononucleosis. *Pediatr Radiol* (2005) 35:330-333.

Haider S, Ortiz-Neira C, Shroff MM, Gilday D, Blaser S. Intracranial involvement in extramedullary hematopoiesis; case report and review of the literature. *Pediatric Radiology*. 2005 Jun.;35(6):630-634.

Haider S, Thomas K, Miller S. Popliteal artery entrapment syndrome in a young girl. *Pediatric Radiology* 2005 35(4) 440-443

Hanbidge AE, Buckler PM, O'Malley ME, Wilson SR. Imaging evaluation for acute pain in the right upper quadrant. *RadioGraphics* July-August 2004;24:1117-1135. (online: 10.1148/rg.244035149)

Hartikka H, Makitie O, Mannikko M, Doria AS, Daneman A, Cole WG, Ala-Kokko L, Sochett EB. Heterozygous mutations in the LDL receptor-related protein 5 (LRP5) gene are associated with primary osteoporosis in children. *J Bone Miner Res*. 2005 May ;20(5):783-789.

Ho CS, Voss D. Self-expandable metallic biliary stents with permanent access. *Am J Roentgenol* 2005;184:410-414.

Holowka S, Otsubo H, Iida K, Pang E, Sharma R, Hunjan A, Xiang J, Snead OC III, Chuang N, Chuang SH, Rutka JT. Three dimensionally reconstructed magnetic source imaging and neuronavigation in pediatric epilepsy. Technical Note. *Neurosurgery* 2004;55:E1244-1248.

Hui GC, Amaral J, Stephens D, Atenafu E, John P, Temple M, Chait P, Connolly B. Gas distribution in intraabdominal and pelvic abscesses on CT is associated with drainability. *AJR, Am J Roentgenol*. 2005 Mar;184(3):915-9.

Hui GC, Gerstle JT, Weinstein M, Connolly B. Original Case Report: Small-bowel intussusception around a gastrojejunostomy tube resulting in ischemic necrosis of the intestine. *Pediatric Radiology*. 2004 Nov; 34(11):916-918.

Hyde, DE, Fox AJ, Gulka I et al. - Carotid Artery Stenosis Measurement: Comparison of 3D Computed Rotational Angiography and Conventional Digital Subtraction Angiography. *Stroke* 2004; 35:2776-2781.

Iida K, Otsubo H, Matsumoto Y, Ochi A, Oishi M, Holowka S, Pang E, Elliott I, Weiss SK, Chuang SH, OC Snead III, Rutka JT. Characterizing Magnetic Spike Sources with Magnetoencephalography-guided Neuronavigation in Pediatric Epilepsy Surgery. *Journal of Neurosurgery (Pediatrics 2)* 2005;102:187-196.

Iida K, Otsubo H, Mohamed I, Okuda C, Ochi A, Weiss SK, Chuang SH, Snead OC III. Characterizing magnetoencephalographic spike sources in children with tuberous sclerosis complex. *Epilepsia* 2005 (in press).

Itier RJ, Taylor MJ, Lobaugh NJ. Spatiotemporal analysis of event-related potentials to upright, inverted, and contrast-reversed faces: Effects on encoding and recognition. *Psychophysiology* July 2004; (41):643-653.

Itier RJ, Taylor MJ. Effects of learning and configural changes on the development of face recognition processes. *Developmental Science* September 2004; 7(4):469-487.

James T. Rutka. Characterizing magnetic spike sources by using magneto-encephalography-guided neuronavigation in epilepsy surgery in pediatric patients. *J Neurosurg (Pediatrics)* 2005; 102:187-196, March 2005.

Jaskolka JD, Asch MR, Kachura JR, Ho CS, Ossip M, Wong F, Sherman M, Grant DR, Greig PD, Gallinger S. Needle tract seeding after radiofrequency ablation of hepatic tumors. *J Vasc Interv Radiol* April 2005;16(4):485-491.

Jaskolka J, Chan RP, Wu L, Faughan ME. Imaging of hereditary hemorrhagic Telangiectasia. *AJR* July 2004; 183:307-314.

Javadpour M, Jain H, Wallace MC, Willinsky RA, terBrugge KG, Tymianski M. Analysis of cost related to clinical and angiographic outcomes of aneurysm patients enrolled in the international subarachnoid aneurysm trial in a North American setting. *Neurosurgery* May 2005;56(5):886-894.

Johnson BW, Muthukumaraswamy S, Huatus MJ, Gaetz W, Cheyne D. Neuromagnetic responses associated with perceptual segregation of pitch. *Neurology and Clinical Neurophysiology* 2004; 33:1-4.

Katz SL, Das P, Ngan BY, Manson D, Pappo AS, Swezey NB, Solomon MP. Remote Intrapulmonary Spread of Recurrent Respiratory Papillomatosis with Malignant Transformation. *Pediatr Pulmonol.* 2005 February;39:185-188.

Kellenberger CJ, Miller SF, Khan M, Gilday DL, Weitzman S, Babyn PS. Initial experience with FSE STIR whole-body MR imaging for staging lymphoma in children. *Eur radio.* 2004 Oct;14(10):1829-41.

Kelly J, Rudd A, Lewis RR, Coshall C, Moody A, Hunt BJ; - Venous thromboembolism after acute ischemic stroke: a prospective study using magnetic resonance direct thrombus imaging. *Stroke.* 2004 Oct;35(10):2320-5. Epub 2004 Aug 19.

Kelly J, Rudd A, Lewis RR, Coshall C, Palmar K, Moody A, Hunt BJ. - Screening for proximal deep vein thrombosis after acute ischemic stroke: a prospective study using clinical factors and plasma D-dimers. *J Thromb Haemost.* 2004 Aug;2(8):1321-6

Khan J, Charron M, Hickeson M, Accorsi R, Qureshi S. Canning D. Supranormal Renal Function In Unilateral Hydronephrotic Kidney Can Be Avoided. *Clin Nucl Med.* 2004 July;29(7):410-414.

Khanani MF, Hawkins C, Shroff M, Dirks P, Capra M, Burger PC, Bouffet E. Pilomyxoid astrocytoma in a patient with neurofibromatosis. *Pediatric Blood Cancer.* 2005 March. ( E-pub ahead of print).

Kim BS, Kim TK, Kim JS, Lee MG, Kim JH, Kim KW, Sung KB, Kim PN, Ha HK, Lee SG, Kang W. Hepatic venous congestion after living donor liver transplantation with right lobe graft: Two-phase CT findings. *Radiology* 2004;232(1):173-180.

Kim KW, Ha HK, Kim AY, Kim TK, Kim JS, Yu CS, Park SW, Park MS, Kim HJ, Kim PN, Kim JC, Lee MG. Primary malignant melanoma of the rectum: CT findings in eight patients. *Radiology*. 2004;232(1):181-186.

Kim C, Crago R, Chan V, Simons ME. Thyroid cyst puncture during cannulation of the internal jugular vein. *Canadian Journal of Anaesthesia* June 2005;52(6):655-656.

Kim RD, Sakamoto S, Haider MA (CPA), et al. Role of magnetic resonance cholangiography in assessing biliary anatomy in right lobe living donors. *Transplantation* 2005;79:1417-1421.

Kim HJ, Kim KW, Kim AY, Kim TK, Byun JH, Won HJ, Shin YM, Kim PN, Ha HK, Lee SG, Lee MG. Hepatic artery pseudoaneurysms in adult living-donor liver transplantation: efficacy of CT and Doppler sonography. *Am J Roentgenol* 2005;184:1549-1555.

Kim HJ, Kim AY, Kim TK, Byun JH, Won HJ, Kim KW, Shin YM, Kim PN, Ha HK, Lee MG. Transient hepatic attenuation differences in focal hepatic lesions: dynamic CT features. *Am J Roentgenol* 2005;184:83-90.

Kirpalani A, Khalili K, Lee S, Haider MA. Renal colic: comparison of use and outcomes of unenhanced helical CT for emergency investigation in 1998 and 2002. *Radiology* 2005;236(2):554-558.

Koji Iida,, Hiroshi Otsubo, Yuuri Matsumoto, Ayako Ochi, Makoto Oishi, Stephanie Holowka, Elizabeth Pang, Irene Elliott, Shelly K. Weiss, Chuang SH, Carter Snead III, Muthukumaraswamy S, Johnson BW, Gaetz W, Cheyne D. Modulation of neuromagnetic oscillatory activity during the observation of oro-facial movements. *Neurology and Clinical Neurophysiology* 2004; 2:1-4.

Konen E, Merchant N, Gutierrez C, Provost Y, Mickleborough L, Paul N, Butany J. True versus false left ventricular aneurysm: differentiation with MR Imaging - initial experience. *Radiology* 2005;236(1):65-70.

Kulkarni S, Ibach D. Impact of contrast enhanced MR (CE-MR) of the breast in the management of pregnancy associated breast cancer. Our experience. *Ultrasound in Obstetrics and Gynecology* September 2004;24:269-372.

Lai CW, Agid R, van den Berg R, terBrugge K. Cerebral arteriovenous fistulas induced by dural arteriovenous shunts. *Am J Neuroradiol* May 2005;26(5):1259-1262.

Ling JCM, Agid R, Nakano S, Souza MPS, Reintamm G, terBrugge KG, KimTK. Metachronous multiplicity of spinal cord arteriovenous fistula and spinal dural AVF in a patient with hereditary haemorrhagic telangiectasia. *Interventional Neuroradiology* March 2005;11(1):79-82.

Littrell LA, Wenger DE, Wold LE, Bertoni F, Unni KK, White LM, Kandel R, Sundaram M. Radiographic, CT, and MR imaging features of dedifferentiated chondrosarcomas: A retrospective review of 174 De Novo cases. *Radiographics* 2004;24(5):1397-1409.

Lundin B, Babyn PS, Doria AS, Kilcoyne R, Ljung R, Miller S, Nuss R, Rivard G, Pettersson H. Compatible scales for progressive and additive magnetic resonance imaging assessments of haemophilic arthropathy. *Haemophilia* 2005 Mar; 11 (2): 109-115

Macdonald DB, Haider MA (SRA), Khalili K, Kim TK, O'Malley M, Greig PD, et al. Relationship between vascular and biliary anatomy in living liver donors. *Am J Roentgenol* 2005;185(1):247-252.

Macgowan CK, Kellenberger CJ, Detsky JS, Roman K, Yoo S-J. Real-time magnetic resonance velocimetry: an in-vivo evaluation. *JMRI* March 2005; 21:297-304.

Macgowan CK, Kellenberger CJ, Detsky JS, Roman K, Yoo SJ. Real-time Fourier velocity encoding: an in vivo evaluation. *Magn Reson Imaging*. 2005 March;21:297-304.

Makitie AA, Reis PP, Irish J, Zhang T, Chin SF, Chen X, Marriott C, Keller A, Perez-Ordenez B, Kamel Reid S, Siu LL. Correlation of Epstein-Barr virus DNA in cell-free plasma, functional imaging and clinical course in locally advanced nasopharyngeal cancer: A pilot study. *Head and Neck* September 2004;26(9):815-822.

Makitie O, Doria AS, Henriques F, Cole WG, Compeyrot S, Silverman E, Laxer R, Daneman A, Sochett EB. Radiographic vertebral morphology in the diagnosis of pediatric osteoporosis. *J Pediatr*. 2005 March;146(3):395-401.

Martin AJ, Saloner DA, Roberts TP, Roberts H, Weber OM, Dillon W, Cullen S, Halbach V, Dowd CF, Higashida RT. Carotid stent delivery in an XMR suite: immediate assessment of the physiologic impact of extracranial revascularization. *Am J Neuroradiol* March 2005;26(3):531-537.

McAuliffe F, Fong KW, Toi A, Chitayat D, Keating S, Johnson J. Ultrasound detection of fetal anomalies in the first trimester in conjunction with nuchal translucency screening: a feasibility study. *Ultrasound Obstet Gynecol* 2004;24:14.

McAuliffe F, Fong KW, Toi A, Chitayat D, Keating S, Johnson J. Ultrasound detection of fetal anomalies in the first trimester in conjunction with nuchal translucency screening: a feasibility study. *Am J Obstet Gynecol* 2005;191(6):S175.

McGibney C, Steenbakkers RJHM, Duppen JC, Holmberg O, Belderbos JSA, Paul N, Carey B, VanHerck M, Armstrong JG, Bartelink H. Inter and intra physician variation in target delineation for high precision therapy in non-small cell lung cancer: Impact of intravenous contrast. *Radiotherapy and Oncology* 2004;73(1):354.



McKevitt FM, Randall MS, Cleveland TJ, Gaines PA, Tan KT, Venables GS. The benefits of combined anti-platelet treatment in carotid artery stenting. *Eur J Vasc Endovasc Surg* May 2005;29:522-527.

Mease PJ, Kivitz AJ, Burch FX, Siegel EL, Cohen SB, Ory P, Salonen D, Rubenstein J, Sharp JT, Tsuji W. Etanercept treatment of psoriatic arthritis: Safety, efficacy, and effect on disease progression. *Arthritis Rheum* July 2004;50(7):2264-72.

Metser U, Haider MA (SRA), Dill-Macky M, Atri M, Lockwood G, Minden M. Fungal liver infection in immunocompromised patients: depiction with multiphasic contrast-enhanced helical CT. *Radiology* 2005;235(1):97-105.

Mickleborough LL, Merchant N, Ivanov J, Rao V, Carson S. Left ventricular reconstruction: Early and late results. *J Thorac Cardiovasc Surg* July 2004;128(1):21-26.

Mikulis DJ (SRA), Krolczyk G, Desal H, Logan W, deVeber GA, Dirks P, Tymianski , Crawley A, Vesely A, Kassner A, Preiss D, Somoyi R, Fisher J. Pre and post-operative mapping of cerebrovascular reactivity in Moyamoya Disease using BOLD MRI. *J Neurosurg* 2005;103:347-355.

Miller RC, McIlroy WE, Mikulis DJ, Jurkiewicz, Opovic MR, Verrier MC. Neuromuscular restorative therapy: A therapeutic use for functional electrical stimulation (FES) for chronic spinal cord injury (SCI). *Journal of Spinal Cord Medicine* 2004;27(2):184.

More B, Chandran H, Pimpalwar A, John P. Traumatic intra-renal pseudoaneurysm in children. *Pediatr Surg Int* (2004) 20(9):729-30.

Moulding FJ, Roach SC, Hanbidge A. Thrombosed pelvic collateral veins resulting from anomalous inferior vena cava: A mimicker of acute appendicitis. *Am J Roentgenol* 2005;184:703-704.

Nam RK, Toi A, Trachtenberg J, Jewett MAS, Klotz L, Fleshner N, Bagnell PS, Sweet J, Sugar L, Narod SA. Variation in patterns of practice in diagnosing screen-detected prostate cancer. *BJU International* December 2004;94(9):1239-1244.

Navarro OM, Daneman A, Miller SF. Contrast enema depiction of small-bowel volvulus in complicated neonatal bowel obstruction. *Pediatr Radiol*. 2004 December;34(12):1020-1023.

Navarro OM, Daneman A. RE: Intussusception due to pathologic lead points. *Australas Radiol*. 2005 February;49(1):88.

Nield LE, Qi X-L, Valsangiacomo ER, Macgowan CK, Wright GA, Hornberger LK, Yoo S-J. In-vivo MRI measurement of blood oxygen saturation in children with congenital heart disease. *Pediatric Radiology* February 2005; 35(2):179-185.

Nield LE, Qi XL, Valsangiacomo ER, Macgowan CK, Wright GA, Hornberger LK, Yoo SJ. In vivo MRI measurement of blood oxygen saturation in children with congenital heart disease. *Pediatr Radiol* 2005 February; 35:179-185.

Oakden WK, Moore AM, Blaser S, Noseworthy MD. 1H MR spectroscopic characteristics of kernicterus: a possible metabolic signature. *AJNR Am J Neuroradiol*. 2005 Jun-Jul;26(6):1571-4.

Otsubo H, Iida K, Oishi M, Okuda C, Ochi A, Pang E, Weiss SK, Rutka JT, Chuang SH, Snead OC, III. Neurophysiologic Findings of Neuronal Migration Disorders: Intrinsic Epileptogenicity of Focal Cortical Dysplasia on Electroencephalography, Electrocorticography, and Magnetoencephalography. *J child neurol* 2005;20:357-363.

Park MS, Kim KW, Yu JS, Kim MJ, Lim JS, Cho ES, Yoon DS, Kim TK, Lee SI, Lee JD, Lee WJ, Ha HK, Lee JT, Yoo HS. Early biliary complications of laparoscopic cholecystectomy: evaluation on T2-weighted MR cholangiography in conjunction with mangafodipir trisodium-enhanced 3D T1-weighted MR cholangiography. *Am J Roentgenol* 2004;183:1559-1566.

Park DH, Kim MH, Lee SS, Lee SK, Kim KP, Han JM, Kim SY, Song MH, Seo DW, Kim AY, Kim TK, Min YI. Accuracy of magnetic resonance cholangiopancreatography for locating hepatolithiasis and detecting accompanying biliary strictures. *Endoscopy* 2004;36:987-992.

Park MS, Kim TK, Kim KW, Park SW, Lee JK, Kim JS, Lee JH, Kim KA, Kim AY, Kim PN, Lee MG, Ha HK. Differentiation of extrahepatic bile duct cholangiocarcinoma from benign stricture: findings at MRCP versus ERCP. *Radiology* 2004;233:234-240.

Patel S, Albert D, Dondey J, Chan HS, Heon E, Blaser S, Gallie BL. Leukocoria caused by intraocular heterotopic brain tissue. *Arch Ophthalmol* 2004 Mar;122(3):390-3.

Patlas M, McCready M, Kulkarni S, Dill-Macky MJ. Synchronous development of breast cancer and chest wall fibrosarcoma after previous mantle radiation for Hodgkin's disease. *Eur Radiol* September 8, 2004;Epub.

Patlas M, Khalili K, Dill-Macky MJ, Wilson S. Spectrum of imaging findings in abdominal extrasseous myeloma. *Am J Roentgenol* October 2004;183(4):929-932.

Patlas M, O'Malley ME, Chapman W. Adrenal metastasis from ovarian carcinoma. *Am J Roentgenol* December 2004;183(6):1711-1712. (Case Report)

Paul NS, Roberts H, Butany J, Chung T, Gold W, Mehta S, Konen E, et al. Radiologic pattern of disease in patients with severe acute respiratory syndrome: the Toronto experience. *Radiographics* 2004;24:553-563.

Peraud A, Drake J, Armstrong D, Hedden D, Babyn P, Wilson G. Fatal ethibloc embolization of vertebralbasilar system following percutaneous injection into aneurismal bone cyst of the second cervical vertebra. *AJNR Am J Neuroradiol*. 2004 Jun-Jul;25(6): 1116-20.

Pitson G, Robinson P, Wilke D, Kandel RA, White LM, Griffin AM, Bell RS, Catton CN, Wunder JS, O'Sullivan B. Radiation response: an additional unique signature of myxoid liposarcoma. *Int J Radiation Biol Phys* 2004;60(2):522-526.

Plewes DB, Luginbuhl D, Macgowan CK, Sack I. An inductive method to measure mechanical excitation spectra for MRI elastography. *Concepts in Magnetic Resonance: Part B* 2004; 21B:32-39.

Power N, Ryan S, Glanc P, Hamilton P. - Lumbar subarachnoid air after head trauma. *AJR Am J Roentgenol*. 2004 Mar;182(3):827.

Power N, Ryan S, Hamilton P. - Related Articles, Links. Computed tomographic cystography in bladder trauma: pictorial essay. *Can Assoc Radiol J* 2004 Dec;55(5):304-8.

Price VE, Fletcher JA, Zielenska M, Cole W, Viero S, Manson DE, Stuart M, Pappo AS. Imatinib mesylate: An attractive alternative in young children with large, surgically challenging dermatofibrosarcoma protuberans. *Pediatr Blood Cancer* 2005 May; 44(5):511-515.

Pron G, Mocarski E, Bennett J, Vilos G, Common AA, Vanderburgh L. Pregnancy after uterine artery embolization for leiomyomata: the Ontario Multicentre Trial. *Ob Gyn* January 2005; 105(1):67-76.

Quah BL, Hamilton J, Blaser S, Heon E, Tehrani NN. Morning glory disc anomaly, midline cranial defects and abnormal carotid circulation: an association worth looking for. *Pediatr Radiol*. 2004 Oct 7; [Epub ahead of print]

Rafay MF, Sutcliffe TL, Shroff M, Hawkins C, Weiss S, Benseler SM, deVeber G. Primary central nervous system angiitis in a 10-year-old girl. *Can. J. Neurol. Sci.* 2005; 32: 243-245.

Rajan DK, Bunston S, Misra S, Pinto R, Lok CE. Outcomes of dysfunctional autogenous hemodialysis fistulas after angioplasty: Are there clinical predictors of patency? *Radiology* August 2004;232(2):508-515.

Rajan DK, Sniderman KW. Rupture of a stenotic hepatic artery after liver transplantation: Endovascular salvage using a covered stent. *Am J Roentgenol* October 2004;183(4): 1029-1031.

Rajan DK, Sniderman KW, Rubin BB. Retrieval of the Bard Recovery Filter from the superior vena cava. *J Vasc Interv Radiol* October 2004;15(10):1169-1171.

Rajan DK, Beecroft JR, Clark TWI, Asch MR, Simons ME, Kachura JR, Sved M, Sniderman KW. Risk of intrauterine infectious complications after fibroid embolization in patients with submucosal fibroids. *J Vasc Interv Radiol* December 2004;15(12):1415-1421.

Rajan DK, Stavropoulos SW, Shlansky-Goldberg RD. Management of transplant renal artery stenosis. *Seminars of Interventional Radiology* December 2004;21(4):259-269.

Rajan DK, Patel N, Valji K, Hovsepian DM, Siskin GP, Bonn J, Cardella JF, Clark TWI, Lampmann LE, Miller DL, Omary RA, Pelage JP, Schwartzberg MS, Towbin RB, Walker WJ, Sacks D. Quality improvement guidelines for percutaneous management of acute limb ischemia. *J Vasc Interv Radiol* May 2005;16(5):585-595.

Rajan DK, Ginzburg VE. Hepatocellular carcinoma supplied by parasitized branches of the ileocolic artery. *Clinical Radiology* June 2005;60(6):723-726.

Rampersaud YR, Pik JHT, Salonen D, Farooq S. Clinical accuracy of fluoroscopic computer-assisted pedicle screw fixation: A CT analysis. *Spine* 2005;30:E183-E190.

Raybaud CA. Refractory partial epilepsy: morphological imaging in children. *Rev Neurol (Paris)* 2004 Jun; 160 Spec No 1:5S106-16.

Revel-Vilk S, Golomb MR, Achonu C, Stain AM, Armstrong D, Barnes MA, Anderson P, Logan WJ, Sung L, McNeely M, Blanchette V, Feldman BM. Effect of intracranial bleeds on the health and quality of life of boys with hemophilia. *J Pediatr*. 2004 Apr; 144(4):490-5.

Riad S, Griffin AM, Liberman B, Blackstein ME, Catton CN, Kandel RA, O'Sullivan B, White LM, Bell RS, Ferguson PC, Wunder JS. Lymph node metastasis in soft tissue sarcoma in an extremity. *Clin Orthop* 2004;1(426):129-134.

Riddell AM, Khalili K. Sequential adrenal infarction without MR detectable hemorrhage in primary antiphospholipid antibody syndrome. *Am J Roentgenol* July 2004;183(1):220-222.

Riddell A, Jhaveri K, Haider MA. Pseudocyst rupture into the portal vein diagnosed with MRI. *Br J Radiol* March 2005;78(927):265-268.

Roman KS, Kellenberger CJ, Farooq S, Macgowan CK, Gilday DL, Yoo S-J. Comparative imaging of differential pulmonary blood flow in patients with congenital heart disease: magnetic resonance imaging versus lung perfusion scintigraphy. *Pediatric Radiology* March 2005; 35(3):295-301.

Roman KS, Kellenberger CJ, Farooq S, MacGowan CK, Gilday DL, Yoo SJ. Comparative imaging of differential pulmonary blood flow in patients with congenital heart disease: magnetic resonance imaging versus lung perfusion scintigraphy. *Pediatr Radiol*. 2005 March;35:295-301.

Roman KS, Kellenberger CJ, Macgowan CK, Coles J, Redington A, Benson LN, Yoo S-J. How is pulmonary arterial blood flow affected by pulmonary venous obstruction in children? A phase-contrast MR study. *Pediatric Radiology* June 2005; 35(6):580-586.

Roman KS, Kellenberger CJ, Macgowan CK, Coles J, Redington AN, Benson LN, Yoo SJ. How is pulmonary arterial blood flow affected by pulmonary venous obstruction in children? A phase-contrast magnetic resonance study. *Pediatr Radiol*. 2005 June; 35: 580-586.

Ryan MF, Hamilton PA, Sarrazin J, Chu P, Benjaminov O, Lam K. - The halo sign and peripancreatic fluid: useful CT signs of hypovolaemic shock complex in adults. Clin Radiol. 2005 May;60(5):599-607.

Ryan MF, Hamilton PA, Chu P, Hanaghan J. - Active extravasation of arterial contrast agent on post-traumatic abdominal computed tomography. Can Assoc Radiol J. 2004 Jun;55(3):160-9.

Sack I, Macgowan CK, Samani A, Luginbuhl C, Oakden W, Plewes DB. Observation of non-linear shear wave propagation using Magnetic Resonance Elastography. Magnetic Resonance in Medicine October 2004; 52(4)-842-850.

Sakuta R, Otsubo H, Nolan MA, Weiss SK, Hawkins C, Rutka JT, Chuang, NA, Chuang SH, Snead OC, III. Recurrent Intractable Seizures in Children with Cortical Dysplasia Adjacent to Dysembryoplastic Neuroepithelial Tumor. J Child Neurol 2005;20:377-384.

Schwerzmann M, Salehian O, Elliot T, Merchant N, Siu SC, Webb GD. Anomalous origin of the left coronary artery from the main pulmonary artery in adults: Coronary collateralization at its best. Circulation 2004;110:e511-513.

Seminowich DA, Mikulis DJ, Davis KD. Cognitive modulation of pain-related brain responses depends on behavioral strategy. Pain November 2004;112(1):48-58.

Shah P, Blaser S, Toi A, Fong KW, Glanc P, Babul-Hirji R, Rutka J, Chitayat D. Cavum veli interpositi: prenatal diagnosis and postnatal outcome. Prenat Diagn 2005;25:539-542.

Silversides CK, Veldtman GR, Crossin J, Merchant N, Webb GD, McCrindle BW, Siu SC, Therrien JT. Pressure half-time predicts hemodynamically significant pulmonary regurgitation in adult patients with repaired tetralogy of Fallot. J Am Soc Echocardiogr October 2004;16(10):1057-1062.

Sklair-Levvy M, Amir G, Spectre G, Lebensart P, Applbaum Y, Agid R, Lieberman S, Ben-Yeshuda D, Sherman Y, Libson E. Image-guided cutting edge needle biopsy of peripheral lymph nodes and superficial masses for the diagnosis of lymphoma. J Comput Assist Tomogr 2005;29(3):369-372.

Swoboda NA, Armstrong DC, Smith J, Charkot E, Connolly B. Pediatric patient does in neuroangiography. Pediatric Radiology, Vol.35, No.9, pp 859-866, Sept. 2005.

Tan KT, Simons ME, Rajan DK, terBrugge K. Peripheral high flow arteriovenous vascular malformations: A single center experience. J Vasc Interv Radiol October 2004;15(10):1071-1080.

Tan KT, Cleveland TJ, Gaines PA. The use of gadolinium as intraarterial contrast agent in carotid artery stenting. Cardiovasc Intervent Radiol January 2005;28:135-137.

Tardieu M, Brunelle F, Raybaud C, Ball W, Barret B, Pautard B, Lachassine E, Mayaux MJ, Blanche S. Cerebral MR imaging in uninfected children born to HIV-seropositive mothers and perinatally exposed to zidovudine. *Am J Neuroradiol*. 2005 Apr; 26(4):695-701.

Taylor MJ, Batty M, Itier RJ. The faces of development: A review of early face processing over childhood. *Journal of Cognitive Neuroscience* October 2004; 16:1426-1442.

Taussky D, Haider M (C), McLean M, Yeung I, Williams T, Pearson S, et al. Factors predicting an increased dose to the penile bulb in permanent seed prostate brachytherapy. *Brachytherapy* 2004;3(3): 125-129.

Temple M, Williams S, John P, Chait P, Connolly. Percutaneous Treatment of Pediatric Thrombosis. *Euro J Radiol*. 2005 Jan;53(1):14-21.

Therrien J, Provost Y, Merchant N, Williams W, Colman J, Webb G. Optimal timing for pulmonary valve replacement in adults after Tetralogy of Fallot repair. *Am J Cardiol* 2005;95(6):779-782.

Thippavong S, Kellenberger CJ, Rutka JT, Manson DE. Hepatic and colonic perforation by an abandoned ventriculoperitoneal shunt. *Pediatr Radiol*. 2004 September;34:750-752.

Toi A, Lister S, Fong KW. How early are fetal sulci visible at prenatal ultrasound and what is the normal pattern of early fetal sulcal development? *Ultrasound Obstet Gynecol* December 2004;24(7):706-715.

Toms AP, White LM, Marshall TJ, Donell ST. Imaging the post-operative meniscus. *Eur J Radiol* 2005;54(2):189-198.

Toms AP, Marshall TJ, Becker E, Donell ST, Lobo-Mueller EM, Barker T. Regional migratory osteoporosis: a review illustrated by five cases. *Clinical Radiology* April 2005;60:425-438.

Traubici J, Daneman A, Hayes-Jordan A, Fecteau A. Primary germ cell tumour of the diaphragm. *J Pediatr Surg*. 2004 October ;39(10):1578-1580.

Traubici J, Daneman A. High-resolution renal sonography in children with autosomal recessive polycystic kidney disease. *AJR*. 2005 May; 184 (5): 1630-1633.

Traubici J, Daneman A, Hayes-Jordan A, Fecteau A. Primary germ cell tumor of the diaphragm. *J. Pediatr Surg* October 2004;39:1578-1580.

Twomey EL, Moore AM, Ein S, McAuliffe F, Seaward G, Yoo SJ. Prenatal ultrasonography and neonatal imaging of complete cleft sternum: a case report. *Ultrasound Obstet Gynecol*. 2005 June;25:599-601.

Valerie EP, Durrant AC, Forte V, Wales P, Chait P, Kim PC. A decade of using intraluminal tracheal/bronchial stents in the management of tracheomalacia and/or bronchomalacia: is it better than aortopexy? Journal of Pediatric Surgery. 2005 Jun; 40(6):904-907.

Vidal V, Ho CS, Petit P. Early cholangitis complicating percutaneous biliary drainage. J Radiol October 2004;85:1707-1709.

Warner E, Plewes DB, Hill KA, Causer PA, Zubovits JT, Jong RA, Cutrara MR, DeBoer G, Yaffe MJ, Messner SJ, Meschino WS, Piron CA, Narod SA. Surveillance of BRCA1 and BRCA2 mutation carriers with magnetic resonance imaging, ultrasound, mammography, and clinical breast examination. JAMA 2004; 292(11):1317-1325. (CPA)

Warner E., Causer PA. - MRI surveillance for hereditary breast-cancer risk. Lancet 2005; 365(9473):1749-9. (CPA)

Warner E, Plewes DB, Hill KA, Causer PA, Zubovits JT, Jong RA, Cutrara MR, DeBoer G, Yaffe MJ, Messner SJ, Meschino WS, Piron CA, Narod SA. - Surveillance of BRCA1 and BRCA2 mutation carriers with magnetic resonance imaging, ultrasound, mammography and clinical breast examination JAMA, September 15, 2004 Vol 292, No 11

Webb JB, O'Brien M, John PR, Nishikawa H. Early presentation of an extremity arteriovenous malformation. Br J Plast Surg. (2004) – 57(8):785-8.

White LM, Wunder JS, Bell RS, O'Sullivan B, Catton C, Ferguson P, Blackstein M, Kandel RA. Histologic assessment of peritumoral edema in soft tissue sarcoma. Int J Radiation Oncology Biol Phys 2005;61(5):1439-1445.

Wiebe S, Cohen J, Connolly B, Chait P. Percutaneous Decompression of the Bowel with a Small-Caliber Needle: A Method to Facilitate Percutaneous Abdominal Access. American Journal of Roentgenology. 2005 Jan; 184(1):227-229.

Wiebe S, Cohen J, Connolly B, Chait P. Percutaneous decompression of the bowel with a small-caliber needle: a method to facilitate percutaneous abdominal access. AJR. 2005 January; 184(1):227-229.

Wiebe S, Yoo SJ, Shroff M. Answer to Case of the Month #102 Ortner's Syndrome(Cardiovascular Syndrome). Can. Assoc. Radiol. J. 2005. June; 56(3): 173-174.

Wilkinson LM, Manson D, Smith CR. Best Cases From the AFIP – Plexiform Neurofibroma of the Bladder. RadioGraphics. 2004 October;24:S237-242.

Wong F, Pantea L, Sniderman K. Midodrine, octreotide, albumin, and TIPS in selected patients with cirrhosis and type I Hepatorenal Syndrome. Hepatology July 2004;40(1): 55-64.

Wu L. Organ Confined Prostate Cancer. AJR 183: 1079-1083. October 2004.

Yoo SJ. What does an increased atrial-to-ventricular length ratio mean in fetuses with atrioventricular septal defect? *Ultrasound Obstet Gynecol*. 2004 November;24:597-598.

Yu E, Montanera W. Periodontoid pseudotumor: CT and MRI imaging. *Neuroradiology* May 2005; 47(5):328-33. Epub April 21, 2005.

Yu E, Laughlin S, Kassel EE, Messner HA, Yucel YH. Nocardial endophthalmitis and subretinal abscess: CT and MR imaging features with pathologic correlation. *Am J Neuroradiol* May 2005; 26(5):1220-1222. (Case Report)

Zangger P, Kachura JR, Bombardier C, Redelmeier DA, Badley EM, Bogoch ER. Assessing damage in individual joints in rheumatoid arthritis: a new method based on the Larsen System. *Joint Bone Spine* September 2004;71(5):389-396.



## **PUBLICATIONS: NON-PEER-REVIEWED, BOOKS, CHAPTERS**

Atri, M. – Chapter: Pocket Radiology, Gynecology Top 100 Diagnosis. Ed: Hricak, Reinhold, Ascher. 10 of 100 Diagnosis were prepared.

Aviv RI, Armstrong D, Chong WK. Imaging the Patient with Craniosynostosis. The Clinical Management of Craniosynostosis. Clinics in Developmental Medicine No. 163. Mac Keith Press 2004, Distributed by Cambridge University Press.

Babyn P. Teaching Atlas of Pediatric Radiology (IN PREPARATION)

Chait PG. Interventional Techniques – GI Tract in Carty: Imaging Children 2e. Elsevier, Publisher. 2005; Vol 2; 1299-1303.

Chait PG. Interventional Techniques – Liver in Carty: Imaging Children 2e. Elsevier, Publisher. 2005; Vol 2; 1555-1562.

Ein SH, Daneman A. Intussusception. In: Grosfeld JL, O’Neill Jr JA, Fonkalsrud EW, Coran AG, (eds). Pediatric Surgery, 6th edition. Philadelphia: Elsevier, 2004.

Fong KW, Maxwell C, Ryan G. The fetal urogenital tract. In: Rumack CM, Wilson SR, Charboneau JW, Johnson J, (eds). Diagnostic Ultrasound, 3rd edition. St. Louis, Missouri: Elsevier Mosby, 2005. Chapter 42, pages 1393-1424.

Ketonen L, Blaser S, et al. Chapter 11: Fetal Imaging. In Pediatric Brain and Spine: An atlas of MRI and Spectroscopy. LM Ketonen, A Hiwatashi, R Sidhu, P-L Westesson. Springer, Berlin;2004, PP: 437-448.

Kim TK, Jang HJ, Wilson SR. Imaging diagnosis of hepatocellular carcinoma with differentiation from other pathology. Clin Liver Dis May 2005;9(2):253-279.

Lee BY, Charron M. Chapter XX: Nuclear Cardiology and Positron Emission Tomography, Ventricular Function and Blood Flow in Congenital Heart Disease. Editor Fogel, Springer Verlag January 2005.

Osborn A, Blaser SI, Salzman KL, et al. Diagnostic Imaging: Brain. Amirsys, Salt Lake City, 2004

Oudjhane K. Langrers Cell Histiocytosis. In Web based Curriculum in Pediatric Radiology for Radiology Residents. Reid J editor. The Cleveland Clinic Foundation 2005

Oudjhane K. The Stomach in Imaging of Children 2<sup>nd</sup> ed, Carty H, Brunelle F, Stringer DS, Kao S editors. Elsevier Publishers. Vol 2:1419- 1433, 2005

Oudjhane K. The Spleen in Imaging of Children 2<sup>nd</sup> ed, Carty H, Brunelle F, Stringer DS, Kao S editors. Elsevier Publishers. Vol 2:1633- 1643, 2005

Patsios D, Weisbrod G, Tsao MS, de Perrot M. Epithelioid angiosarcoma of the lung: A rare late complication of lucite plombage. (Case Report)

Picton TW, Taylor MJ, Durieux-Smith A. Brainstem auditory evoked potentials in pediatrics. In: Aminoff MJ (ed). Clinical Neurology, 5<sup>th</sup> edition. New York: Churchill Livingstone, 2005. Pages 525-552.

Prakesh S. Shah<sup>1</sup>, Susan Blaser<sup>2</sup>, Ants Toi<sup>3</sup>, Katherine Fong<sup>3</sup>, Phyllis Glanc<sup>4</sup>, Riyana Babul-Hirji<sup>5</sup>, James Rutka<sup>6</sup> and David Chitayat<sup>5,7\*</sup> Article: Prenat Diagn 2005; 25: 539–542. Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/pd.1114. CASE REPORT Cavum veli interpositi: prenatal diagnosis and postnatal outcome.

Salem S, Wilson SR. Gynecologic ultrasound. In: Rumack CM, Wilson SR, Charboneau JW, (eds). Diagnostic Ultrasound, 3rd edition. St. Louis, Missouri: Elsevier Mosby, 2005. Chapter 15, pages 527-587.

Tan KT, van Beek EJR, Oudkerk M. Acute deep venous thrombosis and pulmonary embolism. In: Hallett J, Mills J, Earnshaw J, Reekers J. Comprehensive Vascular and Endovascular Surgery, 1<sup>st</sup> edition. London: Harcourt, 2004. Chapter 42.

White LM. Orthopedic hardware. In: Miller TT, Schweitzer ME, (eds). Diagnostic Musculoskeletal Radiology, 1st edition. New York, New York: McGraw Hill Publishers, 2004. Chapter 11.

Wilson SR. The gastrointestinal tract. Diagnostic Ultrasound, 3rd edition. December 2004. 1(8), pages 269-320.

Wilson SR, Cohen HL, Levine MS, et al. Gastrointestinal Disease, 6<sup>th</sup> Series. ACR 2004;49:73-83,85-93,141-149,151-159.

Wilson SR, Fraser-Hill MA. Gestational trophoblastic neoplasia. Diagnostic Ultrasound, 3rd ed. December 2004. 1(16), pages 589-602.

Wilson SR, Hanbidge AE. The peritoneum. In: Rumack C, Wilson SR, Charbonneau JW, Johnson JM, (eds). Diagnostic Ultrasound, 3rd edition. Elsevier Science Publishers, 2005. 1(14), pages 503-526.

Wilson SR, Khalili K. The biliary tree and gallbladder. Diagnostic Ultrasound, 3rd edition. December 2004. 1(6), pages 171-212.

Wilson SR, Muradali D. Organ transplantation. Diagnostic Ultrasound, 3rd edition. December 2004. 1(19), pages 657-704.

Wilson SR, Thurston W. The urinary tract. Diagnostic Ultrasound, 3rd edition. December 2004. 1(9), pages 321-394.

Wilson SR, Thurston W. The adrenal glands. Diagnostic Ultrasound, 3rd edition. December 2004. 1(11), pages 425-442.

Wilson SR, Withers CE. The liver. Diagnostic Ultrasound, 3rd edition. December 2004. 1(4), pages 77-146.

Windrim R, Okun N, Fong KW. Cervical ultrasound and preterm birth. In: Rumack C, Wilson SR, Charbonneau JW, Johnson J, (eds). Diagnostic Ultrasound, 3<sup>rd</sup> edition. St. Louis, Missouri: Elsevier Mosby, 2005. Chapter 49, pages 1583-1597.

## INVITED PRESENTATIONS AND VISITING PROFESSORSHIPS

Armstrong D 5<sup>th</sup> World Stroke Congress, Vancouver B.C., Canada. June 23-28, 2004. (Poster Presentation). “Long Term Angiographic Abnormalities in Children with Craniocervical Arterial Dissection”. Rafay MF, Armstrong D, Chan A, deVeber G, MacGregor DL.

Armstrong D Submitted to 33<sup>rd</sup> Annual Child Neurology Meeting, October 2004, to be held in Ottawa, ON, Canada. “Patterns of Cerebral Ischemia in Children with MoyaMoya”. Rafay MF, Armstrong D, Peter Dirks, William Logan, Manohar Shroff, Peter Anderson, Gabrielle de Veber.

Armstrong D American Society of Spine Radiology, Puerto Rico, 2005. Angiography-Negative Primary Central Nervous System Vasculitis in Children. A Newly Recognized Inflammatory Central Nervous System Disease. S.M. Benseler, G. deVeber, C. Hawkins, R. Schneider, P.N. Tyrrell, R.I. Aviv, D. Armstrong, R.M. Laxer, E.D. Silverman.

Armstrong D The European Society of Paediatric Radiology, 42nd Annual Meeting and 28th Postgraduate Course. May 30 – June 3, 2005. Dublin, Ireland.

Armstrong D American Society of Interventional and Therapeutic Neuroradiology, 3rd Annual Practicum. May 20-22, 2005, Toronto, Ont.

Armstrong D American Society of Neuroradiology 43rd Annual Meeting. May 21 – 27, 2005. Toronto, Ont.

Armstrong D “Venous Vasuclar Malformation in Children.. 6<sup>th</sup> Annual Interventional Neuroradiology Symposium. University of Toronto. Sept. 10 &11, 2004.

Armstrong D “Contemporary aspects of Cerebral Angiography.. Pediatric Interventional Radiology Symposium. The Hospital for Sick Children. Nov. 5-7, 2004.

Armstrong D “Pediatric Head Injury”. The Canadian Institute. Nov. 15, 2004.

Armstrong D Paediatric Head Injury Claims: Litigate or Settle? Ontario Bar Association Continuing Legal Education.. Toronto, Ont. November 15, 2004.

Armstrong D “Pediatric Head Injury”.. The Oatley McLeish Guide to Brain Injury Litigation. Toronto, Ont. Dec. 9, 2004.

Armstrong D Pediatric Proliferative Angiopathy Resembling Brain AVMs. Khurfan P, Gaunarsson T, Armstrong D, Ter Brugge K. American Society of Interventional Therapeutic Neuroradiology. 2004.

Armstrong D Toronto Symposium, Canadian Medical Protective Association, Risk Management Services. January 28, 2005.

Armstrong D American Society of Spine Radiology 2005 Annual Symposium, San Juan, Puerto Rico. February 23-27, 2005.

Armstrong D Neuroimaging of the Neonatal Brain: Determining Aetiology, Timing, and Liability of Events Leading to Irreversible Brain Damage. The Canadian Institute's 11<sup>th</sup> Annual Conference. Reducing the Risk of Obstetrical Malpractice. April 5-6, 2005, Toronto, Ont.

Armstrong D Anatomy of the Skull and Spine: The Development and Radiological Appearance. The Michener Institute, April 15, 2005.

Armstrong D Pathologic Appearances in Skulls and Spines. The Michener Institute, April 15, 2005.

Armstrong D 3D and Multiplanar CT of the Temporal Bone in Auricle and External Auditory Canal Dysplasias. A Pictorial Review. D.A. Martin, S. Blaser, D. Armstrong, C. Forrest, B. Papsin. The European Society of Pediatric Radiology, May 30-June 3, 2005.

Babyn P. Musculoskeletal System Imaging. The University of Western Ontario – London. October 22, 2004

Bartlett ES, Walters TD, Symons SP, Fox A.J. (SRA) - Identification of Carotid Near Occlusion by CT Angiography. ASNR 2005 Program

Bartlett ES, Walters TD, Symons SP, Fox AJ (SRA) - Validity of Millimeter Carotid Stenosis CT Angiography Measurements for Endarterectomy

Bartlett ES, Symons SP, Fox AJ. (SRA) - Cross-Sectional Mm2 Area of Carotid Stenosis CT Angiography

Bartlett ES, Walters TD, Symons SP, Fox AJ (SRA) - Direct CT Angiographic Measurements of Vessels Alleviates Cumbersome Estimates for Ratio Calculations

Blaser S Neuroimaging features of the inborn errors of Metabolism. Society for Inborn Metabolic Disorders. Annual meeting at Asilomar, Monterey California, March 6-9, 2005.

Blaser S Development and maldevelopment of the cerebellum. Pediatric Neurosurgery Curriculum, University of Toronto February 11, 2005.

Blaser S Congenital sensorineural hearing loss, development and anomalies. First Annual Pediatric Otolaryngology Course. Montreal Children's Hospital, Montreal, Canada December 19, 2004.

Blaser S Fetal MRI: Brain and evaluation of the rest of the fetus for neuroradiologists. Azienda Ospedaliera G. Brotzu, Cagliari, Italy December 14, 2004.

Blaser S Posterior fossa development and malformations: Updated. Azienda Ospedaliera G. Brotzu, Cagliari, Italy December 14, 2004.

Blaser S Fetal MRI: A practical approach. Pediatric Radiology, Great Ormond Street Children's Hospital December 11, 2004.

Blaser S Congenital sensorineural hearing loss, development and anomalies: Pediatric Radiology and ENT, Great Ormond Street Children's Hospital December 11, 2004.

Blaser S Neck masses. Paediatric Endoscopy Course, Toronto, Canada November 12-13, 2004.

Blaser S Craniofacial malformations and sutures. University of Toronto, 19<sup>th</sup> Annual Organ Imaging Review September 26-29, 2004.

Blaser S MRI of fetal and neonatal brain development. U of Toronto/Karolinska combined program in Developmental & Perinatal Biology, Toronto Aug 12 and 17, 2004.

Blaser S Role of MRI in Neonatal HIE. Womens College Hospital, Department of Neonatology, Toronto June 24, 2004

Bret P. Visiting Professor. The future of medical imaging - speculations. Grand Rounds, Alberta Children's Hospital. Calgary, Alberta, Canada. September 22, 2004.

Bret P. How to manage your digital images: a primer. Ontario Society of Diagnostic Medical Sonographers. White Oaks Conference Resort, Niagara-on-the-Lake, Ontario, Canada. November 6-7, 2004.

Bret P. The future of medical imaging. Ontario Society of Diagnostic Medical Sonographers. White Oaks Conference Resort, Niagara-on-the-Lake, Ontario, Canada. November 6-7, 2004.

Bret P. The computer technology in our daily life. 1<sup>st</sup> Annual Practical Course in Digital Imaging and Teleradiology Connectivity in the 21<sup>st</sup> Century. The University of Toronto, The Hospital for Sick Children. Toronto, Ontario, Canada. April 10, 2005.

Bret P. RIS in the future. 1<sup>st</sup> Annual Practical Course in Digital Imaging and Teleradiology Connectivity in the 21<sup>st</sup> Century. The University of Toronto, The Hospital for Sick Children. Toronto, Ontario, Canada. April 10, 2005.

Bret P. Le futur de l'imagerie(abdominale). Réunion Gastro Deux Savoies Printemps. Chambery, France. May 26, 2005.

Bret P. Moderator. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting. Florence, Italy. May 28-31, 2005.

Bret P. Visiting Professor. US versus CT versus MRI of the pancreas. London Health Science Centre. London, Ontario, Canada. June 22, 2005.

Bret P. Visiting Professor. US and MR complementary role in biliary pathology. London Health Science Centre. London, Ontario, Canada. June 22, 2005.

Bret P. Visiting Professor. The future of medical imaging. London Health Science Centre. London, Ontario, Canada. June 22, 2005.

Bukhanov K. Dialogue on breast cancer. Healthy Living Lecture Series. Mount Sinai Hospital. Toronto, Ontario, Canada. October 28, 2004.

Chait P. Pediatric Image Guided Therapy. Where are we and what is the Future? Boston, Mass. July 2004.

Chait P. Pediatric Pleural Effusion. 3<sup>rd</sup> Annual CIRA Meeting. Mont-Tremblant, Quebec. September 2004.

Chait P. New Technologies in Percutaneous Gastrostomy Tube Placement. Building Blocks for Enteral Feeding Workshop. The Hospital for Sick Children. Toronto, Ontario. September 2004.

Chait P. Image Guided Venous and Enteric Access In the Pediatric Oncology Patient and the Impact on Care. St Jude Grand Rounds. St. Jude Children's Research Hospital. St. Jude, Tennessee. October 2004.

Chait P. Cecostomy. 1<sup>st</sup> Annual Pediatric Interventional Radiology Symposium. The Hospital for Sick Children, Toronto, Canada. November 2004.

Chait P. Live Case: Port Placement and Ultrasound Guided Peripheral Lung Nodule Biopsy. 1<sup>st</sup> Annual Pediatric Interventional Radiology Symposium. The Hospital for Sick Children, Toronto, Canada. November 2004.

Chait P. RSNA Refresher Course Presentations, Chicago, Illinois. November 2004  
(1) Techniques of Invasive Sonography (Hands-on workshop) (2) Venous Access (Hands-on Workshop)

Chait P. Vascular/Interventional Imaging. Clinical Imaging for Physical Scientists. Sunnybrook and Women's College Health Sciences Centre. April 2005.

Chait P. Interventional Radiology Issues in the ER. Emergency Division Rounds. The Hospital for Sick Children. May 2005.

Charron M. Presiding officer, Scientific Session Nuclear Medicine (Brain and Endocrine Imaging). Radiological Society of North America 90<sup>th</sup> Annual Meeting, December 1, 2004, Chicago, Illinois, USA

Charron M. Co-Moderator, Interpretation of Infrequently Performed Pediatric Nuclear Medicine Procedures – Includes Adult Diseases Presenting in the Pediatric World Session Type: SNM Continuing Education. Society Nuclear Medicine 52nd Annual Meeting, June 20, 2005, Toronto, ON, Canada.

Charron M. Moderator, Pediatrics: Pediatric PET II and Others, Session Type: Scientific Paper Session. Society Nuclear Medicine 52nd Annual Meeting, June 21, 2005, Toronto, ON, Canada.

Chawla T. MRI-behind the mystery. CME CAR Radiology for Family Physicians. Western Shore, Nova Scotia, Canada. October 1, 2004.

Chawla T. Barium or not-what to order in 2004. CME CAR Radiology for Family Physicians. Western Shore, Nova Scotia, Canada. October 2, 2004.

Chawla T. OB ultrasound: chromosomal markers. CME CAR Radiology for Family Physicians. Western Shore, Nova Scotia, Canada. October 2, 2004.

Chawla T. MRI-behind the mystery. Niagara-on-the-Lake, Ontario, Canada. October 22, 2004.

Chawla T. Barium or not-what to order in 2004. Niagara-on-the-Lake, Ontario, Canada. October 23, 2004.

Chawla T. OB ultrasound: chromosomal markers. Niagara-on-the-Lake, Ontario, Canada. October 23, 2004.

Chawla T. The pros and cons of CT based virtual colonoscopy. Ontario Gastrointestinal Multidisciplinary Oncology Conference. Department of Radiation Oncology, Sunnybrook and Women's College Health Sciences Centre. Toronto, Ontario, Canada. November 13, 2004.

Chawla T. MRI-behind the mystery. Lake Louise, Alberta, Canada. November 19, 2004.

Chawla T. Barium or not-what to order in 2004. Lake Louise, Alberta, Canada. November 20, 2004.

Chawla T. OB ultrasound: chromosomal markers. Lake Louise, Alberta, Canada. November 20, 2004.

Chawla T. MR imaging of the bowel. Michener Institute. Toronto, Ontario, Canada. June 5, 2005.

Chawla T. Radiology of thyroid masses and hyperthyroidism. One Day Course on Functional and Structural Diseases of the Thyroid. Department of Otolaryngology, Mount Sinai Hospital. Toronto, Ontario, Canada. June 11, 2005.

Cheng HLM. Magnetic resonance imaging for characterizing the microcirculation. 17<sup>th</sup> Annual MRI Retreat, Gibraltar Point Retreat Centre, Toronto, Canada, September 2004.

Cheyne D. Spatial filtering approaches to neuromagnetic source reconstruction. Santa Fe Source Reconstruction Symposium; Bishop's Lodge, Santa Fe, NM, USA, June 2005.



Cheyne D. Dipole modeling versus event-related SAM: Effects of correlated brain activity. Symposium on Spatial Filtering in Biomagnetism, 14<sup>th</sup> International Conference on Biomagnetism; Boston, USA, August 2004.

Connolly B. Canadian Society of Pediatrics Workshop in Montreal: Nutritional rehabilitation of the pediatric patient with special needs in the community. Connolly B, Telch J, Issenmann R. June 2004

Connolly B. A systemic approach to a novel integrated care program. RCPSC Annual Meeting. Ottawa, Ontario. MacGregor D, Connolly B, Mahant S, Gamulka B, Gerstle JT. October 2004

Connolly B. IGT; clinical role. First ever Pediatric Interventional Radiology Symposium. Conference organizer & host with Dr. M. Temple, The Hospital for Sick Children, November 2004

Crystal P. Supplemental screening sonography in premenopausal women. 7<sup>th</sup> Milan Breast Cancer Conference. Milan, Italy. June 15-17, 2005.

Crystal P. Adjunctive sonography in mammographically dense breasts. International Symposium - New and Controversial Topics in Breast Cancer Screening and Treatment. Nijmegen, Netherlands. June 17-18, 2005.

Daneman A. Invited Lecturer: Lima, Peru, November 4-7, 2004 Combined meeting of the 19<sup>th</sup> Congress of the Radiological Society of Peru and the 8<sup>th</sup> Congress of the Latin American Society for Pediatric Radiology. (1) Role of Ultrasound in Vascular Pathology in Pediatrics. (2) Neurosonography in Neonates with Correlation with CT and MRI. (3) Imaging of the Acute Abdomen in Pediatrics. (4) Malrotation: Diagnostic Aspects, Techniques and Pitfalls.

Daneman A. Invited Lecturer: Rio de Janeiro, Brazil, November 12-14, 2004 33<sup>rd</sup> Congress of the Brazilian College of Radiology. (1) New Techniques of Colour Doppler Sonography in Pediatrics and their Principle Indications. (2) Neurosonography: Correlation of Ultrasound with MR and CT in Neonates: Can Ultrasound Compete with MR and CT? (3) Malrotation Evaluation in Pediatrics. Award: Honorary Membership of Brazilian College of Radiology, 2004

Daneman A. Refresher Course Faculty. Radiological Society of North America Chicago, Illinois, USA, December 2, 2004. Advances in Pediatric Doppler Sonography

Daneman A. Malrotation: How to Avoid Disaster Invited Lecturer: New Orleans, Louisiana, May 4-7, 2005 The Society for Pediatric Radiology 48<sup>th</sup> Annual Meeting.

Daneman A. State of the art US imaging in the term infant with hypoxic ischaemic encephalopathy. Symposium: Neonatal Brain Imaging. The European Society of Pediatric Radiology. Dublin, Ireland, May 30 – June 3, 2005

Daneman A. Intussusception: an update on diagnosis and management Radiology residents:

interesting case review. Visiting Professor, Yale University School of Medicine. New Haven, Connecticut, May 12-13, 2005

Dill-Macky MJ. Contrast enhanced ultrasound of the abdomen. New Issues Forum, Abdominal Imaging. American Roentgen Ray Society Meeting. New Orleans, Louisiana, USA. May 2005.

Fanning NF, Walters TD, Symons S, Fox, A.(C) - Relationship between Carotid Artery Bifurcation Calcification and White Matter Changes

Fong KW. Sonography of fetal genitourinary malformations. Fall Education Days. Ontario Society of Diagnostic Medical Sonographers. Niagara-on-the-lake, Ontario, Canada. November 6-7, 2004.

Fong KW. The early fetal anomaly scan. Fall Education Days. Ontario Society of Diagnostic Medical Sonographers. Niagara-on-the-lake, Ontario, Canada. November 6-7, 2004.

Fong KW. Refresher course faculty. Venous doppler sonography: Visceral and extremity applications (hands-on workshop). Radiological Society of North America, 90<sup>th</sup> Scientific Assembly and Annual Meeting. Chicago, Illinois, USA. November 28-December 3, 2004.

Fong KW. The early fetal anomaly scan. The 11-14 weeks scan course. Department of Obstetrics & Gynecology, University of Toronto. Toronto, Ontario, Canada. December 11, 2004.

Fong KW. Fetal genitourinary system. Obstetric Ultrasound Conference: Setting the standard for 2005. University of Toronto. Toronto, Ontario, Canada. February 18-20, 2005.

Fong KW. Workshop. Reporting of soft markers. Obstetric Ultrasound Conference: Setting the standard for 2005. University of Toronto. Toronto, Ontario, Canada. February 18-20, 2005.

Fox AJ - CTA Replaces Carotid Stenosis Quantification from DSA. France-Israel Association of Radiology, Eilat, Israel, Oct. 2004

Fox AJ - a) Vascular anatomy and radiologic pearls in stroke diagnosis; b) Neuroimaging and stroke diagnosis, workshop with A Demchuk, invited Speaker. Canadian Stroke Consortium, Neurology Residents' Stroke Course, Mar 2005, Toronto

Glanc P, MD, FRCP(C), Toronto, ON; Salem S, MD; Farine D, MD, FRCS; Khalifa M, MD - Exhibit ID: E242; Title: Maternal Adnexal Masses: A Diagnostic and Management Challenge. American Roentgen Ray Society 2005, New Orleans, May 15-20 2005.

Glanc,P, D Koff, M Dunn, G Elliott, A Volkening, S Marafioti. - Exhibit ID: E371; Title: Implementation of a Web-Enabled Neonatal Unit Teleradiology Network

Glanc P. 2005 AIUM Annual Convention, June 19-22 Orlando, Florida. American Institute of Ultrasound in Medicine

Glanc P. 2005 The Fetal Musculoskeletal System: Obstetrical Ultrasound: Setting the Standard for 2005. February 21, 23, 2005, University of Toronto, Ontario.

Haider M. Visiting Professor. Dynamic contrast enhanced MRI for detection of prostate cancer in high-risk patient. Beth-Israel Deaconess Hospital, Harvard Medical School. Boston, MA, USA. 2004.

Haider M. Refresher Course. MRI of the pancreas. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Haider M. CT and MRI to help with radiation treatment volume definition and planning. GU Radiation Oncologists of Canada Meeting. Toronto, Ontario, Canada. November 2004.

Haider M. MRI of prostate cancer. International Society of Magnetic Resonance in Medicine (ISMRM) Advanced Course in MR and Cancer. MRI National University of Singapore. Singapore. March 2005.

Haider M. USPIO contrast enhanced MRI for pelvic lymphadenopathy. International Society of Magnetic Resonance in Medicine (ISMRM) Advanced Course in MR and Cancer. MRI National University of Singapore. Singapore. March 2005.

Haider M. MRI of uterine and cervix neoplasia. International Society of Magnetic Resonance in Medicine (ISMRM) Advanced Course in MR and Cancer. MRI National University of Singapore. Singapore. March 2005.

Haider M. Parallel imaging artifacts in body MRI. International Society of Magnetic Resonance in Medicine (ISMRM). Miami Beach, Florida, USA. May 2005.

Haider M. MRI of the prostate-dynamic contrast enhancement and other new developments. Chinese National Abdominal Imaging Congress. Shenyang, China. June 2005.

Hanbidge A. Pancreatic masses: The role of ultrasound. Annual Meeting of Ontario Society of Diagnostic Medical Sonographers. Niagara-on-the-Lake, Ontario, Canada. November 2004.

Hanbidge A. Imaging acute right upper quadrant pain. Annual Meeting of Ontario Society of Diagnostic Medical Sonographers. Niagara-on-the-Lake, Ontario, Canada. November 2004.

Hanbidge A. Refresher Course. Sonographic evaluation: The acute abdomen of hepato-biliary origin. Annual Meeting of the Radiological Society of North America. Chicago, Illinois, USA. November-December 2004.

Hayeems EB. IVC filters: Permanent and optional considerations. Society of Interventional Radiology Annual Scientific Meeting. New Orleans, Louisiana, USA. March 2005.

Hayeems EB. Radiofrequency ablation of lung tumours. Canadian Interventional Radiology Association Annual Meeting. Deerhurst Resort, Huntsville, Ontario, Canada. June 9-11, 2005.

Hayeems EB. Radiofrequency ablation of bone lesions. Canadian Interventional Radiology Association Annual Meeting. Deerhurst Resort, Huntsville, Ontario, Canada. June 9-11, 2005.

Jaffer N. Abdomen enterocolysis. 2004 Multislice Ct Symposium Course. Montreal, Quebec, Canada. October 23-24, 2004.

Jaffer N. Virtual colonoscopy. Grand Rounds. Sunnybrook and Women's College Health Sciences Centre. Toronto, Ontario, Canada. November 25, 2004.

Jaffer N. Role of CT colonography in the family practice population. Monthly Family Practice Grand Rounds, Department of Family Medicine, Mount Sinai Hospital. Toronto, Ontario, Canada. January 26, 2005.

Jang HJ. Imaging findings of nodules in liver cirrhosis. Seoul National University Hospital. Seoul, Korea. October 27, 2004.

Jang HJ. Imaging of hepatic focal lesions: contribution of contrast-enhanced ultrasound. Samsung Medical Center. Seoul, Korea. October 28, 2004.

Jhaveri K. MRI in uterine & adnexal masses. 58th Annual Congress Indian Radiological & Imaging Association. Agra, India. January 22, 2005.

Jhaveri K. CT/MR in focal liver disease. 58th Annual Congress Indian Radiological & Imaging Association. Agra, India. January 23, 2005.

John P. Liver Intervention. The Society for Pediatric Radiology, 47th Annual Meeting, Savannah, Georgia, 2004.

John P. Management of High-Flow Vascular Anomalies. The Lindsay-Thomson Symposium in Pediatric Plastic Surgery, Toronto, September 2004.

John P. Vascular birthmarks. Plastic Surgery Educational Rounds, The Hospital for Sick Children, Toronto, September 2004.

John P. Portal Hypertension. Pediatric Interventional Radiology Symposium, The Hospital for Sick Children, Toronto, November 2004

John P. Renovascular Hypertension. Pediatric Workshop, SIR 2005

Jong R. - Surveillance of High Risk Women - American Society of Breast Disease's 29<sup>th</sup> Annual Symposium, Las Vegas, Nevada April 14-16, 2005

Jong R. – a) New Screening Technologies, b) Keys to Successful Screening, c) Diagnosis  
The International forum on Breast Cancer, Beijing, China, February 22-24, 2005.

Jong R – a) Mammographic Masses and Asymmetries, b) Problem solving with Supplementary Mammographic Views and Ultrasound, c) Screening MRI: When is it Justified? d) Ultrasound-Guided Core Biopsy, e) Digital Mammography: A Better Vision  
Breast Imaging Update 2004 - Montreal, Quebec, August 20-22, 2004

Kachura JR. Tumor management (Moderator); Embolization (hands-on workshop); Angioplasty/stents. Canadian Interventional Radiology Association, 3<sup>rd</sup> Annual Meeting. Mont Tremblant, Quebec, Canada. September 9-10, 2004.

Kachura JR. The role for interventional radiology in liver cancer. 4<sup>th</sup> Annual Princess Margaret Hospital Conference on New Developments in Cancer Management. Marriott Eaton Centre, Toronto, Ontario, Canada. September 23, 2004.

Kachura JR. Arteries - from angioplasty to endografts; Uterine fibroid embolization; Interventional radiology treatment for infertility; Management of DVT, PE and swollen legs. Radiology for Family Physicians, Canadian Association of Radiologists. Oak Island Resort and Spa, Western Shore, Nova Scotia, Canada. October 1-2, 2004.

Kachura JR. Arteries - from angioplasty to endografts; Uterine fibroid embolization; Interventional radiology treatment for infertility; Management of DVT, PE and swollen legs. White Oaks Conference Resort and Spa, Niagara-on-the-Lake, Ontario, Canada. October 22-23, 2004.

Kachura JR. Key Note Lectures: Current trends in the use of RF (radiofrequency) ablation in IR (interventional radiology); Vascular foreign body removal: approaches and principles. 6<sup>th</sup> Asia-Pacific Congress of Cardiovascular and Interventional Radiology. New Delhi, India. October 31-November 3, 2004.

Kachura JR, Kumar S. Debate: UFE (uterine fibroid embolization) is the preferred treatment-method in suitable patients with uterine fibroids [Chairpersons]. 6<sup>th</sup> Asia-Pacific Congress of Cardiovascular and Interventional Radiology. New Delhi, India. October 31, 2004.

Kachura JR. Interventional radiology in obstetrics. Grand Rounds, Department of Obstetrics and Gynecology, Mount Sinai Hospital. Toronto, Ontario, Canada. November 5, 2004.

Kachura JR. Arteries - from angioplasty to endografts; Uterine fibroid embolization; Interventional radiology treatment for infertility; 4) Management of DVT, PE and swollen legs. Fairmont Chateau, Lake Louise, Alberta, Canada. November 19-20, 2004.

Kachura JR. Radiofrequency ablation in oncology: the current state of affairs. Toronto Surgical Oncology Rounds. Vaughan Estate, Sunnybrook, Toronto, Ontario, Canada. November 25, 2004.

Kachura JR. Tumor ablation with radiofrequency, cryotherapy or microwave systems (hands-on workshop). Society of Interventional Radiology, 30<sup>th</sup> Annual Scientific Meeting. New Orleans, Louisiana, USA. April 2, 2005.

Kachura JR. Percutaneous RF (radiofrequency)-what is and is not possible; Lunch Symposium: Interventional radiologic management of hepatobiliary problems (Moderator). American Hepato-Pancreato-Biliary Association, Annual Meeting. Fort Lauderdale, Florida, USA. April 14-17, 2005.

Kachura JR. Interventional radiology in obstetrics. Ontario Society of Diagnostic Imaging Nurses, Annual Spring Meeting. Quality Suites Toronto Airport Hotel, Toronto, Ontario, Canada. April 23, 2005.

Kachura JR. Radiofrequency ablation (hands-on workshop); Embolization with Nester coils; Renal artery angioplasty; Radiofrequency ablation [Moderator]; Interventional oncology - an overview; RFA (radiofrequency ablation) of liver - cases; RFA - kidney; Morbidity and mortality cases. Canadian Interventional Radiology Association, 4<sup>th</sup> Annual Meeting. Deerhurst Resort, Huntsville, Ontario, Canada. June 9-11, 2005.

Kassel EE. Evaluation of the patient with facial swelling/mass lesion. American Society of Head and Neck Radiology, 38th Annual Meeting and Symposium. Philadelphia, PA, USA. September 29-October 3, 2004.

Kassel EE. Imaging of the parotid and submandibular glands. Special session: Head and Neck Radiology for the Neuroradiologist. American Society of Neuroradiology Annual Meeting and Symposium. Toronto, Ontario, Canada. May 24, 2005.

Kassel EE. Cross-sectional imaging of thyroid masses and hyperthyroidism. One Day Course on Functional and Structural Diseases of the Thyroid. Departments of Otolaryngology, Head and Neck Surgery, Medicine, Laboratory Medicine and Pathobiology. University of Toronto, Mount Sinai Hospital. Toronto, Ontario, Canada. June 11, 2005.

Kim TK. Liver cases of contrast-enhanced ultrasound. 6th International Symposium on Ultrasound Contrast Imaging. Tokyo, Japan. December 2004.

Kulkarni S. Ultrasound contrast imaging in breast lesions- A new technique. Dr. S.K. Sharma Ultrasound Symposium, 58th Annual Congress Indian Radiological & Imaging Association. Agra, India. January 2005.

Kulkarni S. Breast ultrasound: current status. USCON XIV Indian Federation of Ultrasound in Medicine & Biology. Pune, India. February 2005.

Kulkarni S. Workshop. Breast Ultrasound. USCON XIV Indian Federation of Ultrasound in Medicine & Biology. Pune, India. February 2005.

Lazinski D. Neuroradiology and the obstetrical patient. Obstetric Anesthesia Conference, University of Toronto. Toronto, Ontario, Canada. September 11, 2004.

Lee SK. Stent and coiling for Berry Aneurysms. 6<sup>th</sup> Annual Interventional Neuroradiology Symposium. Toronto, Ontario, Canada. September 10-11, 2004.

Lee SK. A multidisciplinary approach to stroke in patients post cardiovascular surgery: Interventional neuroradiology perspectives. Cardiovascular Teaching Rounds, Cardiac Surgery, University of Toronto. Toronto, Ontario, Canada. April 29, 2005.

Macgowan C. Real-Time MRI. *Pediatric Cardiovascular MR Symposium*, Toronto, Canada – April 3, 2005. Sponsor: Society for Pediatric Radiology

Macgowan C. How to Reduce Magnetic-Resonance Artifacts. *Pediatric Cardiovascular MR Symposium*, Toronto, Canada – April 3, 2005. Sponsor: Society for Pediatric Radiology

Macgowan C. Optimization of 3D Contrast-Enhanced Pulmonary MRA in Paediatric Patients with Cardiovascular Disease. *16<sup>th</sup> Annual International MR Angiography Workshop*, London, Canada – October 7, 2004. Sponsor: University of Western Ontario & MR Angio Club

Macgowan C. Magnetic Resonance Artifacts. *19<sup>th</sup> Annual Organ Imaging Review*, Toronto, Canada – September 29, 2004. Sponsor: University of Toronto

Manson D. Approach to Common Pediatric Pneumonia and Neonatal Chest + Resident Case Review. ½ day Invited Lecturer for Radiology Residents, McMaster University Health Sciences Centre, Hamilton, Ontario, February 18, 2004.

Manson D. Current Issues in Imaging of Congenital Pulmonary Abnormalities. Visiting Professor, Queen's University, Kingston, Ontario, September 23, 2004.

Manson D. Emergency Room Films That You Love to Hate. Paediatric Update 2005, The Hospital for Sick Children, Department of Paediatrics, University of Toronto Conference Centre, May 2-7, 2005.

Merchant N. New cardiac imaging technique (MRI, Multibeam, PET). The American Association for Thoracic Surgery. San Francisco, California, USA. April 9-13, 2005.

Merchant N. Keynote Speaker. CT/MRI in cardiac disease. Ontario Association of Radiologists. Toronto, Ontario, Canada. April 17, 2005.

Merchant N. MRI of the thoracic aorta. American Roentgen Ray Society 105<sup>th</sup> Annual Meeting. New Orleans, Louisiana, USA. May 15-20, 2005.

Mikulis D. Optimization, facilitation, and application of MRI in acute stroke imaging. The Illinois Radiological Society Northwestern Hospital. Chicago, Illinois, USA. September 12, 2004.

Mikulis D. Imaging brain plasticity: In search of signatures. The Sunderland Society Conference. Toronto, Ontario, Canada. 2004.

Mikulis D. Principles and protocols - Neuro MRI. International Society of Magnetic Resonance in Medicine (ISMRM). Miami, Florida, USA. May 7, 2005.

Mikulis D. Functional imaging for the neuro-interventionalist. American Society of Interventional and Therapeutic Neuroradiology, 3<sup>rd</sup> Annual Practicum. Toronto, Ontario, Canada. May 20-22, 2005.

Navarro O. June 29, 2004, Pediatric abdominal imaging with emphasis on neonatal gastrointestinal pathology. Kingston, Ontario, Queen's University, Resident Teaching Rounds

Navarro O. September 29, 2004, Acute Abdomen in the Older Child, Toronto, Ontario, University of Toronto, 19<sup>th</sup> Organ Imaging Review

Navarro O. November 3-7, 2004, Current concepts on diagnosis and management of intestinal intussusception, Lima, Perú, 8<sup>th</sup> Congress of the Latin American Society of Pediatric Radiology

Navarro O. November 3-7, 2004, MRI of liver masses in children, Lima, Perú, 8<sup>th</sup> Congress of the Latin American Society of Pediatric Radiology

Navarro O. November 3-7, 2004, MRI of pediatric soft tissue masses, Lima, Perú, 8<sup>th</sup> Congress of the Latin American Society of Pediatric Radiology

Navarro O. November 3-7, 2004, MRI of pediatric bone marrow, Lima, Perú, 8<sup>th</sup> Congress of the Latin American Society of Pediatric Radiology

Navarro O. November 9, 2004, MRI of pediatric bone marrow, Santiago, Chile, Department of Radiology, Pontificia Universidad Católica de Chile

O'Malley M. Visiting Professor. Renal lesions: Review. MacMaster University. Hamilton, Ontario, Canada. March 2, 2005.

O'Malley M. Visiting Professor. Abdominal imaging case review. MacMaster University. Hamilton, Ontario, Canada. March 2, 2005.

O'Malley M. Visiting Professor. GU radiology case review. MacMaster University. Hamilton, Ontario, Canada. March 2, 2005.

O'Malley M. Workshop. Multidetector CT Protocols. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting and Postgraduate Course. Florence, Italy. May 28-31, 2005.

Oudjhane K. The Irritable Hip in Children. The 19<sup>th</sup> Annual Organ Imaging Review. University of Toronto, Toronto, Sept 26- 29, 2004

Oudjhane K. Pathologic Fractures in Children. The 31<sup>st</sup> Annual Refresher Course, The International Skeletal Society, Malta, Oct 4-9, 2004.



Paul N. Refresher Course. Chest wall disease. American Roentgen Ray Society Meeting. New Orleans, Louisiana, USA. May 2005.

Paul N. Infectious disease lessons learned from SARS. Charlottetown, PEI, Canada. June 2005.

Provost Y. Yang Y, Merchant N, Konen E, Wright GA. Scar tissue in patients with ischemic heart failure: evaluation by delayed enhancement magnetic resonance imaging and correlation with left ventricular ejection fraction. Canadian Cardiovascular Congress and XIX InterAmerican Congress of Cardiology. Toronto, Ontario, Canada. October 27, 2004.

Provost Y. Cardiac CT: Applications in adult patients with congenital heart disease. 2005 Symposium on Advanced Pediatric Cardiovascular MR. Hospital for Sick Children. Toronto, Ontario, Canada. April 2, 2005.

Provost Y. Seminaire sur l'imagerie cardiaque: Presentation de cas cliniques. Canadian Association of Radiologists Meeting. Montreal, Quebec, Canada. May 27, 2005.

Provost Y. Cardiac CT - what you want to know. Department of Cardiology, University of Toronto. Toronto, Ontario, Canada. May 31, 2005.

Rajan DK. Teams. Endovascular management of aneurysms. Transfemoral Endovascular Aneurysm Management Symposium 2004. University of Sherbrooke. Quebec City, Quebec, Canada. October 2004.

Rajan DK. UFE embolization-failures, recurrences, complications, effect on fertility. 6th Asia-Pacific Conference of Cardiovascular and Interventional Radiology. New Delhi, India. October 2004.

Rajan DK. Techniques to prolong graft patency in dialysis access fistulas: stents, stent grafts, cutting balloons. 6th Asia-Pacific Conference of Cardiovascular and Interventional Radiology. New Delhi, India. October 2004.

Rajan DK. Coordinator and Faculty. Hemodialysis Interventions Workshop. 30<sup>th</sup> Society of Interventional Radiology Annual Meeting. New Orleans, Louisiana, USA. March 2005.

Roberts H. Lung cancer screening revisited. Toronto City-Wide Respiriology Rounds. Toronto, Ontario, Canada. February 9, 2005.

Roberts H. Screening/risk factors. Lung cancer: A clearer picture. Whitby, Ontario, Canada. November 18th, 2004.

Ranson M. September 27, 2004, Imaging of pediatric MSK infection, Toronto, ON, 19<sup>th</sup> Annual Organ Imaging Review, Dept. of Medical Imaging, University of Toronto

Raybaud C.(1) Brain development, (2) Imaging epilepsy in children, (3) Hydrocephalus. ERASMUS Course. Ancona, Italy. September 25-30, 2004.

Raybaud C. Malformations of the spine and cord. Society of Neuroradiology. Copenhagen, Denmark. November 11, 2004.

Raybaud C. Classification of Polymicrogyrias. European Society of Magnetic Resonance in Neuropediatrics (ESMRN). Genova, Italy. December 10-12, 2004.

Raybaud C. (1) Anatomy: occipital lobe, (2) Anatomy: parietal lobe, (3) Anatomy: basal ganglia (4) Anatomy: limbic system, (5) Workshop: Pediatric Brain Tumors. European Course in Neuroradiology (ECNR) 2<sup>nd</sup> Course 8<sup>th</sup> Cycle, Basel Switzerland. March 18 – 22, 2005.

Raybaud C. Fetal brain imaging: diagnosis and prognosis. International Society of Magnetic Resonance in Medicine (ISMRM). Miami Beach, Florida USA. May 7-13, 2005.

Raybaud C. (1) MR aspects of hemispheric tumors. (2) Neuroimaging in epilepsy. VI European Post-Graduate Course in Neurosurgery, Wisla, Poland. May 11-15, 2005.

Salonen D. Interventional radiology of the spine. Current Concepts in Sports Medicine: MRI. Niagara Falls, Ontario, Canada. July 16-18, 2004.

Salonen D. MRI of the wrist and hand. Current Concepts in Sports Medicine: MRI. Niagara Falls, Ontario, Canada. July 16-18, 2004.

Salonen D. MRI of the postoperative shoulder. Current Concepts in Sports Medicine: MRI. Niagara Falls, Ontario, Canada. July 16-18, 2004.

Salonen D. MRI of the ankle and foot. Current Concepts in Sports Medicine: MRI. Niagara Falls, Ontario, Canada. July 16-18, 2004.

Salonen D. MRI of the postoperative knee. Current Concepts in Sports Medicine: MRI. Niagara Falls, Ontario, Canada. July 16-18, 2004.

Salonen D. Imaging: The clue to diagnosis. 3<sup>rd</sup> Annual Arthritis Day for Primary Care Practitioners, Inflammatory Back Pain & Associated Disorders. Toronto, Ontario, Canada. October 23, 2004.

Salonen D. Visiting Professor. Imaging assessment of shoulder instability. Department of Diagnostic Radiology, McGill University. Montreal, Quebec, Canada. November 15-16, 2004.

Salonen D. Visiting Professor. Pre & post-operative assessment of the knee-menisci. Department of Diagnostic Radiology, McGill University. Montreal, Quebec, Canada. November 15-16, 2004.

Salonen D. Radiology of the back for the Rheumatologist. The Canadian Rheumatology Association 60th Annual Meeting and 12th Winter Workshop. Mt.Tremblant, Quebec, Canada. March 2-5, 2005.

Salonen D. Potpourri of rheumatologic radiology. The Canadian Rheumatology Association 60th Annual Meeting and 12th Winter Workshop. Mt.Tremblant, Quebec, Canada. March 2-5, 2005.

Shroff M. “Functional MRI in Children.” Grand Rounds. University of Manitoba. Winnipeg, Manitoba. April 7, 2005.

Shroff M. “Pediatric Head and Neck Masses”, “Neonatal Brain Imaging”. Visiting Professor. University of Manitoba. Winnipeg, Manitoba. April 7, 2005.

Shroff M. “Pediatric Neurofunctional Imaging”. 90<sup>th</sup> Scientific Assembly and Annual Meeting, RSNA Chicago, Illinois. November, 2004.

Shroff M. “CNS infection in Children” & “Neonatal MRI/CT of the brain”, along with radiology resident presentations. Radiology Education Foundation, Mumbai, India. King Edward Memorial Hospital. August 11, 2004.

Taylor M. Electrophysiological measures of the development of face processing. Part of the symposium: Face Processing in Childhood. Society for Research in Child Development, Atlanta, USA, April 2005.

Temple M. First Pediatric Interventional Radiology Symposium, Conference Organizer & Host with Dr. B. Connolly, The Hospital for Sick Children, November 2004.

TerBrugge K. BAVM angioarchitecture; DAVF with CVR, management strategies; Vein of Galen management indications; Paraspinal vascular malformations; AVS in pediatric group. 7<sup>th</sup> Annual Peer Review in Interventional Neuroradiology. Cape Town, South Africa. September 15-19, 2004.

TerBrugge K. Brain AVM, relationship between angioarchitecture and clinical presentation, implications for management; Pediatric intracranial arteriovenous shunts, imaging and management; Imaging and management of vascular lesion of Head and Neck; Pediatric strokes-special entities; Management of occlusive diseases. Weekend Invitational Seminar for Education in Radiology. Kuala Lumpur, Malaysia. September 25-26, 2004.

TerBrugge K. Cerebral arteriovenous malformations: Epidemiology and risk factors. LINC Course (Live Endovascular Neuroradiology Course) 2004. Houston, Texas, USA. October 10-14, 2004.

TerBrugge K. The future in endovascular management of intracranial aneurysms; Variable causes of intracranial aneurysms, implication for treatment. 4<sup>th</sup> Conference Course, Intracranial Aneurysms from Diagnosis to Treatment. Leiden, Netherlands. October 14-15, 2004.

TerBrugge K. Non-invasive imaging of the intracranial venous system. Neurovascular Anatomy Course. Phuket, Thailand. October 31-November 5, 2004.

TerBrugge K. Non-invasive imaging of the spinal and spinal cord venous system. Neurovascular Anatomy Course. Phuket, Thailand. October 31-November 5, 2004.

TerBrugge K. Animal models in interventional neuroradiology; Toronto panel review: Hydrocoil complications. ABC/WIN 2005. Val d'Isère, France. January 16-21, 2005.

TerBrugge K. The veno-architecture spectrum of intracranial dural AVFs, its clinical correlations and indications for endovascular treatment; Angioarchitectural analysis and hemorrhagic risk recognition of brain AVMs; Partial-targeted and palliative embolization of brain AVMs; The spectrum of intracranial AVMs in children; Natural history, indications, techniques, and results of endovascular treatment of incidentally detected and of symptomatic, non ruptured aneurysms; Local intra-arterial fibronolysis: indications, territories, techniques, results and outcome. 13<sup>th</sup> Zurich Course on Interventional Neuroradiology. Zurich, Switzerland. March 11-14, 2005.

Thomas K. Ionising radiation in pediatric imaging - a risk;benefit balance. Pediatric Update Conference, Toronto, May 2005

Toi A. Fetal head through gestation. Radiological Society of North America Meeting. Chicago, Illinois, USA. November 29, 2004.

Toi A. Fetal biometry for Ontario MSS and nuchal translucency programs. MSS Biochemistry Committee. Toronto, Ontario, Canada. December 14, 2004.

Toi A. Fetal brain maturation. OB and Radiology Fellowship Program. University of Toronto. Toronto, Ontario, Canada. December 20, 2004.

Traubici J. September 29, 2004, Renal Cystic Disease, Toronto, ON, 19<sup>th</sup> Annual Organ Imaging Review, Dept. of Medical Imaging, University of Toronto

White LM. MR imaging of the postoperative knee. 31st International Skeletal Society Annual Refresher Course. St Julian, Malta. October 7, 2004.

White LM. Optimization of MR imaging in the vicinity of orthopedic hardware. 31st International Skeletal Society Annual Refresher Course. St Julian, Malta. October 9, 2004.

White LM. MR imaging of the postoperative shoulder. Musculoskeletal Imaging Symposium: A Multidisciplinary Approach to the Upper Extremity. Toronto, Ontario, Canada. October 23, 2004.

White LM. Update in diagnostic imaging. Musculoskeletal MR imaging on the fringe: Imaging in the setting of orthopedic hardware. RSNA Refresher Course. 2004 Scientific Assembly and Annual Meeting of the Radiologic Society of North America. Chicago, Illinois, USA. November-December 2004.

White LM. Postoperative imaging of the musculoskeletal system: A systematic approach to imaging of the knee following prior arthroscopic surgery. Radiology Grand Rounds, Department of Radiology, North York General Hospital. North York, Ontario, Canada. December 15, 2004.

White LM. Visiting Professor. MR imaging assessment of the knee following meniscal and ligament surgery. Radiology Grand Rounds. Department of Radiology, Yale University Medical Center. New Haven, Connecticut, USA. April 14-15, 2005.

White LM. New horizons in musculoskeletal imaging. MR imaging of musculoskeletal system: Pitfalls and technique optimization. ISMRM Categorical Course Lecture. 2005 International Society in Magnetic Resonance in Medicine Scientific Meeting. Miami, Florida, USA. May 7-13, 2005.

White LM. MR imaging in the vicinity of metal hardware; Pre and post operative MR imaging of the knee meniscus; Pre and post operative MR imaging of the knee ligaments. International Skeletal Society Outreach Program. Latvia, Estonia, Lithuania. Riga Stradins University. Riga, Latvia. May 20-24, 2005.

Willinsky R. Complications of endovascular treatment of cerebral aneurysms. Shirahama Neurointerventional Complication Meeting. Shirahama, Japan. July 19-20, 2004.

Willinsky R. Non-saccular cerebral aneurysms: Vulnerability and management options. University of Tokushima. Japan. July 22, 2004.

Willinsky R. Dural fistula and aneurysm. Microvention Hydrocoil Users Group Meeting. Toronto, Ontario, Canada. September 9, 2004.

Willinsky R. Complication avoidance in aneurysm management; Management of paravertebral dural AVFs. 6<sup>th</sup> Annual Interventional Neuroradiology Symposium. Toronto, Ontario, Canada. September 10-11, 2004.

Willinsky R. Cerebral AVMs and HHT. 12<sup>th</sup> Annual HHT Conference. Arlington, Virginia, USA. October 22, 2004.

Willinsky R. Aneurysm Intervention Workshop. American Society of Interventional and Therapeutic Neuroradiology, 3<sup>rd</sup> Annual Practicum. Toronto, Ontario, Canada. May 20-22, 2005.

Willinsky R. Clinical complications in large and giant aneurysms. Linc Course Workshop. Foundation of Rothschild Hospital. June 30, 2005.

Wilson S. US biliar: A modern perspective; Microbubble contrast agents for ultrasound; Peritoneum ultrasound; Evaluating the intestine: Role of ultrasounds. Chilean Society of Radiology. Santiago, Chile. August 19-21, 2004.

Wilson S. Visiting Professor. Right lower quadrant pain; Not always acute appendicitis; Sonographic evaluation of the patient with AIDS; The adnexal mass: Is it malignant or is it

benign? Their use in liver mass characterization and detection. Focus on ultrasound. University of Wisconsin. Madison, Wisconsin, USA. September 30-October 1, 2004.

Wilson S. Microbubble imaging of focal liver lesions: Algorithms for diagnosis and concordance with CT/MR scans. Cesky Krumlov Radiologic Congress. Prague, Czech Republic. October 7-9, 2004.

Wilson S. Visiting Professor. Right lower quadrant pain: Sonographic assessment. University of Karlova. Cesky Krumlov, Czech Republic. October 2004.

Wilson S. Ultrasound contrast agents: Use in liver masses; The adnexal mass: Is it malignant or benign?; Acute abdomen of hollow visceral origin: Sonographic assessment. Ultrasound: The complete perspective. Montreal, Quebec, Canada. October 16-17, 2004.

Wilson S. Adnexal mass - Is it malignant or benign? Ontario Society of Diagnostic Medical Sonographers. Toronto, Ontario, Canada. November 6-7, 2004.

Wilson S. Significant liver masses. Ontario Society of Diagnostic Medical Sonographers. Toronto, Ontario, Canada. November 6-7, 2004.

Wilson S. Microbubble contrast agents for liver mass imaging: algorithms for diagnosis and concordance with CT and MR scan. 6<sup>th</sup> International Symposium on Ultrasound Contrast Imaging. Tokyo, Japan. December 11-12, 2004.

Wilson S. Visiting Professor. Microbubble contrast agents for liver imaging. Grand Rounds. Methodist Hospital. Dallas, Texas, USA. January 14, 2005.

Wilson S. The rectum and anal canal: Sonographic assessment. Twenty-Third Annual Practical Radiology at Whistler. Whistler, British Columbia, Canada. February 6-11, 2005.

Wilson S. US characterization of liver masses. Abdominal Radiology Course 2005. Scottsdale, Arizona, USA. 2005.

Wilson S. Visiting Professor. Right lower quadrant pain, not always acute appendicitis; Gut evaluation: Does sonography play a role?; Microbubble contrast agents for liver imaging; Adnexal pathology: Is it malignant or is it benign? University of Ottawa. Ottawa, Ontario, Canada. February 17-18, 2005.

Wilson S. Biliary sonography. Ultrasound/Women's Imaging. Boston, Massachusetts, USA. March 30-April 2, 2005.

Wilson S. Evaluation of patient with AIDS. Ultrasound/Women's Imaging. Boston, Massachusetts, USA. March 30-April 2, 2005.

Wilson S. Liver masses. Ultrasound/Women's Imaging. Boston, Massachusetts, USA. March 30-April 2, 2005.

Wilson S. Sonography of right lower quadrant pain; Adnexal pathology: Is it malignant or is it benign?; Significant liver masses on sonography. Australian Radiology Society, Brisbane chapter, Annual Meeting. Noosa , Australia. June 13, 2005.

Wilson S. Imaging of IBD (Ultrasound, MRI, CT and Nuclear Medicine). 9<sup>th</sup> Annual Coolumb Update in Gastroenterology and Hepatology. Coolumb, Australia. June 14, 2005.

Wu L. Gynecology Grand Rounds. MRI of the female pelvis. University of Toronto, December 2004.

Wu L. Department of Radiology, McMaster University. Cardiac MRI. Hamilton, December 2004.

Wu L. Basic Science Urology Conference, University of Toronto. Cross-sectional imaging of GU system. Toronto, February 2005.

Wu L. MRI with Q-Flow of V.M. in HHT: Prelim. Exp. (HHT 6<sup>th</sup>) April 2005.

Yoo, S-J. September 30- October 1, 2004. (1) “Pediatric cardiovascular MR, overview” (2) “MR evaluation of pulmonary circulation” (3) “Postoperative MR evaluation of congenital heart disease” (4) “Fetal cardiac screening”. Visiting Professor to Cincinnati Children’s Hospital

Yoo, S-J. November 11, 2004. “What’s new in pediatric cardiology” Sejong Heart Institute, Pucheon, Korea

Yoo, S-J. November 12, 2004. “Woonpa Memorial Lecture: MR evaluation of pulmonary circulation disorders” Seoul National University Hospital, Seoul, Korea

Yoo, S-J. November 15, 2004. “MR assessment of cardiac function in children” Asan Medical center, Seoul, Korea

Yoo, S-J. November 16, 2004. “MR evaluation of pulmonary circulation disorders” Yonsei University Hospital, Seoul, Korea

Yoo, S-J. November 16, 2004. “Future trends of pediatric cardiac imaging” Samsung Cheil Hospital, Seoul, Korea

Yoo, S-J. November 17, 2004. “Normal cardiac anatomy for imaging” Seoul National University Hospital, Seoul, Korea

Yoo, S-J. November 17, 2004. “Research cardiac MR projects at the Hospital for Sick Children in Toronto” Samsung Medical Center, Seoul, Korea

Yoo, S-J. December 1, 2005. “Case-based review, Pediatric, Cardiovascular” RSNA, Chicago

Yoo, S-J. January 21, 2005. “CMR versus CT for vascular anomalies” Society for Cardiovascular MR Annual Congress, San Francisco

Yoo, S-J. January 24-27, 2005. (1) “Normal cardiac anatomy for imaging” (2) “Sequential segmental analysis of congenital heart disease” (3) “Postoperative MR evaluation of congenital heart disease” (4) “Plain film interpretation of congenital heart disease” (5) “MR evaluation of pulmonary circulation” (6) “Evaluation of aortic arch anomalies” Visiting Professor to Lucile Packard Children’s Hospital, Stanford University, Palo Alto

Yoo, S-J. February 18, 2005. “Fetal cardiac screening” Refresher Course: Obstetric Ultrasound, Setting the Standard for 2005. University of Toronto, Toronto

Yoo, S-J. March 30-April 1, 2005. (1) “Normal cardiac anatomy for imaging” (2) “Sequential segmental analysis of congenital heart disease” (3) “Practicums” 3<sup>rd</sup> Society for Pediatric Radiology Symposium on Pediatric Cardiovascular MR. Toronto

Yoo, S-J. April 2-3, 2005. (1) “MR evaluation of pulmonary hypertension” “Preoperative MR evaluation of marginally hypoplastic left heart” 2005 Symposium on Advanced Pediatric Cardiovascular MR, Toronto

Yoo, S-J. May 7, 2005. “CTA and MRA in pediatrics: Clinical application, Workshop” 48<sup>th</sup> Annual Meeting and Postgraduate Course. Society for Pediatric Radiology, New Orleans

Yoo, S-J. May 30, 2005. “Who should do CT scan rather than MRI?” 1<sup>st</sup> Annual Toronto Symposium: Contemporary questions in congenital heart disease, Toronto

Zalev AH. Series of GI Lectures. Queen’s University. Kingston, April 6-8, 2005.



## SCIENTIFIC PRESENTATIONS: PEER-REVIEWED PAPERS, POSTERS AND EXHIBITS

Aloui-Kasbi N, Oudjhane K, Hammou A. Osteoporose Idiopathique Juvenile. Journal de Pediatrie et de Puericulture . 2004: 17: 24-27.

Altaf N, Daniels L, Beech A, Gladman J, Morgan PS, MacSweeney ST, Moody, AR and Auer DP. Magnetic Resonance Direct Thrombus Imaging of the carotid plaque is associated with increased thromboembolization. ISMRM Miami 2005.

Ashley Robinson, Susan Blaser, Ants Toi, David Chitayat, Sarah Keating, Greg Ryan, Sandra Viero. MR Imaging of the Fetal Eyes: Examples of Abnormal Biometry and Development, with Ultrasonographic and Clinicopathologic Correlation. Society for Pediatric Radiology. 2005; 35, S01: S53.

Agid R, Reintamm G, Armstrong D, Dirks P, terBrugge K. The role of endovascular treatment for paediatric aneurysms. The 56<sup>th</sup> Annual meeting of the Scandinavian Neurosurgical Society. Reykjavik, Iceland. July 2004.

Agid R, Souza MPS, Montanera W, Willinsky RA, terBrugge KG, Marotta TR. Early report of microstent-assisted coiling for wide necked intracranial aneurysms. The 56<sup>th</sup> Annual meeting of the Scandinavian Neurosurgical Society. Reykjavik, Iceland. July 2004.

Agid R, Reintamm G, Armstrong D, Dirks P, terBrugge KG. Endovascular versus surgical treatment for paediatric aneurysms. The Annual Meeting of the Israel Radiological Associations. Eilat, Israel. October 2004.

Agid R, Reintamm G, Armstrong D, Dirks P, Lee SK, terBrugge K. (Poster) Pediatric aneurysm: characteristics and the role of endovascular treatment. 8<sup>th</sup> Joint Meeting of the AANS/CNS Cerebrovascular Section and the Society of Interventional & Therapeutic Neuroradiology. New Orleans, Louisiana, USA. February 1-4, 2005. *Interventional Poster Award*

Agid R, Farb R, Willinsky R, Mikulis D, Tomlinson G. Idiopathic intracranial hypertension: The validity of cross-sectional neuro imaging signs. 43<sup>rd</sup> Annual Meeting of the American Society of Neuroradiology. Toronto, Ontario, Canada. May 21-27, 2005.

Aviv RI, O'Neill R, Patel M, Collqhoun I - Abciximab in the first line treatment and prevention of thromboembolism in patients with ruptured aneurysms  
ASNR, Toronto, May 2005

Aviv RI, Farb RI, Scott J, Willinsky RA, TerBrugge KG - ATECO MRV of the venous system.  
RSNA November 2004

Aviv RI, Benseler SM, deVeber GA, Tsang LM, Tyrell PN, Armstrong D - Childhood primary vasculitis of the CNS: Conventional angiographic appearance and comparison with MR angiography. BSNR Cambridge September 2004

Aviv RI, Farb RI, Scott J, Willinsky RA, TerBrugge KG - Variations of the intracranial venous system on ATECO MR venography. RSNA November 2004 (computer exhibit)

Aviv RI, Benseler SM, deVeber GA, Tsang LM, Tyrell PN, Armstrong D - The appearance and correlation of MRI and MRA in primary CNS vaculitis of childhood, BSNR Cambridge, September 2004

Aviv RI, Jafri Z, Kendall B, Thakkar C, Valentine A - Prevalence of cavum septi pellucidi in boxers: Is it a sign of damage? ASNR, Toronto, May 2005

Baerlocher MO, Asch MR, Rajan DK, Hayeems EB. (Poster) Uterine fibroid embolization-inpatient vs. outpatient: A comparison of cost, safety and patient satisfaction. Society of Interventional Radiology Annual Scientific Meeting. New Orleans, Louisiana, USA. March 2005.

Baerlocher MO, Asch MR, Hayeems EB. (Poster) Current issues of interventional radiology in Canada: A survey by the Canadian Interventional Radiology Association. Society of Interventional Radiology Annual Scientific Meeting. New Orleans, Louisiana, USA. March 2005.

Baerlocher MO, Asch MR, Hayeems EB. Attitudes of and influences on Canadian radiology residents toward interventional radiology: A national survey. Society of Interventional Radiology Annual Scientific Meeting. New Orleans, Louisiana, USA. March 2005.

Barbeau EJ, Taylor MJ, Regis J, Chauvel P, Liegeois-Chauvel C. Early ERPs specific to faces: intracerebral measures recorded from the human visual cortex. Human Brain Mapping, Toronto, Canada, June 2005.

Bartlett E.S., Symons SP, Fox AJ. (SRA) - Cross-sectional mm<sup>2</sup> area of carotid stenosis CT angiography. ASNR, May 2005, Toronto, ON, Canada.

Bartlett E.S., Walters T.D., Symons S.P., Fox A.J.(SRA) - Identification of carotid near occlusion by CT angiography. ASNR, May 2005, Toronto, ON, Canada.

Bartlett E.S., Walters T.D., Symons S.P., Fox A.J.(SRA) - Direct CT angiographic measurements of vessels alleviates cumbersome estimates of ratio calculations. ASNR, May 2005, Toronto, ON, Canada.

Bartlett E.S., Walters T.D., Symons S.P., Fox A.J.(SRA) - Validity of millimetre carotid stenosis CT angiography measurements for endarterectomy. ASNR, May 2005, Toronto, ON, Canada.

Bayle D, Bolher K, Deltheil T, Latinus M, Taylor MJ. Early effects of familiarity in face processing. Human Brain Mapping, Toronto, Canada, June 2005.

Betel CB, Dill-Macky MJ. (Exhibit) Breast MRI: How and why. American Roentgen Ray Society Meeting. New Orleans, Louisiana, USA. May 2005.

Bhojani FD, Jaffer NM, McLeod R, Margolis M, Cohen Z. Ileo-anal pouch procedure: anatomy, imaging, and complications. Radiological Society of North America Meeting. Chicago, Illinois, USA. November 5, 2004.

Bitar R, Leung G, Crisp S, Sahlas DJ, Gladstone D, Maggisano R, Nelson A, Moody A Asymptomatic aortic and supra-aortic complicated plaque identified by Magnetic Resonance Direct Thrombus Imaging in patients investigated for carotid disease. ISMRM Miami 2005.

Bitar R, Leung G, Crisp S, Nelson A, Moody A. Application of Magnetic Resonance Direct Thrombus Imaging to the renal vessel wall. ISMRM Miami 2004.

Bitar R, Leung G, Perng R, Tadros S, Moody AR, Sarrazin J, McGregor C, Symons S, Christakis M, Nelson A, Roberts T. What Every Radiology Resident Wants To Know ... But Is To Afraid To Ask ... About MR Pulse Sequences. RSNA 2004 Poster selected for Category 1 – Program. Award for Excellence in Design.

Blaser S, Moore A, Propst E, Shroff M, Papsin B. MRI of kernicterus in sensorineural hearing loss. 42nd ESPR Congress, June 1st - 3rd 2005, Dublin.

Blaser S, Moore A, Propst E, Shroff M, B Papsin. .MRI of Kernicterus in Sensorineural Hearing Loss. 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin.

Blaser S. L. Ford-Jones. M. van der Knapp. A. Licup. B. Papsin. Identification of CMV Related Brain Changes on MRI in Patients Being Evaluated for Sensorineural Hearing Loss. 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Blaser S. Laughlin S. Fanning N. Parmar H. Propst E. L. Ford-Jones. B. Papsin. Imaging Features of Ossifying Labyrinthitis: CT and MRI. 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Blaser S, Laughlin S, Fanning N, Parmar H, Propst E(1). L. Ford-Jones. B. Papsin. Imaging Features of Ossifying Labyrinthitis: CT and MRI.42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Blaser SI. Radiologic findings in children who have hearing loss: New findings on MRI of the brain in association with MRI of the temporal bone. Nalli Day, University of Toronto, February 17, 2005

Blaser S, Robinson A, Branson, H Halliday W, Shannon P, McAuliffe F, Fink M, Chadrycki E, Chitayat D, Raybaud C. Useful signs in the diagnosis of rhombencephalo-synapsis, a summary of neuroimaging features of 14 patients. 42nd ESPR Congress, June 1st - 3rd 2005, Dublin

Blaser SI, Robinson AJ, Toi A, Chitayat D, Gundogan M, Pantazi S, Laughlin S, Ryan G. MR imaging of the fetal cerebellar vermis in utero: Description of some useful anatomical criteria for normal development. American Society of Human Genetics. Toronto, Ontario, Canada. October 26-30, 2004.

Boylan CE, Causar PA, Jong, RA, Curpen B, Hill K, Warner E, et al. Correlation of Mammographic Breast Density with Screening Breast Ultrasound Detection of Breast Cancer in a High-Risk Population. RSNA Annual Meeting, Chicago, Illinois November 29, 2004

Boylan CE, Causar P, Jong RJ, et al. Correlation of mammographic breast density with screening breast ultrasound detection of breast cancer in a high-risk population. December 2004: RSNA meeting, Chicago Illinois

Branson H, Robinson A, Blaser S, Toi A, Chitayat D, Gundogan M, Pantazi S, Ryan G. MR imaging of the fetus in utero I: A practical guide to systematic analysis - Central nervous system. American Society of Human Genetics. Toronto, Ontario, Canada. October 26-30, 2004.

Branson H, Robinson A, Hawkins C, Blaser S. Radiologic/Pathologic Correlation of Pediatric Cerebellar Abnormalities: A Pictorial Review. RSNA 90<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago Nov 28-Dec 3, 2004

Branson H, Robinson A, Hawkins C, Gasparini F, Chadrycki E, Blaser S. The cerebellum: A pictorial review of normal development and how interruption in this pathway results in posterior fossa abnormalities in childhood. ESPR Heidelberg, June 7-11, 2004

Cartwright L, Cheng M, Chen J, Sherman C, Yeger H, Babyn P, Farhat W. Dynamic magnetic resonance imaging: a non-invasive method to assess progress of neovascularization in tissue engineered bladder constructs. American Academy of Pediatrics National Conference and Exhibition; San Francisco, USA, October 2004

Cartwright L, Farhat W, Sherman C, Chen J, Yeger H, Babyn P, Cheng HLM. Tissue engineered bladder neovascularization is enhanced with VEGF and quantifiable with dynamic contrast-enhanced MRI. 52<sup>nd</sup> Annual James C. Kimbrough Urological Seminar; Honolulu, USA, January 2005

Chait P, Cohen J, Amaral J, Temple M, Connolly B, John P. Esh IGT – A database designed for interventional radiology. The Society for Pediatric Radiology, New Orleans, Louisiana, May 2005

Chait P, Greenbaum Z, Amaral J, Connolly B, Temple M, Fontalvo L. Infection following percutaneous image-guided retrograde gastrostomy insertions in children with ventriculoperitoneal shunts. The Society for Pediatric Radiology, New Orleans, Louisiana, May 2005

Chait P, Rico L, Amaral J, Connolly B, John P, Temple M. Ultrasound-guided core biopsy of mediastinal masses in children. The Society for Pediatric Radiology, New Orleans, Louisiana, May 2005.

Chait P, Sklaar C, Rosenberg J, Amaral J, Connolly B, Temple M, Fontalvo L. Gastrostomy(G) and Gastrojejunostomy(GJ) in neonates and children with congenital abdominal defects. The Society for Pediatric Radiology, New Orleans, Louisiana. May 2005.

Chait P, Verbeeten K, Amaral J, Connolly B, Temple M, John P. Central venous catheter (CVC)-related venous thrombosis in the hematology-oncology pediatric population. The Society for Pediatric Radiology, New Orleans, Louisiana. May 2005

Chait PG, Kreichman F, Connolly B, Temple M, John P, Forte V, Friedberg J, Amaral J. Minimally Invasive Occlusion of Recurrent Tracheo-Esophageal Fistulae. Cardiovascular and Interventional Radiological Society of Europe, Barcelona Spain. September 2004.

Chait PG, Kreichman F, Connolly B, Temple M, John P, Forte V, Friedberg J, Amaral J. Percutaneous Gastrostomies In Newborns with Pure Esophageal Atresia. Cardiovascular and Interventional Radiological Society of Europe, Barcelona Spain. September 2004.

Chait PG, Leung R, Amaral J, Smith C, Connolly B, Temple M, John P, Fontalvo L. Ultrasound-Guided Core Biopsy of Mediastinal Masses in Children. ARRS, New Orleans, Louisiana. May 2005.

Chait PG. Ventricular Peritoneal Shunt (VP) Infection Post Percutaneous Retrograde Gastrostomy in Children with VP Shunts. SIR 30<sup>th</sup> Annual Scientific Meeting. New Orleans, LA. April 2005.

Chan RP. Interventional Radiology for Surgeons: How Radiology Can Help You. Principles of Surgery Lecture Series. Department of Surgery, University of Toronto. September 28, 2004, Toronto, Ontario.

Chan RP. Radiology of the Pelvis and Genitourinary System. Year 1 Medical students, Radiological Anatomy Lecture Series. Faculty of Medicine, University of Toronto, September 29, 2004, Toronto, Ontario.

Chan RP, Zukotynski KA, Chow CM, Cohen JH & Faughnan ME. Contrast Echocardiography Grading Predicts Pulmonary Arteriovenous Malformations at Computed Tomography. Presented 6<sup>th</sup> International HHT Scientific Conference. April 22-24, 2005. Lyon, France.

Cheng HLM, Chen J, Babyn PS, Farhat WA. Dynamic contrast-enhanced MRI for quantifying VEGF-enhanced neovascularization in tissue-engineered bladder constructs. 13<sup>th</sup> Scientific Meeting of the International Society of Magnetic Resonance in Medicine; Miami, USA, May 2005.

Cheng HLM, Purcell CM, Bilbao JM, Plewes DB. Contrast kinetics for improved prediction and assessment of thermal necrosis. 5<sup>th</sup> Interventional MRI Symposium; Boston, USA, October 2004.

Cheng HLM, Wright GA. Rapid T1 mapping by variable flip angles: analytic expression for B1-error influences and optimization for large T1 range. 13<sup>th</sup> Scientific Meeting of the International Society of Magnetic Resonance in Medicine; Miami, USA, May 2005.

Cheyne D, Itier RJ, Hamilton A, Taylor MJ. Localization of cortical activity during face perception using event-related synthetic aperture magnetometry. Human Brain Mapping, Toronto, Canada, June 2005.

Chitayat D, Robinson A, Blaser S, Toi A, Gundogan M, Pantazi S, Ryan G. MR imaging of the fetal eyes: Normal and abnormal development. American Society of Human Genetics. Toronto, Ontario, Canada. October 26-30, 2004.

Chung TB, Paul N, Rao AT, Patsios DA, Roberts H, Weisbrod G. (Poster) Pitfalls of thoracic CT: normal anatomical structures that can simulate disease. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Coret-Simon J, Halliday WC, Kassel EE. (Exhibit) The central skull base: A spectrum of pathologies with radiological-histological correlation. American Society of Head and Neck Radiology, 38th Annual Meeting and Symposium. Philadelphia, PA, USA. September 29-October 3, 2004. *Scientific Exhibit Award - 2nd Prize*

Common AA. Inside the Lumen: Imaging and Intervention in the Problematic Access. Access to Science in Hemodialysis Conference. Toronto, Ontario, June 20, 2005.

Couwenhovena M, Sehnerta W, Wanga X, Dupina M, Wandtkeb J, Donc S, Krausc R, Paul N, Haline N, Sarno R. Observer study of a noise suppression algorithm for computed radiography images. 1<sup>st</sup> World Congress of Thoracic Imaging and Diagnosis. Florence, Italy. May 7-11, 2005.

Couwenhoven M, Schnert WJ, Wang X (Kodak), Paul N. Observer study of a noise suppression algorithm for computed radiography images. (MI5749-36) SPIE Medical Imaging: Imaging Perception, Observer Performance and Technology Assessment. San Diego, California, USA. February 17, 2005.

Crean A, Provost Y, Paul N, Merchant N. Coronary artery anomalies: 5-year retrospective experience with everyday CMR sequences. Society for Cardiovascular Magnetic Resonance Meeting. San Francisco, California, USA. January 21-23 2005.

Daneman A. Neonatal Acute Adomen. Organ Imaging Review Course, Department of Medical Imaging, University of Toronto, Toronto, Ontario, September 29, 2004.

Daniels, L., Altaf, N., Morgan, P., MacSweeney, S., Moody, A., Auer, D., Gladman J. - Natural history of complicated carotid plaque detected by MRI in symptomatic moderate carotid artery stenosis. European stroke conference, Bologna 2004

Dasgupta R, Langer JC, Connolly B. Use of an integrated radiologic and surgical suite for splenic embolization and laparoscopic resection. American College of Surgeons, New Orleans, LA. October 2004

Davies CL, Wu L, Hogan, Deitel WL. “Contrast Enhanced MRI vs. Hysterosonogram in Evaluation of Endometrial Abnormalities.” ARRS Annual Meeting May 15-20, 2005. New Orleans.

Dill-Macky MJ. (Exhibit) Breast MRI: Techniques and protocols. American Roentgen Ray Society Meeting. New Orleans, Louisiana, USA. May 15-20, 2005. *Bronze Medal Winner*

Dill-Macky MJ, Asch M, Burns P, Wilson S. Radiofrequency ablation of hepatocellular carcinoma: Predicting success using contrast enhanced ultrasound. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting. Florence, Italy. May 28-31, 2005.

Dinniwell R, Haider MA, Chan P, Milosevic M, Fyles A, Jaffray D. (Poster) Pelvic lymph node nomenclature and anatomy for intensity modulated radiotherapy treatment planning in genitourinary and gynecological malignancies. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004. *Award for Excellence in Design*

Donner EJ, Evans JW, Malone S, Taylor MJ, Logan WJ. Atypical language lateralization in children with epilepsy: an fMRI study. American Society of NeuroRadiology, Toronto, Canada, May 2005.

Donner EJ, Logan WJ, Evans JW, Taylor MJ, Pang EW. Concordance of fMRI and MEG for language lateralization in children with epilepsy. Human Brain Mapping, Toronto, Canada, June 2005.

Doyle DJ, Hanbidge AE, O’Malley ME. Imaging hepatic infections. Annual Spring Meeting, Faculty of Radiologists RCSI. Dublin, Ireland. April 2005.

Elliott T, Provost Y, Paul N, Merchant N, Crean AM. (Exhibit) Delayed enhancement imaging of the heart: more than just myocardial infarction. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Epelman M, Daneman A, Kellenberger C, Aziz A, Konen O, Blaser S. State-of-the-Art Imaging of Hypoxic-Ischemic Encephalopathy (HIE) with Emphasis on High Resolution Sonography (HRS) RSNA 90<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago Nov 28-Dec 3, 2004 (Certificate of Merit)

Epelman M, Daneman A, Kellenberger CJ, Aziz A, Konen O, Whyte H, Jarrin J, Shroff M, Blaser, SI. Hypoxic-Ischemic Encephalopathy: A Prospective Comparison of “State-of-the-Art Ultrasound” and MR Imaging: Can Ultrasound Compete with MR Imaging? ASNR 42<sup>nd</sup> Annual Meeting, Seattle, June 5-11, 2004.

Epelman M, Daneman A, Ortiz C, Blaser S, Jarrin J, Konen O. The Differential Diagnosis of Intracranial (IC) Cystic Lesions on Head Ultrasound (HUS) RSNA 90<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago Nov 28-Dec 3, 2004. (certificate of Merit)

Fanning N, Laffan E, Shroff M. Serial diffusion-weighted MR imaging correlates with clinical course in children with intracranial pus collections. Presented at ESPR, Dublin, Ireland. June 2005.

Fanning NF, Walters TD, Symons S, Fox A (C) - Relationship between carotid artery bifurcation calcification and white matter changes. ASNR, May 2005, Toronto, ON, Canada.

Farb RI, Baryshnik D. Disorders of intracranial pressure: The dynamic appearance of the dural venous sinuses. 43<sup>rd</sup> Annual Meeting of the American Society of Neuroradiology. Toronto, Ontario, Canada. May 21-27, 2005.

Fong KW, Shin V, Toi A, Tomlinson G. (Poster) Patient factors affecting the quality of routine second trimester obstetrical ultrasound images. 14<sup>th</sup> World Congress on Ultrasound in Obstetrics & Gynecology. Stockholm, Sweden. September 1-4, 2004.

Fong KW, McAuliffe F, Toi A, Chitayat D, Keating S, Johnson J. Ultrasound detection of fetal anomalies in the first trimester in conjunction with nuchal translucency screening. American Institute of Ultrasound in Medicine Annual Convention. Orlando, Florida, USA. June 19-22, 2005.

Fontalvo L, Connolly B, Amaral J, Chait P, John P, Temple M, Smith CR. Ultrasound guided biopsy of pulmonary lesions in children. European Society of Paediatric Radiology, Dublin, Ireland. June 2005

Fontalvo L, Connolly B, Amaral J, Chait P, John P, Temple M, Smith CR. Ultrasound guided biopsy of pulmonary lesions in children. European Society of Paediatric Radiology, Dublin, Ireland. June 2005.

Fontalvo LF, Connolly B, Amaral J, Chait P, Temple M, John P. Ultrasound Guided Biopsy of Pulmonary Lesions in Children. SIR 30<sup>th</sup> Annual Scientific Meeting. New Orleans, LA. April 2005.

Furnival J, Ryan G, Kingdom J, Toi A, Keating S, Tellier R, Meschino W. Increased nuchal translucency: A marker of fetal parvovirus? American Society of Human Genetics. Toronto, Ontario, Canada. October 26-30, 2004.

Gaetz W, Robaey P, Schachar R, Cheyne D. Neuromagnetic imaging of self-initiated vs. visually cued movements. 14th International Conference on Biomagnetism, Boston, USA, 2004.

Gaetz W, Sutcliffe T, Logan WJ, Shroff M, Fehlings DL, Cheyne D (2005). MEG and fMRI localized changes in cortical organization following constraint-induced therapy: A case study



involving hemiplegic cerebral palsy. Presented at the Organization for Human Brain Mapping 11th Annual Meeting, Toronto, Ontario, Canada. June 12-16, 2005

Gaetz WC, Sutcliffe TL, Logan WJ, Shroff M, Fehlings DL, Cheyne D. Measurement of sensorimotor cortical function following constraint-induced therapy in a child with hemiplegic cerebral palsy using magnetoencephalography and functional MR imaging. Presented at ASNR. Toronto, Canada. May 2005.

Gasparini F, Branson H, Shroff M, Ibrahim M, Drake J, Heddon D, Blaser S. A pictorial review of the most serious causes of back pain in children. ESPR Heidelberg, June 7-11, 2004

Gasparini F, Papsin B, Shroff M, Friedberg J, Padfield N, Blaser S. Duplication of the internal auditory canal (IAC). 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Gasparini F, Papsin B, Shroff M, Friedberg J, Padfield N, Blaser S. Duplication of the Internal Auditory Canal (IAC). Society for Ear, Nose and Throat Advances in Children (SENTAC), Toronto, December 2-5, 2004

Gasparini FF, Navarro O, Dasgupta R, Gerstle T, Thorner P, Manson DE. Ileocolic intussusception causing duodenal obstruction mimicking the imaging appearance of malrotation complicated with volvulus. Dublin, Ireland, 42nd Annual Congress of the European Society of Pediatric Radiology, June 1, 2005

Gasparini FF, Navarro OM, Dasgupta R, Gerstle T, Thorner P, Manson DE. Ileocolic Intussusception Causing Duodenal Obstruction Mimicking the Imaging Appearance of Malrotation Complicated with Volvulus. The European Society of Pediatric Radiology, Dublin, Ireland, May 30-June 3, 2005.

Ghada V, Ederies A, Aviv RI - Stroke Mimics ASNR 2005, May 2005, Toronto

Ghai S, Fong K, Toi A, Blaser A, Pai A, Chitayat D. (Poster) Prenatal ultrasound findings in lissencephaly. American Society of Human Genetics. Los Angeles, California, USA. November 4-8, 2004.

Gianfelice D. MRI guided focused ultrasound (MRIgFUS) of breast carcinoma. American College of Radiology Imaging Network. Pentagon City, Arlington, Virginia, USA. October 9, 2004.

Gianfelice D. Workshops. Next generation CT; Advanced MR imaging. GE Healthcare: A New Chapter in Healthcare Technology, Innovation Symposium. Montreal, Quebec, Canada. October 18, 2004.

Gianfelice D. Recent developments in CT guided diagnostic & therapeutic abdominal intervention. 6<sup>th</sup> Annual Multi-Slice Helical CT 2005: Basics to Advanced. The Venetian, Las Vegas, Nevada, USA. May 5-7, 2005.

Gianfelice D. New concepts in thoracic intervention: Materials, methods & pearls. 6<sup>th</sup> Annual Multi-Slice Helical CT 2005: Basics to Advanced. The Venetian, Las Vegas, Nevada, USA. May 5-7, 2005.

Gianfelice D. Clinical CT fluoroscopy: Advantages in specific clinical situations. 6<sup>th</sup> Annual Multi-Slice Helical CT 2005: Basics to Advanced. The Venetian, Las Vegas, Nevada, USA. May 5-7, 2005.

Glanc P. – The Fetal Musculoskeletal System: Obstetrical Ultrasound: Setting the Standard for 2005. Feb. 21 & 23, 2005, University of Toronto, Ontario

Glanc P, Chitayat D, Toi A, Salem S, Unger SL - RSNA Education Exhibits - 2004 Category 1 Program (CME credits – lecture and poster presentation) ID: 4403183. Invitation to publication Radiographics and Certificate of Merit. Education Exhibit: Awarded Certificate of Merit. Lethal Fetal Skeletal Dysplasias: A Key Features Algorithmic Approach RSNA 2004 The RSNA 90th Scientific Assembly and Annual Meeting. Nov 28-December 3, 2004 McCormick Place Chicago.

Glanc P, Fong K, Umranikar S, Betel C, Atri M, Salem S. Cervical ectopic pregnancies: Diagnosis and management. American Institute of Ultrasound in Medicine Annual Meeting. Orlando, Florida, USA. June 19-22, 2005.

Glanc P, Koff D, Dunn M, Elliott G, Volkening A, Marafioti S. - “Implementation of a Web-Enabled Neonatal Unit Teleradiology Network”. The American Roentgen Ray Society 105<sup>th</sup> Annual Meeting. Electronic poster. New Orleans, May 2005

Glanc P, Ryan G, Salem S, Windrim P (Co Directors). - Obstetrical Ultrasound: Setting the Standard for 2003, February 18 -20, 2005 University of Toronto, Toronto. Co-sponsored U of T Dept. Medical Imaging & Obstetrics & Gynaecology.

Glanc P, Salem S, Farine D, Khalifa M. Maternal adnexal masses: A diagnostic and management challenge. American Roentgen Ray Society Annual Meeting. New Orleans, Louisiana, USA. May 16-19, 2005.

Glickman A, White LM, Zhang Z, Roberts T, Miniaci A. (Scientific Exhibit). MR perfusion imaging of anterior cruciate ligament autografts. 2004 Scientific Assembly and Annual Meeting of the Radiologic Society of North America. Chicago, Illinois, USA. November-December 2004. *RSNA Resident Research Award Musculoskeletal Radiology RSNA 2004*

Greenbaum Z, Chait P, Amaral J, Connolly B, Temple M, John P, Fontalvo L, Krishnamurthy G. Ventricular peritoneal shunt (VP) infection following percutaneous image-guided retrograde gastrostomy insertions in children with ventricular peritoneal shunts. American Roentgen Ray Society, New Orleans, Louisiana. May 2005

Greenbaum Z, Chait P, Amaral J, Connolly B, Temple M, John P, Fontalvo L, Krishnamurthy G. Ventricular peritoneal shunt (VP) infection following percutaneous image-guided retrograde

gastrostomy insertions in children with ventricular peritoneal shunts. American Roentgen Ray Society, New Orleans, Louisiana. May 2005.

Greenbaum Z, Chait PG, Amaral J, Connolly B, Temple M, John P, Fontalvo L, Krishnamurthy G. Ventricular Peritoneal Shunt Infection Following Percutaneous Image-Guided Retrograde Gastrostomy Insertions in Children with Ventricular Peritoneal Shunts. ARRS, New Orleans, Louisiana. May 2005.

Guo G, Wu R, Lin R, terBrugge K, Mikulis DJ. (Poster) Optimization of velocity encoding for cerebral blood flow quantification using phase-contrast MR angiography. 43<sup>rd</sup> Annual Meeting of the American Society of Neuroradiology. Toronto, Ontario, Canada. May 23-27, 2005.

Haider MA, Kale A, Sitartchouk I, Roberts T, Reihnold C, Trachtenberg J, Toi A. Dynamic contrast-enhanced MRI for assessment of locally recurrent prostate cancer after radiation therapy. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Haider MA, Toi A, Bloch BN, Degani H, Furman-Haran E, O'Malley E, Trachtenberg J, Sweet JM. Correlation of prostate biopsy and three time point dynamic contrast enhanced MRI (3T MRI) in men at high risk for prostate cancer (PCa). United States and Canadian Academy of Pathology Annual Meeting. San Antonio, Texas, USA. February 26-March 4, 2005.

Haider MA, Toi A, Sweet J, Kale A, Bloch A, Trachtenberg J. Washout dynamic contrast enhanced versus T2 weighted MR imaging prior to transrectal ultrasound biopsy in patients at high risk for prostate cancer. European Congress of Radiology. Vienna, Austria. March 4-8, 2005.

Hanbidge A, O'Malley M, Wilson S. Imaging of Budd-Chiari Syndrome. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting and Postgraduate Course. Florence, Italy. May 28-31, 2005.

Hayeems EB, Asch MR, Beecroft JR, Kachura JR, Rajan DK, Simons ME, Sniderman KW. Multi-centre experience with the recovery IVC filter. Society of Interventional Radiology Annual Scientific Meeting. New Orleans, Louisiana, USA. March 30-April 5, 2005.

Ho CS, Kachura J, Gallinger S, Grant D, Greig P, Knox J, Sherman M, Wong F, Wong D. Ethanol injection of medium to large hepatomas using a multi-prong needle: efficacy and safety. Cardiovascular and Interventional Radiological Society of Europe Annual Meeting. Barcelona, Spain. September 25-29, 2004.

Ho CS, Kachura J, Gallinger S, Grant D, Greig P, Sherman M, Wong D, Wong F. Percutaneous injection of ethanol using a multi-prolonged needle: a new approach to treatment of hepatocellular carcinoma (HCC). 6<sup>th</sup> Asia-Pacific Congress of Cardiovascular and Interventional Radiology. New Delhi, India. November 3, 2004.

Ho CS, Kachura J, Gallinger S, Greig P, Sherman M, Wong F. Percutaneous ethanol injection of medium and large hepatomas using a multi-pronged needle: efficacy and safety. Radiological Society of North America Annual Meeting. Chicago, Illinois, USA. November 29, 2004.

Ho CS. Alcohol treatment of hepatomas. American Hepato-Pancreatic Biliary Association (AHPBA). Fort Lauderdale, Florida, USA. April 2005.

Ho CS. Radiologic management of hepatolithiasis. American Hepato-Pancreatic Biliary Association(AHPBA). Fort Lauderdale, Florida, USA. April 2005.

Hurwitz G. Non-invasive evolutionary coronary artery disease. Continuing Education: CAFP accredited. Kitchener March 2005.

Ibrahim M, Shroff M, Blaser S, Gasparini F, Chuang S. T1-weighted Fluid-attenuated Inversion Recovery Sequence in the Assessment of Normal Brain Maturation in Children RSNA 90<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago Nov 28-Dec 3,2004, 2004

Iijima H, Burns PN, Kim TK, Jang HJ, Dill-Macky M, Wilson SR. Maximum intensity projection imaging of liver tumor vascularity: Feasibility and success. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Itier RJ, Herdman AT, Picton TW, Taylor MJ. Inversion and contrast-reversal effects on early face processing assessed by MEG. BioMag, Boston, USA, August 2004.

Jarrín J, Daneman A, Babyn PS, Epelman MS, Navarro OM. Ultrasound of the neonatal brain: a comprehensive illustrated guide – a multimedia CD-Rom-based teaching file. The Society for Pediatric Radiology 48<sup>th</sup> Annual Meeting, New Orleans, Louisiana, May 4-7, 2005

Jang HJ, Kim TK, Wilson SR. (Poster) Nodules in liver cirrhosis: The added benefit of contrast-enhanced ultrasound to standard imaging techniques. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Jang HJ, Kim TK, Wilson SR. Characterization of hepatic nodules in patients at high-risk for hepatocellular carcinoma with contrast-enhanced ultrasound. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Jang HJ, O'Malley MO, Kim TK, Haider MA, Khalili K, Hanbidge AE. (Poster) Lesions and pseudolesions related to hepatic steatosis: pictorial review. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Jang HJ, Kim TK, Wilson SR. (Exhibit) Nodules in liver cirrhosis: The added benefit of contrast-enhanced ultrasound to standard imaging techniques. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004. *Certificate of Merit*

Jang HJ, Kim TK, Murphy-Lavallee J, Burns PN, Wilson SR. Enhancement patterns of nodular hepatocellular carcinoma on contrast-enhanced ultrasound - contribution of extended portal

phase evaluation. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting. Florence, Italy. May 28-May 31, 2005.

Jhaveri K, Chawla T, Toi A, Jarvi K. (Poster) Imaging in male infertility. American Roentgen Ray Society Annual Meeting. New Orleans, Louisiana, USA. May 16-19, 2005.

Jhaveri K. CT histogram analysis in characterizing indeterminate adrenal nodules (>10 HU) and its comparison to chemical shift MRI. American Roentgen Ray Society Annual Meeting. New Orleans, Louisiana, USA. May 16-19, 2005.

Jhaveri K. CT angiography for endoleak: What is the optimal Ct protocol? American Roentgen Ray Society Annual Meeting. New Orleans, Louisiana, USA. May 16-19, 2005.

John P. A 6-Year Review of Interventional Pediatric - Infants (less than 1.5Kg): Complications, Lesson Learning & Current Practice. 42nd Annual Congress of the European Society of Pediatric Radiology 2005

John P. Image Guided Drainage of Multiple Intravenous. 42nd Annual Congress of the European Society of Pediatric Radiology 2005

John P. Image Guided Percutaneous biopsy/bone and soft tissue lesion in Children. 42nd Annual Congress of the European Society of Pediatric Radiology 2005

John P. Image Guided Therapy of Pulmonary Lesions in Children. 42nd Annual Congress of the European Society of Pediatric Radiology 2005

Kachura JR, Windrim RC, Kingdom JC. Efficacy of uterine artery balloon-occlusion and embolization in pregnancies complicated by placenta percreta and placenta previa. Cardiovascular and Interventional Radiological Society of Europe Annual Meeting. Barcelona, Spain. September 25-29, 2004.

Kassner A, Roberts TPL, Taylor K, Silver F, Mikulis DJ. Prediction of hemorrhagic transformation in acute ischemic stroke using dynamic contrast-enhanced permeability MR imaging. 43<sup>rd</sup> Annual Meeting of the American Society of Neuroradiology. Toronto, Ontario, Canada. May 23-27, 2005.

Kawa E, Perrotte P, Gianfelice D, Perreault P, Bénard F, McCormack M, Truong F, Côté J, Karakiewicz P. Percutaneous radiofrequency thermal ablation of renal masses in high surgical risk patients: Université de Montréal CHUM preliminary results. 29<sup>e</sup> Congrès Annuel de l'Association des Urologues du Québec. Québec, Canada. 12-14 Novembre 2004.

Khalili K, Roach S, Khalili M. Changes in splenic volume and correlation with platelet counts in liver donors. European Congress of Radiology. Vienna, Austria. March 4-8, 2005.

Kim TK, Jang HJ, Burns PN, Wilson SR. Introduction of contrast-enhanced hepatic ultrasound into routine clinical practice. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Kim TK, Jang HJ, Burns PN, Murphy-Lavallee J, Wilson SR. (Exhibit) Focal nodular hyperplasia and hepatic adenoma: differentiation with microbubble-enhanced low-MI real-time pulse-inversion ultrasound. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting. Florence, Italy. May 28-May 31, 2005.

Kim TK. (Exhibit) Contrast enhanced pulse inversion sonography of liver tumors: Why is there discordance with contrast-enhanced CT or MR scan. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting. Florence, Italy. May 28-May 31, 2005.

Kim TK. (Exhibit) Evaluation of hypervascular liver masses in asymptomatic young low risk patients with microbubble-enhanced Ultrasound. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting. Florence, Italy. May 28-May 31, 2005.

Kirby JM, Jhaveri KS, Khalili K. (Poster) Abdominal manifestations of systemic lupus erythematosus: a pictorial essay. Annual Scientific Meeting, Faculty of Radiologists RCSI. Dublin, Ireland. October 2004.

Kirby JM, Boylan CE, Hanbidge AE, Khalili K, O'Malley ME, Guindi M. (Poster) Imaging appearances of small bowel tumors with pathological correlation. Annual Scientific Meeting, Faculty of Radiologists RCSI. Dublin, Ireland. October 2004.

Kirby JM, Rajan DK, Tan KT, Hayeems EB, Simons ME. (Poster) Ultrasound-guided sclerotherapy for venous vascular malformations: A 5-year experience. Society of Interventional Radiology 30<sup>th</sup> Annual Scientific Meeting. New Orleans, Louisiana, USA. March 30-April 5, 2005.

Kirby JM, Jhaveri KS, Kachura JR. (Poster) CT angiography for endoleak: is a tri-phasic study required? Society of Interventional Radiology 30<sup>th</sup> Annual Scientific Meeting. New Orleans, Louisiana, USA. March 30-April 5, 2005.

Kirby JM, Kachura JR, Rajan DK, Lim RD, Kingdom JC, Windrim RC. (Poster) Treatment of primary post-partum hemorrhage with uterine artery embolization. Society of Interventional Radiology 30<sup>th</sup> Annual Scientific Meeting. New Orleans, Louisiana, USA. March 30-April 5, 2005.

Klurfan P, Gunnarsson T, Armstrong D, terBrugge K. (Poster) Pediatric proliferative angiopathy resembling Brain AVMs. 8<sup>th</sup> Joint Annual Meeting of the AANS/CNS Cerebrovascular Section and The American Society of Interventional & Therapeutic Neuroradiology. New Orleans, Louisiana, USA. February 1-4, 2005.

Klurfan P, Stasiak D, Halliday W, Smith C, Reintamm G, terBrugge K. (Poster) Vein of Galen aneurysmal malformation presenting with pulmonary hypertension associated with portal-hepatic

A-V shunt. 8<sup>th</sup> Joint Annual Meeting of the AANS/CNS Cerebrovascular Section and The American Society of Interventional & Therapeutic Neuroradiology. New Orleans, Louisiana, USA. February 1-4, 2005.

Klurfan P, Nakano S, Agid R, Reintamm G, terBrugge K. (Poster) Early endovascular management of intra and extracranial AV fistulas presenting with congestive heart failure. 8<sup>th</sup> Joint Annual Meeting of the AANS/CNS Cerebrovascular Section and The American Society of Interventional & Therapeutic Neuroradiology. New Orleans, Louisiana, USA. February 1-4, 2005.

Koff D, Sahlas J, Black S, Fox A, Beck S, Moody A - Implementation of a Web-enabled Teleradiology Solution within an Integrated Stroke Network in Ontario” – RSNA – Electronic poster and oral communication – Chicago, December 2004

Koff D, N.Smolarski Koff, M. Shawky - “Le Monde Merveilleux de la Compression raconte aux Médecins” – Journées-Francaises de Radiologie. Electronic poster and oral communication – Paris, October 2004

Koff D, Glanc P. - Toronto – Canada Journées Françaises de Radiologie, 2 au 6 octobre 2004 CNIT - Paris la Défense Conseil Scientifique de l’Exposition des JFR'2004, que le résumé que vous avez soumis a été accepté: N° résumé et Titre : 000895 - Considérations techniques pour la mise en place d'un réseau de téléradiologie néo-natale en Ontario En spécialité : Télémedecine. Journées Françaises de Radiologie, 2 au 6 octobre 2004, CNIT - Paris la Défense

Koff D, Sahlas J, Black S, Fox A, Beck S, Moody A - “Implementation of a Web-enabled Teleradiology Solution within an Integrated Stroke Network in Ontario”. Radiology Society of North America. Electronic poster and oral communication. Chicago, December 2004

Koff D, Glanc P - Considérations techniques pour la mise en place d’un réseau de téléradiologie néonatale en Ontario » – Journées Francaises de Radiologie – Electronic poster – Paris, October 2004

Koff D, N.Smolarski Koff, Kravchenko L, Kravchenko I, Yeung B. - “Evaluation of JPEG and JPEG 2000 with comparison software”. Radiology Society of North America. Electronic poster. Chicago, December 2004

Koff D, Townend C - Applied Health Informatics Bootcamp, University of Waterloo, Waterloo, Ontario, July 17-22, 2005, Continuing Medical Education Director - “Major Healthcare Applications 2: Digital Imaging and PACS”

Kulkarni S, Ibach D. (Poster) Impact of contrast enhanced MR of the breast in the management of pregnancy associated breast cancer: Our experience. 14th World Congress in Obstetrics & Gynecology. Stockholm, Sweden. August 2004.

Laffan EE, Manson DE, Daneman A. H-Type tracheo-oesophageal fistulae: Are tube oesophagrams needed for diagnosis? The European Society of Pediatric Radiology, Dublin, Ireland, May 30 – June 3, 2005.

Laffan EE, Manson DE, Daneman A. H-Type tracheo-oesophageal fistulae: are tube oesophagrams needed for diagnosis? The European Society of Pediatric Radiology, Dublin, Ireland, May 30-June 3, 2005.

Laffan EE, McNamarra PJ, Whyte H, Chait P, John P, Amaral J, Temple M, Connolly B. A six-year review of interventional procedures in the very low-birth weight infant (less than 1.5kg): Complications, lessons learned and current practice. European Society of Paediatric Radiology, Dublin, Ireland. June 2005

Laffan EE, McNamarra PJ, Whyte H, Chait P, John P, Amaral J, Temple M, Connolly B. A six-year review of interventional procedures in the very low-birth weight infant (less than 1.5kg): Complications, lessons learned and current practice. European Society of Paediatric Radiology, Dublin, Ireland. June 2005

Landis MS, Rajan DK, Sniderman KW. Percutaneous management of chronic mesenteric ischemia: Outcomes following intervention. Society of Interventional Radiology 30th Annual Scientific Meeting. New Orleans, Louisiana, USA. March 2005.

Lee SK, Klurfan P, Willinsky R, Gunnarrsson T, terBrugge K. (Exhibit) Paraplegia after acute intracranial subarachnoid aneurysm rupture: extension of the subarachnoid hemorrhage in the lumbosacral region. 43<sup>rd</sup> Annual Meeting of the American Society of Neuroradiology. Toronto, Ontario, Canada. May 23-27, 2005.

Leung R, Chait P, Amaral J, Smith C, Connolly B, Temple M, John P, Fontalvo L. Ultrasound-guided core biopsy of mediastinal masses in children. American Roentgen Ray Society, New Orleans, Louisiana. May 2005

Leung R, Chait P, Amaral J, Smith C, Connolly B, Temple M, John P, Fontalvo L. Ultrasound-guided core biopsy of mediastinal masses in children. American Roentgen Ray Society, New Orleans, Louisiana. May 2005.

Levine DS, Navarro O. Neutropenic colitis with appendiceal thickening – red flag or red herring? Dublin, Ireland, 42nd Annual Congress of the European Society of Pediatric Radiology, June 1, 2005.

Levine DS, Navarro OM, Chaudry G, Blaser S. Imaging the complications of Bone Marrow Transplantation in children. 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Malik O, Roncarolli F, Quest R, Aviv RI - Lesion evolution using Apparent diffusion coefficient in a patient with Balo's concentric sclerosis. ASNR, Toronto, May 2005



Manson D. Neonatal Chest. Organ Imaging Review Course, Department of Medical Imaging, University of Toronto, Toronto, Ontario, September 29, 2004.

Manson D. Congenital Anomalies of the Lung. Organ Imaging Review Course, Department of Medical Imaging, University of Toronto, Toronto, Ontario, September 29, 2004

Mandel J, Gillespie E, Jaffer N. Dynamic highlighting as a computer aid for teaching cross-sectional anatomy to medical students. Radiological Society of North America Meeting. Chicago, Illinois, USA. November 29, 2004.

Maroo S, Wales P, Chait P, Temple M, Krishnamurthy G, Amaral J, John P, Connolly B. Image guided drainage of multiple intraabdominal abscesses in children with perforated appendicitis: an alternative to laparotomy? European Society of Paediatric Radiology, Dublin, Ireland. June 2005

Marshall AH, Fanning N, Symons S, Shipp D, Chen JM, Nedzelski JM. - Cochlear implantation in cochlear otosclerosis. Eastern Section Meeting of the Triological Society, January 2005, Washington, DC, USA.

Martin DA, Blaser S, Armstrong D, Forrest C, Papsin B. 3D and multiplanar CT of the temporal bone in auricle and external auditory canal dysplasias. A pictorial review 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Maxwell C, Toi A, Keating A, Thomas M, Chitayat D. (Poster) Prenatal diagnosis of osteogenesis imperfecta type 3. American Society of Human Genetics. Los Angeles, California, USA. November 4-8, 2004.

McAuliffe F, Chitayat D, Halliday W, Keating S, Shannon P, Cutz E, Shah V, Unger S, Fink M, Nevo O, Ryan G, Blaser S. Fetal U/S and MRI in Rhomboencephalosynapsis. 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

McAuliffe F, Fong KW, Toi A, Chitayat D, Keating S, Johnson J. (Poster) Ultrasound detection of fetal anomalies in the first trimester in conjunction with nuchal translucency screening: a feasibility study. Society of Maternal and Fetal Medicine. Reno, Nevada, USA. February 7-11, 2005.

McAuliffe F, Fong KW, Toi A, Chitayat D, Keating S, Johnson J. (Poster) Ultrasound detection of fetal anomalies in the first trimester in conjunction with nuchal translucency screening: a feasibility study. 14<sup>th</sup> World Congress on Ultrasound in Obstetrics & Gynecology. Stockholm, Sweden. September 1-4, 2004.

Menard C, Brock K, Haider M, Toi A, Kirilova A. Development of a prostate deformation model to enable accurate registration of endorectal coil magnetic resonance imaged (ERC-MRI) to reference treatment planning CT images. Radiation Medicine Program, 2nd Annual MRI Symposium. Toronto, Ontario, Canada. February 23, 2005.

Mikulis DJ, Angel M, Poublanc J, Crawley A, Fisher J. Changes in brain physiology following carotid endarterectomy: Motor plasticity, cerebrovascular reactivity, and neurovascular coupling. Annual Meeting of the Eastern Neuroradiological Society. Boston, Massachusetts, USA. August 20-22, 2004.

Mikulis DJ, Taylor K, Farb R, Willinsky R, Rowan S, Kassner A, Silver F. Detection of parenchymal hemorrhage in acute ischemic stroke: CT versus echo-planar gradient-echo MR imaging. 43rd Annual Meeting of the American Society of Neuroradiology. Toronto, Ontario, Canada. May 23-27, 2005.

Mikulis DJ. Acute ischemic stroke (AIS) MRI: Rapid assessment of anatomy, hemorrhage, penumbra, major vessels, and early defects in the blood-brain-barrier (BBB). Book of Abstracts. 43rd Annual Meeting of the American Society of Neuroradiology. Toronto, Ontario, Canada. May 23-27, 2005.

Milic A, Blaser S, Robinson A, Viero S, Halliday, W Winsor E, Toi A, Thomas M, Chitayat D. Fetal diagnosis of trisomy 22 using MRI: The importance of microtia. 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Milosevic M, Chung P, Bristow R, Toi A, Panzarella T, Hill R. Prostate cancer hypoxia adversely influences outcome following treatment with radiotherapy. Annual Scientific Meeting of the Canadian Association of Radiation Oncologists. Halifax, Nova Scotia, Canada. September 9-12, 2004.

Milosevic M, Bristow R, Chung P, Panzarella T, Toi A, Hill R. Prostate cancer hypoxia correlates with poor patient outcome following treatment with radiotherapy. Annual Meeting of the American Society for Therapeutic Radiology and Oncology. Atlanta, Georgia, USA. October 4-7, 2004.

Moody AR, Crossley, I, Moorby, S, - Delay Magnetic resonance direct thrombus imaging as a first line investigation of pulmonary embolism - results of the PDQ trial. RSNA 2004

Morgan, Paul S, George, Mark S, Kozel, F.Andy, Fridriksson, Julius, Baylis, Gordon C, Martel, Anne L, Auer, Dorothee P, Moody, Alan R. - Dynamic Contrast Enhanced Whole Brain Perfusion using a Rapid 3D T1-weighted Sequence at 1.5T and 3T ISMRM Miami 2005.

Murphy-Lavallee J, Kim TK, Jang HJ, Wilson SR.(Exhibit) Significance of sonographic observations at screening ultrasound for hepatocellular carcinoma: Review of 1697 consecutive patients. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting. Florence, Italy. May 28-May 31, 2005.

Ortiz CL, Haidar S, Shelef I, Hitzler JK, Olivieri NF, Shroff MM, Gilday D, Blaser S. Neurologic Compromise in Extramedullary Hematopoiesis. ASNR 42<sup>nd</sup> Annual Meeting, Seattle, June 5-11,2004, ESPR Heidelberg, June 7-11, 2004

Otsubo H, Oishi M, Suyama Y, Iidk A, Ochi A, Weiss SK, Xiang J, Gaetz W, Cheyne D, Chuang S, Rutka JT. Epileptic discharges of MEG using synthetic aperture magnetometry:

Comparison to intercranial discharges over the epileptogenic zone. Presented at Biomag 2004, Boston Massachusetts. August 8-12, 2004.

Ozelame RV, Pantazi S, Forte V, Keating S, Blaser S. Prenatal Diagnosis of Lymphatic Malformation in the Neck by Magnetic Resonance Imaging: Report of Three Cases. 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Ozelame RV, Wood B, Shroff M, Bouffet E, Drake JM., Hawkins C, Blaser S. Basal Ganglia Germinoma in Children with Associated Ipsilateral Cerebral and Brain Stem Hemiatrophy: report of three cases. 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Pantazi S, Robinson A, Blaser S, Toi A, Gundogan M, Chitayat D, Ryan G. MR imaging of the fetus in utero II: A practical guide to systematic analysis and the rest (non-CNS). American Society of Human Genetics. Toronto, Ontario, Canada. October 26-30, 2004.

Parmar H, Papsin B, Unger S, Blaser S. Petrified Ears in a Case of Keutel Syndrome: Imaging Findings SENTAC, Toronto, December 2-5, 2004

Patsios D, Kucharczyk M, Paul N, Chung T, Herman S, Provost Y, Weisbrod G, Roberts H. The utility of computer aided detection (CAD) for lung cancer screening using low dose CT. UK Radiological Congress 2005. Manchester, United Kingdom. June 2005.

Patsios D, Paul N, Pereira A, Rao A, Roberts H, Chung T, Herman S, Weisbrod G. Minimum dose CT post lung biopsy as a predictor of outcome. UK Radiological Congress 2005. Manchester, United Kingdom. June 2005.

Patsios D, Pereira A, Roberts H, Paul N, Chung TB, Herman S, Weisbrod G. (Poster) Pictorial review of the many faces of bronchioloalveolar cell carcinoma. 1<sup>st</sup> World Congress of Thoracic Imaging. Florence, Italy. May 7-10, 2005.

Patsios D, Roberts H, Baerlocher MO, Paul NS, Chung TB, Herman S, Weisbrod G, Boerner S, Shepherd F, Tsao M, Waddell T, Darling G, Keshavjee S. Lung cancer screening using low dose computed tomography in Toronto: first experience. UK Radiological Congress 2005. Manchester, United Kingdom. June 6-8, 2005.

Patsios D, Pereira A, Roberts H, Paul N, Chung TB, Herman S, Weisbrod G. (Poster) Pictorial review of the many faces of bronchioloalveolar cell carcinoma. UK Radiological Congress 2005. Manchester, United Kingdom. June 6-8, 2005.

Paul NS, Griffin A, Chung T, Catton C. Surveillance minimum dose computer tomography of the thorax in patients with high-grade extremity soft tissue sarcoma. International Cancer Imaging Society. Sestri Levante, Portofino Coast, Italy. October 10, 2004.

Propst EJ, Blaser SI, Papsin B. Temporal Bone Findings on Computed Tomography Imaging in Branchio - Oto – Renal Syndrome. SENTAC, Toronto, December 2-5, 2004

Propst J, Blaser S, Gordon KA, Harrison RV, Papsin BC. Temporal Bone Findings on Computed Tomography Imaging in Branchio-Oto-Renal Syndrome. 42nd ESPR Congress, June 1st - 3<sup>rd</sup> 2005, Dublin

Provost Y. Delayed enhancement MRI of the heart - more than just ischemic myocardial injury. Radiological Society of North America Meeting 90<sup>th</sup> Scientific Assembly and Annual Meeting. Chicago, Illinois, USA. November-December 2004.

Rakhra K, Powell T, Chhaya S, Becker E, White LM. (Educational Exhibit) Spectrum of imaging features of extraskeletal osteosarcoma. 2004 Scientific Assembly and Annual Meeting of the Radiologic Society of North America. Chicago, Illinois, USA. November-December 2004.

Rao AT, Patsios DA, Chung T, Paul N, Herman S, Roberts H, et al. (Poster) Pulmonary angitis and granulomatosis: a pictorial essay. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Reid Myles D, Kingdom J, Sroka H, Blaser S, Toi A, Chitayat D. (Poster) Fetomaternal hemorrhage identified through high MS-AFP and resulting in a brain infarct. American Society of Human Genetics. Los Angeles, California, USA. November 4-8, 2004.

Roberts HC, Patsios DA, Kucharczyk M, Paul N, et al. The utility of computer-aided detection (CAD) for lung cancer screening using low-dose CT. CARS 2005 Computer Assisted Radiology and Surgery. Berlin, Germany. June 22-25, 2005.

Roberts HC, Patsios DA, Rao AT, Paul NS, Sitartchouk I, Roberts TP. Dynamic CT perfusion for lung nodule characterization. 11<sup>th</sup> International Conference on Screening for Lung Cancer. Rome, Italy. October 15-17, 2004.

Robinson A, Blaser S, Toi A, Chitayat D, Keating S, Ryan G, Viero S. In-utero MR imaging of the fetal eyes: Examples of abnormal biometry and development, with ultrasonographic and clinicopathologic correlation. Society for Pediatric Radiology Annual Meeting. New Orleans, Louisiana, USA. May 2005.

Robinson A, Blaser S, Toi A, Chitayat D, Pantazi S, Gundogan M. MR imaging of the fetus in utero: A practical guide to systematic and methodological analysis. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Robinson AJ, Blaser SI, Chitayat D, Toi A, Halliday W, Gundogan M, Pantazi S, Ryan G. MR imaging of the fetal cerebellar vermis in utero: Criteria for abnormal development, with ultrasonographic and clinicopathologic correlation. American Society of Human Genetics. Toronto, Ontario, Canada. October 26-30, 2004.

Robinson AJ, Blaser S, Toi A, Chitayat D, Ryan G, Pantazi S, Gundogan M. MR Imaging of the Fetal Eyes: Normal and Abnormal development. ESPR Heidelberg, June 7-11, 2004

Robinson AJ, Blaser S, Toi A, Chitayat D, Ryan G, Pantazi S, Gundogan M, Laughlin S. MR Imaging of the Fetal Cerebellar Vermis in Utero: Description of Some Useful Anatomical Criteria for Normal Development. ASNR 42<sup>nd</sup> Annual Meeting, Seattle, June 5-11,2004, ESNR Heidelberg, June 7-11, 2004

Robinson AJ, Blaser S, Toi A., Chitayat, D, Ryan G, Pantazi S, Gundogan M, Laughlin S. MR Imaging of the Fetal Cerebellar Vermis in Utero: Criteria for Abnormal Development, with Ultrasonographic and Clinicopathologic Correlation. ASNR 42<sup>nd</sup> Annual Meeting, Seattle, June 5-11, 2004 (The Derek Harwood-Nash Award)

Salman MS, Blaser S, Sharpe JA, Maureen Dennis. Cerebellar Vermis Morphology in Children with Arnold-Chiari Type II Malformation. American Neurological Association 129th Annual Meeting and the 7th Annual Neurology Outcomes Symposium, 2004

Sey M, Chait P, Amaral J, Connolly B, Temple M, John P, Krishnamurthy G, Fontalvo L. Hemodialysis central venous catheter (CVC)-related complications in a pediatric population. American Roentgen Ray Society, New Orleans, Louisiana. May 2005

Sey M, Chait P, Amaral J, Connolly B, Temple M, Krishnamurthy G, et al. Hemodialysis Central Venous Catheter Related Complications in a Pediatric Population. ARRS, New Orleans, Louisiana. May 2005.

Shah P, Blaser S, Toi A, Babul-Hirji R, Chong K, Chitayat D. (Poster) Cavum veli interpositi: Prenatal diagnosis and long-term follow up. American Society of Human Genetics. Los Angeles, California, USA. November 4-8, 2004.

Shaham D, Breuer R, Copel L, Agid R, Kisselgoff D, Makori A, Goitein O, Izhar U, Berkman N, Heching N, Sosna J, Bar-Ziv J, Libson E, for the HM-ELCAP Cooperative Group. Baseline and annual repeat CT screening for lung cancer. The Hadassah Early Lung Cancer Action Program (HM-ELCAP). Annual Meeting of the Israel Radiological Associations. Eilat, Israel. October 2004.

Shelef I, Gunnarsson T, terBrugge KG, Willinsky RA. (Exhibit) Gender findings in patients with intracranial dural arteriovenous fistula. 43<sup>rd</sup> Annual Meeting of the American Society of Neuroradiology. Toronto, Ontario, Canada. May 23-27, 2005.

Shin H.J, Connolly B, Amaral J, Armstrong D, Chait P, Temple M, Krishnamurthy G, John P, Smith CR. Image-guided percutaneous biopsy of bone and soft tissue lesions in children. European Society of Paediatric Radiology, Dublin, Ireland. June 2005.

Siewerdsen J, Paul N, Wong R, Patsios DA, Rao AT, Chung T, et al. Quantitative assessment of nodule detectability in chest CT: delving the low-dose limits. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Sklaar C, Chait P, Amaral J, Connolly B, Temple M, Krishnamurthy G. et al. To Evaluate the Benefits and Complications of Retrograde G/GJ Tubes in Neonates. SIR 30<sup>th</sup> Annual Scientific Meeting. New Orleans, LA. April 2005.

Singer SB, Dill-Macky MJ, Shin V. Sequence succession in breast MRI: Can we perform T2 imaging after the dynamic series? American Roentgen Ray Society Meeting. New Orleans, Louisiana, USA. May 2005.

Sklaar C, Chait P, Amaral J, Connolly B, Temple M, Krishnamurthy G, John P, Fontalvo L. Benefits and complications of gastrostomy(G) and gastrojejunostomy(GJ) tubes in neonates. American Roentgen Ray Society, New Orleans, Louisiana. May 2005

Sniderman KW, Rajan DK. Restenosis after Tips: A comparison of treatment by PTA, bare stent and covered stent. Society of Interventional Radiology Annual Scientific Meeting. New Orleans, Louisiana, USA. March 2005.

Spears J, terBrugge K, Wallace MC, Tymianski M. (Poster) Prospective validation of a model for neurological outcome following surgery of brain arteriovenous malformations: preliminary report. 8<sup>th</sup> Joint Annual Meeting of the AANS/CNS Cerebrovascular Section and The American Society of Interventional & Therapeutic Neuroradiology. New Orleans, Louisiana, USA. February 1-4, 2005.

Stanton I, White LM, Satchithananda K, Compson J, Elias D. (Educational Exhibit) The postoperative patellofemoral joint: Expected radiologic appearances and complications. 2004 Scientific Assembly and Annual Meeting of the Radiologic Society of North America. Chicago, Illinois, USA. November-December 2004.

Sternbach Y, Lindsay T, Rubin B, Kachura J, Sniderman K. Initial experience with endovascular repair of thoracoabdominal aneurysms. Canadian Society for Vascular Surgery, 26<sup>th</sup> Annual Meeting. Quebec City, Quebec, Canada. October 22-23, 2004.

Sussman MS, White LM, Haider MA, Roberts TP. (Education Exhibit) Improved diffusion-weighted MRI using the propeller technique. Radiological Society of North America Meeting. Chicago, Illinois, USA. November-December 2004.

Sutcliffe TL, Logan W, Gaetz W, Cheyne D, Shroff M, Fehlings DL. Altered cortical activation following constraint-induced therapy in a child with hemiplegic cerebral palsy. Neurology 64: pA341, 2005.

Sutcliffe TL, Logan WJ, Gaetz W, Cheyne D, Shroff M, Fehlings DL. Altered Cortical Activation Following Constraint-Induced Therapy in a Child with Hemiplegic Cerebral Palsy. Neurology 2205, 64(6). (suppl 1), A342. Poster presented at the 57<sup>th</sup> annual meeting of the American Academy of Neurology. Miami, Florida. April 2005.

Tatalkar A, Pampaloni M, Charron M. Comparison of Radionuclide Salivagrams and Milk Scanning for Detection of Pulmonary Aspiration. Radiology 2004; 227(p) 609. Radiological Society of North America, November 30 – December 4, 2004, Chicago, Illinois, USA

Teitelbaum R, McLeod L, Pai A, Keating S, Toi A, Velsher L, Chitayat D. (Poster) Prenatal diagnosis and autopsy findings in Catel-Manzke Syndrome. American Society of Human Genetics. Los Angeles, California, USA. November 4-8, 2004.

Tejada J, Chaloupka J, Lee SK, Ugurel M, Hayakawa M, Taylor R. Intraarterial nicardipine for the treatment of subarachnoid hemorrhage associated vasospasm: initial clinical experience with high dose infusions. 43<sup>rd</sup> Annual Meeting of the American Society of Neuroradiology (ASNR). Toronto, Ontario, Canada. May 2005.

Theal J, Haider M, Greenberg GR. Meropenem improves complex perianal Crohn's Disease refractory to infliximab. Canadian Digestive Diseases Week, Gastroenterology Residents in Training Course. Banff, Alberta, Canada. February 2004.

Thomas M, Toi A, Keating S, Chitayat D. Prenatal finding of Trisomy 22. American Society of Human Genetics. Toronto, Ontario, Canada. October 26-30, 2004.

Toi A, Giede C, Rosen B, Chapman C. Transrectal ultrasound (TRUS) guided biopsy: For women as well as men? 14th World Congress in Obstetrics and Gynecology. Stockholm, Sweden. August 31-September 4, 2004.

Trachtenberg T, Haider M, Wilson B, Aprikian A, Elhilali M, Scherz A, Salomon Y, Cohen P, Provvedini D. Phototherapie vasculaire (VTP) avec WST09 dans le traitement de la recidive de cancer de la prostate après echec de la radiotherapie externe. French Urological Society Meeting. Paris, France. 2004.

Verbeeten K, Chait P, Amaral J, Connolly B, Temple M, John P, Fontalvo L, Krishnamurthy G. Central venous catheter (CVC)-related venous thrombosis in the hematology-oncology pediatric population. American Roentgen Ray Society, New Orleans, Louisiana. May 2005

Verbeeten K, Chait P, Amaral J, Connolly B, Temple M, John P, Fontalvo L, Krishnamurthy G. Central venous catheter (CVC)-related venous thrombosis in the hematology-oncology pediatric population. American Roentgen Ray Society, New Orleans, Louisiana. May 2005.

Verbeeten K, Chait PG, Amaral J, Connolly B, Temple M, John P, Fontalvo L, Krishnamurthy G. Central Venous Catheter-Related Venous Thrombosis in the Hematology-Oncology Pediatric Population. ARRS, New Orleans, Louisiana. May 2005.

Vira F, Chait P, Crysdale W, Adams P, Temple M, Amaral J, et al. Effectiveness of Ultrasound Guided Injection of Botox into the Salivary Glands of Children with Severe Drooling. 105<sup>th</sup> American Roentgen Ray Society Annual Meeting, New Orleans, Louisiana. May 2005.

Vira F, Chait P, Crysdale W, Adams P, Temple M, Connolly B, John P. Effectiveness of ultrasound-guided injection of botox into the salivary glands of children with severe drooling. American Roentgen Ray Society, New Orleans, Louisiana. May 2005

Vira F, Chait P, Crysdale W, Adams P, Temple M, Connolly B, John P. Effectiveness of ultrasound-guided injection of botox into the salivary glands of children with severe drooling. American Roentgen Ray Society, New Orleans, Louisiana. May 2005.

Volpe A, Gharajeh A, Saravanan A, Evans A, Kachura J, Jewett MA. (Poster) Current techniques, safety and accuracy of needle biopsy of kidney tumours. Canadian Urological Association, 60<sup>th</sup> Annual Meeting. Ottawa, Ontario, Canada. June 26-29, 2005.

Weisbrod G, Herman S et al. The utility of computer-aided detection (CAD) for lung cancer screening using low dose CT. 1<sup>st</sup> World Congress of Thoracic Imaging. Florence, Italy. May 7-10, 2005. (Proffered Paper)

Weisbrod G, Herman S, et al. Minimum dose CT post lung biopsy as a predictor of outcome. UK Radiological Congress 2005. Manchester, United Kingdom. June 6-8, 2005.

Weiser WW. AJR SARS/CT Presentation. July 2004.

Willinsky RA, Farb RI, Nag S, Scott J, Marotta T, Montanera W, Tomlinson G, terBrugge KG. (Exhibit) Surveillance of intracranial aneurysms treated with detachable coils: a comparison of MR angiographic techniques. 43<sup>rd</sup> Annual Meeting of the American Society of Neuroradiology. Toronto, Ontario, Canada. May 21-27, 2005.

Wilson SR, Kim TK, Jang HJ, Burns PN. (Exhibit) Contrast-enhanced ultrasound of liver lesions: Why is there discordance with CT and MRI? European Society of Gastrointestinal and Abdominal Radiology Annual Meeting. Florence, Italy. May 28-May 31, 2005.

Wu L. Cardiac MRI: A Primer with CMART. Annual Meeting, PEI. June 2005.

Yang Y, Merchant N, Provost Y, Konen E, Wright GA. (Exhibit) Scar tissue in patients with ischemic heart failure: evaluation by delayed enhancement magnetic resonance imaging and correlation with left ventricular ejection fraction. Canadian Cardiovascular Congress and XIX InterAmerican Congress of Cardiology. Toronto, Ontario, Canada. October 27, 2004.

Yip M, Jong RA, Causar PA - High-Risk Screening with Contrast –enhanced Dynamic Breast MRI: Analysis of False Negative Results after 6 years' Experience. RSNA Annual Meeting. Chicago, Illinois December 1, 2004

Yip M, Causar P, Jong R. - High-risk screening with contrast Enhanced dynamic breast MRI: analysis of false negative results after 6-years' experience. December 2004: RSNA meeting, Chicago Illinois



Yip M, Jong RA, Hendrick RE, Wolfman J, Zeng X, Stapleton S, Curpen B, Causer P, Kornecki A, Ali A, Shen S, Yaffe MJ - Preliminary Results: Efficacy of a Digital Mammographic CAD System International Workshop on Digital Mammography 2004, Durham, North Carolina June 18-21, 2004

Yu E, Laughlin S, Kassel EE, Messner HA, Yucel YH. (Scientific Exhibit) Nocardial endophthalmitis and subretinal abscess: CT and MRI features with pathologic correlation. American Society of Head and Neck Radiology, 38th Annual Meeting and Symposium. Philadelphia, Pennsylvania, USA. September 29-October 3, 2004.

Yu JQ, Hernandez-Pampaloni M, Zhuang H, Maris J, Charron M, Takalkar A, El-Haddad G, Dhurairaj T, Newberg A, Alavi A. Comparison of I-123 Labeled MIBG Diagnostic Scan with Post therapeutic I-131 Scan in Patients with Neuroblastoma. J Nucl Med 2005: 46(5) 333P. Society of Nuclear Medicine 52<sup>nd</sup> Annual Meeting, June 18-22, 2005, Toronto, ON, Canada

Yu JQ, Zhuang H, Hernandez-Pampaloni M, Edwards K, Alavi A, Newberg A, Barrett J, Schall J, Charron M, Mascarenhas MR. High fat content meal affects gastric emptying and small bowel transit. J Nucl Med 2005: 46(5) 224P. Society of Nuclear Medicine 52<sup>nd</sup> Annual Meeting, June 18-22, 2005, Toronto, ON, Canada

Zalev AH. Imaging of small bowel Crohn's disease at the start of the 21<sup>st</sup> century. 2<sup>nd</sup> Canada Israel Medical Conference. November 15, 2004, Tel Aviv, Israel.

Zalev AH, Deitel WL. Capsule endoscopy findings in patients with established and suspected small bowel Crohn's Disease: correlation with radiological and endoscopic findings. SGR Meeting. February 27 –March 3, 2005, San Antonio, Texas.

Zalev AH. Intestinal Imaging at the Start of the 21<sup>st</sup> Century 35<sup>th</sup> Reunion of Class of 1970, UofT. Scientific Session. June 2005.

## AWARDS AND SPECIAL RECOGNITION

Babyn PS, Chu WC, Tsou IYY, Wansaicheong GKL, Allen U, Britnun A, Chee TSG, Cheng FWT, Chiu MC, Fok TF, Hon EKL, Gahunia HK, Kaw GJL, Khong PL, Leung CW, Li AM, Manson D, Metreweli C, Ng PC, Read S, Stringer DA. Walter E. Berdon Award for Best Clinical Paper, Society of Pediatric Radiology, New Orleans, 2005

Babyn P. Excellence in Teaching – Department of Medical Imaging Fellowship Program. University of Toronto. July 1, 2004 – June 30, 2005

Cartwright L, Farhat W, Sherman C, Chen J, Yeger H, Babyn P, Cheng HLM. Best Poster: “Tissue Engineered Bladder Neovascularization is Enhanced with VEGF and Quantifiable with Dynamic Contrast-Enhanced MRI,” 52nd Annual James C. Kimbrough Urological Seminar, Honolulu, USA, 16-21 Jan, 2005.

Chung T, Culham G, Yoo SJ. Presidential Recognition Award. Annual Meeting of the Society for Pediatric Radiology.

Daneman A. Outstanding teacher in the Fellowship Program. University of Toronto, Dept. of Medical Imaging Award 2004-2005

Daneman A. The Jack O. Haller Award for Excellence in Teaching. 2005 Grant Awards from the SPR Research and Education Foundation presented at the 48th Annual Meeting of the Society for Pediatric Radiology. New Orleans, Louisiana, May 4-7, 2005

Epelman M, Daneman A, Ortiz C, Blaser S, Jarrin J, Konen O. The Differential Diagnosis of Intracranial (IC) Cystic Lesions on Head Ultrasound (HUS) RSNA 90<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago Nov 28-Dec 3, 2004 (Certificate of Merit).

Epelman M, Daneman A, Kellenberger C, Aziz A, Konen O, Blaser S. State-of-the-Art Imaging of Hypoxic-Ischemic Encephalopathy (HIE) with Emphasis on High Resolution Sonography (HRS) RSNA 90<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago Nov 28-Dec 3, 2004 (Certificate of Merit).

Macgowan C. Richard Knill Research Competition Finalist (co-author) – 61<sup>st</sup> *Canadian Anesthesiologists’ Society Meeting*, June 2005.

Manson D. Outstanding Teacher in the Fellowship Program 2004-2005, as selected by the Fellows.

Navarro O. Outstanding Teacher in the Fellowship Program. University of Toronto, Dept. of Medical Imaging Award. Academic Year: July 1, 2004 to June 30, 2005

Shroff M. Outstanding Teachers in the Residency and Fellowship Programs. University of Toronto, 2004-2005.

## **RESEARCH PROGRAM**

Research and education are the two pillars of academic medicine. Our department places equal emphasis on both. With respect to research, in the broadest sense, our research endeavors span the entire spectrum of scientific inquiry - from basic science to clinical trials. However, our focus is on translational and clinically applied research – imaging research whose results are intended to be applied in the clinic within 1-5 years. Our research program is jointly led by Andrea Kassner, PhD, and David Mikulis, MD - our Acting Research Program Co-Directors.

Research is an important mission of the Department of Medical Imaging. Many of the faculty, residents, and fellows in the Department devote considerable effort to research. The Department supports research through several projects depending on the interest and expertise of individuals and on resources at particular hospitals. Furthermore, several dedicated research faculty with appointments in Medical Imaging at each of the affiliated hospitals collaborate with the Department to help comprise a massively diverse research program.

A synopsis of the key initiatives is presented below. Also included below are the research grants and publications of the faculty who are not listed with one of the affiliated hospitals.

### **The Faculty Research Award**

The Department provides support to allow a small number of radiologists to devote 50% of their time to research, while retaining the other half for clinical duties. The following radiologists are supported through this initiative:

- Dr David Mikulis (TWH)
- Dr Masoom Haider (PMH)
- Dr Naeem Merchant (TGH)
- Dr Alan Moody (SWCHSC)
- Dr Shi-Joon Yoo (HSC)

### **The Medical Imaging Research and Development Awards**

The Medical Imaging Research and Development Awards is an initiative intended to allow a select group of clinical radiologists with a strong research interest to devote at least one day each week to a defined research project. The radiologists listed in the table below were awarded the Medical Imaging Research and Development Awards in 2004-2005.

<b>Award Holder</b>	<b>Award Period</b>	<b>Hospital</b>	<b>Project Title</b>
Mostafa Atri	1/4/2004 – 31/3/2005	SWCHSC	Evaluation of QCT and DCE-MRI of cervical cancer perfusion and USPIO-enhanced MRI of cervical cancer lymphadenopathy
Petrina Causer	1/4/2003 – 31/3/2005	SWCHSC	MRI Evaluation of the contralateral breast in women with a recent diagnosis of breast cancer
Bairbre Connolly	1/4/2004 – 31/3/2005	HSC	Radiation dose to children and radiologist during PICC insertion
Alan Daneman	1/4/2004 – 31/3/2005	HSC	Necrotizing Enterocolitis: Comparison of grey scale and Doppler and sonography findings with clinical radiographic and pathological findings
Andrea Doria	1/7/2004 – 30/6/2005	HSC	Comparative measurements of BOLD signal in experimental arthritis according to variations in the region-of-interest
Richard Farb	1/7/2004 – 30/6/2006	UHN/MSH	The dural worm: A sign of previous sinovenous thrombosis
Kartik Jhaveri	1/7/2004 – 30/6/2005	UHN/MSH	Advanced MRI techniques application (diffusion imaging and MR spectroscopy) in ovarian mass characterization
Roberta Jong	1/1/2003 – 31/3/2005	SWCHSC	The ACIN Digital Mammography Imaging Screening Trial
John Kachura	1/7/2004 – 30/6/2005	UHN/MSH	Radiofrequency ablation of liver tumors: Patient survival, local progression-free survival and factors for failure of effectiveness
Korosh Khalili	1/7/2004 – 30/6/2005	UHN/MSH	Prevalence of cecal angiodysplasia in an asymptomatic population. Multidetector CT angiography in evaluation of occult GI hemorrhage
Martin O'Malley	1/7/2004 – 30/6/2006	UHN/MSH	Growth rates of hepatocellular carcinoma stratified by size
Narinder Paul	1/7/2004 – 1/9/2005	UHN/MSH	Comparison of low dose computed tomography of the thorax (LDCTT) and minimum dose computed tomography of the thorax (MD-CTT) with chest radiography (CXR) for the detection of lung metastases in a high risk population
Yves Provost	1/7/2004 – 30/6/2006	UHN/MSH	CT Coronary Angiography
Dheeraj Rajan	1/7/2004 – 30/6/2006	UHN/MSH	Interventional Research/Research in minimally invasive therapy
Heidi Roberts	1/7/2004 – 30/6/2006	UHN/MSH	Early lung cancer detection using computed tomography
Manohar Shroff	1/7/2004 – 30/6/2005	HSC	Is contrast really needed following a normal unenhanced CT of the brain in children?
Lawrence White	1/7/2004 – 30/6/2006	UHN/MSH	Quantitative T2 mapping of cartilage transplantation in an animal model
Stephanie Wilson	1/7/2004 – 30/6/2005	UHN/MSH	Introduction of microbubble enhanced sonography to routine clinical practice, with cost impact analysis

## **Multidisciplinary Research Program – Translational Research Grant**

The final results of this year's competition for Seed Grant funding as part of our departmental initiative to build our multidisciplinary research programs are as follows:

- Dr. Mostafa Atri - Ultrasound Assessment of Tumor Perfusion
- Dr. Andrea Doria - Pediatric Musculoskeletal Imaging
- Dr. Masoom Haider - Advanced Prostate Cancer Imaging
- Dr. Roberta Jong - Breast Imaging Research
- Dr. Manohar Shroff - Neuroimaging and Plasticity in the Immature Brain
- Dr. Lawrence White - Cartilage Imaging and Characterization

In addition, Dr. Alan Moody has been awarded funding from the same pool for a summer student for his research program on Imaging Vascular Biology.

All awardees are expected to write a peer-reviewed grant by the end of this calendar year, and to be successful with their grant applications by the end of 2006.

## **RSNA Roentgen Resident/Fellow Research Award**

The RSNA Research and Education Fund offers this Award annually to recognize and encourage outstanding residents and fellows in radiology research. Each year the director of the residency program or the department chair will nominate an individual based on publication and presentation of scientific papers, receipt of research grants or successful contributions to the departmental research program. In 2005, Eric Bartlett, MD received this award for his significant academic and research contributions to neuroradiology.

## **Research Day**

Annual forum for highlighting research accomplishments, which was held on April 21, 2005. It consisted of presentations from senior residents, the faculty who received the Medical Imaging Research and Development Awards, and many other members of the department. An excerpt from the Program for Research Day is included at the end of this section.

## **Positron Emission Tomography Centre, Centre for Addiction and Mental Health**

The Vivian M Rakoff Positron Emission Tomography (PET) Centre under the direction of Dr Sylvain Houle, located at the Centre for Addiction and Mental Health, fosters multidisciplinary research within the University of Toronto neuroscience community. The PET Centre is part of the University Functional Imaging Research Network (FIRN) and the provincial BRAIN research network. The intramural research at the PET Centre itself is focused on basic research in PET methodology (radiochemistry, neuroscience and physics) and in clinical application of PET to the understanding and treatment of mental disorders (schizophrenia, depression and aging) and addiction.

The PET Centre has recently developed a new selective PET radioligand for the serotonin transporter which is now being applied to the study of selective serotonin reuptake inhibitors (SSRIs) used to treat depression. Even though SSRIs have been prescribed for the treatment of depression in millions of patients but, up to now, it had not been possible to directly measure its effect in the brain. This new tracer, [C-11] DASB, is now being adopted by other leading PET research centres worldwide.

Another research programme within the PET Centre explores the role of the dopamine system in schizophrenia. Although the effects of antipsychotic medications are known to be linked to their effects on the dopamine system, very little is known about their actual mechanism of action in the brain. New insights in the role of the dopamine system have been obtained by closely linking human findings obtained with PET with those obtained from animal research. This approach is already providing clinical benefits in the treatment of schizophrenia by providing objective means of optimizing existing treatments and by offering new avenues for the development of more effective drugs.

### **Imaging/Bioengineering Research, SWCHSC**

Imaging research is a major focus of the Imaging/Bioengineering Research group at Sunnybrook and Women's College Health Sciences Centre (SWCHSC). Scientists in this group have University of Toronto appointments in the Department of Medical Biophysics, or the Department of Medical Imaging, or both. The faculty in this group make use of exceptional resources for research at SWCHSC and conduct research involving x-ray, nuclear medicine, magnetic resonance, and ultrasound technology. This group is internationally recognized for its excellent graduate student program.

### **Image Guided Minimally Invasive Therapy (IGMIT)**

This research program has received large extra-mural grants from Technology Ontario, the Canadian Foundation for Innovation, the ORDCF, and from the commercial sector. It is part of the University of Toronto wide collaborative program "Functional Imaging Research Network" (FIRN), and the Ontario wide collaborative programs, Ontario Consortium for Image Guided Surgery (OCITS), and the Imaging Network of Ontario (INO).

The IGMIT project has been in existence since 1995. The principal investigator is Dr. Walter Kucharczyk. There are many co-investigators and collaborators, especially in Neurosurgery under the leadership of Dr. Mark Bernstein, and in Medical Biophysics under the leadership of Dr. Mike Bronskill. The main thrust of this research program is the development and clinical implementation of multi-parametric imaging that demonstrates anatomic, physiologic, and functional tissue characteristics, with subsequent use of these multi-parametric tissue maps for image guidance in minimally invasive and surgical procedures. Much of the initial work has focused on open-concept MRI systems and the brain. Components of this project include image processing and analysis, neuro-navigation, pulse programming, thermometry, surface coil development, robotics, and MRI compatible surgical tools.

## **Downtown Imaging Physics Group**

Research scientists from the Department of Medical Imaging's affiliates: The University Health Network and the Hospital for Sick Children comprise this core group of imaging physicists and scientists in the downtown sector. Research areas focus on clinical translation and include but are not limited to Magnetic Resonance Imaging (MRI) physics, physiologic specific imaging, clinical applications in MRI, Dynamic CT, functional MRI and Magnetoencephalography (MEG) mapping methods as well as investigations in sensory and cognitive function. Individual projects of this group are briefly outlined below:

### **Projects by Andrea Kassner, PhD – UHN**

#### *1. Prediction of hemorrhage in acute ischemic stroke using permeability MRI*

Increased risk of intracranial hemorrhage limits the general use of tissue plasminogen activators (t-PA) in acute ischemic stroke (AIS). Preliminary results of this study shows that early blood-brain-barrier (BBB) defects in AIS can be assessed using quantitative DCE MRI. Significantly increased permeability was found in 3 cases which later on hemorrhaged. This method has potential to identify patients at higher risk of HT and may allow to use physiological imaging rather than time from onset of symptoms to guide the decision to treat with t-PA. This work has resulted in 1 paper, several abstracts and a successful grant application (CIHR).

Collaborators: David Mikulis, Tim Roberts

#### *2. Tissue classification in brain tumors*

Physiological MR imaging including diffusion (to assess tumor cellularity), dynamic contrast-enhanced (DCE) MRI (to assess blood volume and microvascular permeability related to angiogenesis) and spectroscopy (to assess metabolism) offer insights into aspects of tumor physiology and metabolism, thus allowing characterization of tumor dysfunction. These techniques will assist with tumor grading as well as surgical planning and monitoring of cancer related therapies. Furthermore the use of combinatorial approaches such as factor analysis may yield even higher specificity in determining prognosis and treatment response. Software developments for this project are ongoing.

Collaborators: James McCurdy, Adrian Crawley, David Mikulis

#### *3. Assessment of cerebral vascular reactivity (CVR)*

Combining CO<sub>2</sub> manipulation with BOLD MRI is a promising for assessing regional differences in cerebrovascular reactivity (CVR) which is a measurement of the brains autoregulatory capacity which is important for the assessment of vascular disorders in which autoregulation is compromised or exhausted. Since this technique is beginning to be used pre-operatively to guide surgical decision making and to assess efficacy of revascularization, knowledge concerning reproducibility and gender differences are essential. This work has resulted in several abstracts, 1 submitted paper.

Although the magnitude of the BOLD signal is primarily employed to assess the reactivity of the cerebral vasculature, the temporal delay of the BOLD response can be assessed and may contain useful information concerning blood transit times. We have calculated the time delay differences between vascular territories of the anterior, middle, and posterior cerebral arteries as well as white compared to overall grey matter, which were in line with what authors have reported previously for DSC imaging. This resulted in 2 abstracts and one manuscript.

Collaborators: Adrian Crawley, Julien Poublanc, David Mikulis

#### *4. Imaging of angiogenesis in experimental arthritis*

Juvenile idiopathic arthritis is a chronic disease that may impair any joint of the body. It produces inflammation of the synovium, which is a highly vascularized membrane that overlies the bones at the joints. The inflamed synovium in arthritis erodes the adjacent cartilage and bone. The sooner the arthritis is treated, the milder is the progression of the disease. Although conventional imaging modalities exist to evaluate the degree of inflammation and degeneration of the articular cartilage, such as anatomic magnetic resonance imaging, they are unable to depict articular changes before the joint is destroyed. In this study we plan to induce arthritis in rabbit knees and to determine whether functional magnetic resonance imaging such as permeability or BOLD imaging is able to monitor the response of the joints to treatment using non-steroidal anti-inflammatory drugs and a technique of continuous movimentation of the rabbit legs by means of a machine which is called continuous passive motion.

Collaborators: Andrea Doria, Tim Roberts, Adrian Crawley, Margaret Chen

#### *5. Metabolic and hemodynamic effects of cross-linked hemoglobin*

Hemoglobin-based-oxygen-carriers (HBOC) are being developed as a substitute for human blood to replace blood loss and ensure adequate oxygen delivery . Vasoconstriction limits the effectiveness of HBOC. To reduce the vasoconstrictor response the NO and O<sub>2</sub> affinity and diffusivity of HBOC have been modified. The effect of these HBOC on intrarenal pO<sub>2</sub> and blood flow distribution is not known. We therefore aim to develop methods for quantitating intrarenal blood flow and hemoglobin oxygenation following infusions of HBOC in a rat model. Renal deoxyHb levels will be rapidly assessed during and subsequent to HBOC injection using BOLD-MRI. Renal blood flow will be quantified with dynamic MRI (Gd-DPTA injection). Blood pressure will be monitored with an MRI compatible transducer. Hb content of cortex and medulla will be measured at the end of experiments. Optimization of the dynamic imaging protocol is ongoing.

Collaborators: Andrew Baines, Mike Noseworthy

#### *6. DTI in brain tumours (FDi)*

Diffusion tensor imaging identification and characterization of white matter tracts according to the direction and degree of anisotropic water diffusion within them. Quantifying the degree of



anisotropy in terms of the quantity, fractional anisotropy, or FA offers insight into white matter development and degradation, for example in the presence of infiltrating cerebral neoplasm. Additionally, white matter tractography or fiber tracking based on the same data acquisition allows descriptive delineation of white matter fiber paths and their potential displacement by mass lesions.

With a view to quantifying the intactness of white matter in the vicinity of tumor, we define a quantity FDi, or fiber density index, as a indicator of the density of white matter fibers within the bundle passing through a single pixel or region of interest. We have correlated this measure with the related quantity, fractional anisotropy. This work resulted in 2 abstracts and 1 paper.

Collaborators: Fang Liu, Tim Roberts

## **Projects by Adrian Crawley, PhD – UHN**

### *1. fMRI studies*

Apart from the autobiographical memory and pain studies listed as publications below, I have been a co-investigator responsible for the fMRI component of a study concerning possible cognitive decline in some breast-cancer patients undergoing chemotherapy. Our fMRI study of a working memory task has shown differences in the anterior cingulate cortex in patients self-reporting cognitive problems. The PI is Dr. Ian Tannock (PMH), who has now applied to major funding agencies on the basis of our preliminary results.

Furthermore, I am involved in the assessment of methods to analyze multiple subject fMRI data in the presence of task-correlated motion. This project is a continuation of previous work that used power spectrum and histogram methods to identify the amount of task-correlated motion in single-subject fMRI data. I have now completed an analysis of how motion that is task-correlated within individual fMRI scans is often sufficiently random in phase across subjects that a random-effects analysis of multiple-subject data does not usually require the addition of motion regressors at the individual-subject level of analysis. I am about to write these results up in terms of a full mixed-effects analysis.

### *2. Assessment of changes in oxygen extraction in hypoxic tumors with 100% O2 inhalation*

We are currently scanning tumour patients using BOLD and spin labelling sequences during controlled changes in pCO<sub>2</sub> and pO<sub>2</sub> using a gas delivery system developed by Dr. Fisher's lab. One goal of this project is to evaluate whether the vasodilative effects of increased pCO<sub>2</sub> improve the supply of radiosensitizing O<sub>2</sub> to hypoxic tumours, or whether normal tissue dilates preferentially and steals blood flow from the tumour. My main involvement is to establish the feasibility of using the BOLD measurements to measure whether hypoxic tumours can extract the additional oxygen supplied during 100% O<sub>2</sub> inhalation. Under these conditions, normal tissue demonstrates a reduced venous dHb concentration (relative to breathing room air) detectable by the BOLD sequence. We anticipate that it should be possible to detect increased oxygen extraction in hypoxic tumours as an absence of the normal BOLD contrast.

Collaborators: Cynthia Menard, Joe Fisher, Dave Mikulis, Julien Poublanc, Andrea Kassner

### *3. Voxel-based morphometry (VBM) studies*

I was significantly involved in a VBM project looking at atrophy in the sensorimotor system of spinal cord injured subjects. The absence of atrophy in primary motor cortex (assessed using VBM and also manual morphometry of the hand representation area in M1) was reported in paper listed below. A second paper detailing positive results in S1 that correlate with performance deficits has recently been submitted.

I have established an ongoing collaboration with Dr. Eva Chow (CAMH) to perform a variety of VBM studies to complement the manual morphometry studies (conducted by Dr. Kabani's lab) on subjects with VCFS (a genetic deletion syndrome that predisposes individuals to schizophrenia). One of our summer students is about to submit for publication a VBM comparison of schizophrenic vs non-schizophrenic VCFS subjects.

## **Projects by Marshall Sussman, PhD - UHN**

### *1. Motion compensation – SIMNAV*

The first area of my research deals with the development of techniques for motion compensation. This technique is known as the SIMNAV method. The advantage over conventional methods is that it uses the image data itself, rather than external devices such as ECG, to correct for motion. As a result, it is potentially more accurate and robust than conventional motion compensation methods. An additional advantage is that this approach may be applied to any type of motion. As a result, there are a broad range of applications. To date, we have explored the applications of cardiac imaging and the assessment of joint kinematics with this technique. Other areas, such as abdominal and neuro imaging, are planned for the future. In the past year, this work has resulted in 1 abstract and 1 paper.

Collaborators: Jim Li, Larry White

### *2. T<sub>2</sub> Mapping*

A second area of interest is T<sub>2</sub> mapping in cardiac imaging. To date, we have successfully implemented at UHN a T<sub>2</sub> mapping pulse sequence, as well as T<sub>2</sub> mapping post-processing software. The T<sub>2</sub> value of tissue can potentially provide information in a broad range of disease processes. At the present time, we are using it to assess the state of the myocardium in patients with cardiomyopathies, patients with iron overload disease, and to quantify blood oxygen level. Utilizing these techniques, we are about to participate in an international multi-centre trial regarding T<sub>2</sub> mapping and iron quantification in the heart and liver (TCRN – Thalassemia Clinical Research Network).

We have also implemented a T<sub>2</sub> mapping pulse sequence to evaluate the degeneration of cartilage in surgically-treated horse knees. This project was carried out under funding provided by a Canadian Arthritis Foundation (CAN) grant. T<sub>2</sub> maps were obtained from a total of 10

horse knees. At the present time, a manuscript is being prepared. We have also begun some investigations into more sophisticated  $T_2$  mapping techniques, employing multi-exponential  $T_2$  decay. This was the focus of a co-op student project. Data analysis is under way.

### *3. Diffusion-weighted imaging of cartilage*

Since cartilage is relatively thin (~2-3mm), high-resolution images are required. This presents a significant challenge for conventional diffusion-weighted imaging techniques such as single-shot EPI (SS-EPI). SS-EPI is sensitive to off-resonance effects, which gives rise to image warping and blurring. As a consequence, we have begun to explore the use of a new pulse sequence, diffusion-weighted (DW) PROPELLER to cartilage. DW-PROPELLER is a multi-shot fast spin echo technique. Preliminary results have demonstrated significantly less off-resonance sensitivity than conventional SS-EPI. In the past year, this work has resulted in 1 abstract publication.

Collaborators: Larry White et al.

### *4. Surgical navigation*

In surgical procedures, one must often navigate through the body based on information contained within previously acquired medical images. A major challenge associated with this task is correlating the information contained within the images with the actual coordinate system of the body. For this project, a surgical navigation system has been developed which tracks the position of surgical instruments during the surgical procedure via an infrared camera. This tracking information is displayed graphically and in real-time on top of the previously-acquired images. This allows the surgeon to directly correlate the surgical and image coordinate systems. This navigation system has been used successfully in brain biopsy procedures, as well as lymph node excisions from the abdomen. In the past year, this work has resulted in 1 abstract publication.

Collaborators: Walter Kucharczyk et al.

### *5. Catheter steering*

Endovascular procedures performed under fluoroscopic guidance often require the use of metal guidewires for steering catheters along their desired paths. The use of metal guidewires in interventional MRI is rendered problematic due to RF resonant heating of conductive metals in the MR environment, and by susceptibility artifacts. This project deals with the development of techniques for non-guidewire catheter steering. These involve the application of electric currents to the catheter, and relying on Lorentz forces to torque the wire in the presence of the main magnetic field associated with MRI. The main issues currently being addressed are the design, characterization, and optimization of the catheter design. In the past year, this work has resulted in 2 abstract publications. A manuscript is being prepared based on this work.

Collaborators: Fabio Settecase, Tim Roberts, Walter Kucharczyk

## *6. Miscellaneous*

I am also involved in various other miscellaneous projects. These include the development of novel data acquisition strategies (Spiral-PR), the development of real-time MR techniques, the development of motion tracking algorithms, the development of parallel imaging methodologies, and the investigation of novel diffusion-weighted imaging strategies. In total, this work has resulted in 3 papers, and 3 abstracts.

### **Projects by Chris Macgowan, PhD - HSC**

My primary interest and contributions involve the development of unique real-time measurements of blood flow using MR. I have developed new acquisition and processing methods to measure the velocity spectrum of blood. Unlike Doppler ultrasound, MR-based methods do not need an acoustic window to the vessel, allowing radiologists to conveniently and accurately assess flow in large thoracic vessels. Also, these real-time methods do not require ECG gating and so are not affected by arrhythmia. In addition, I developed a processing method to improve the accuracy of peak velocity measurements. These are used to estimate pressure gradients across stenotic valves and vessels, a clinical measure of stenotic severity. I have also designed methods of measuring the pulse-wave velocity in real-time, a parameter related to vascular compliance. It is known that the mechanical properties of vessel walls, such as compliance, provide an indication of vascular function that may not be anatomically evident. Changes in vascular compliance are associated with diseases such as atherosclerosis, hypertension, and the Marfan syndrome. Collectively, these contributions are helping guide the field of quantitative flow measurement.

Recent work in my lab has detailed the behaviour of injected contrast agents as they pass through the pulmonary system of children with congenital heart disease. This information has enabled higher quality angiograms to be obtained from these patients. Such anatomical information complements the physiological blood-flow information described above to provide a more complete picture of cardiovascular pathology. Recent publications from this work etc. are listed below.

Collaborators in Medical Imaging: Shi-Joon Yoo, Marshall Sussman

### **Magaret Chen, PhD - HSC**

My primary research interest is functional MRI of the microcirculation and cell-specific imaging, involving basic physics research on MRI methodologies and applications research both in animal models of disease and in clinical trials. My two primary applications research foci are:

1. quantitative MRI of neovascularization in tissue-engineered urinary bladder in a rabbit model using novel contrast agents
2. MRI of anti-angiogenic cancer treatment in a mouse model

In conjunction with these studies are basic physics developments for rapid, accurate, quantitative MRI. These include 3D, high-resolution T1-mapping for tissue characterization and localization of MR contrast agents. More specific to microvessel functional imaging are acquisition and analysis methods for dynamic contrast-enhanced MRI (DCE-MRI). Recent progress includes reliable imaging of blood signal during the passage of contrast agent, and improved understanding of sources of inaccuracy in current models of contrast uptake. Future efforts will focus on developing more accurate analysis models and rapid imaging methods to provide reliable, quantitative assessment of microcirculation function and its modulation in various clinical settings. This research resulted in multiple abstracts and publications (see below).

### **Projects by Douglas Cheyne, PhD - HSC**

My research is focused on the development of neuro-imaging methods using Magnetoencephalography (MEG) – a new imaging technology that monitors brain function non-invasively, by detecting small magnetic fields produced by neural activity. We use mathematical models to localize the generators of the measured fields to produce images of activity patterns throughout the brain. This neuromagnetic imaging method has applications in the diagnosis of abnormal brain activity in disorders such as childhood epilepsy, as well as aiding in the localization of various functional cortical areas prior to surgery. Our laboratory is developing new analysis methods for the application of neuromagnetic imaging to the study of various sensory, motor and cognitive processes and their impairments in adults and children. Our goal is to provide new tools for the study of basic and higher brain function in health and disease.

Projects currently underway include: mapping the organization of auditory and somatosensory and language areas in children; measuring cortical oscillatory activity associated with somatosensory stimulation and movement; studies of motor inhibition in childhood disorders such as ADHD; neuromagnetic imaging of motor cortex function in children with cerebral palsy; and localization of neural activity associated with visuomotor integration. Selected publications from this work are listed below.

## **Faculty List – non-clinical**

(Academic Rank as of June 30, 2005)

▪ Timothy Roberts	Professor	Director, Research Program, UHN
▪ John A. Rowlands	Professor	Senior Scientist, SWCHSC
▪ Martin J. Yaffe	Professor	Senior Scientist, SWCHSC
▪ Sylvain Houle	Associate Professor	Director, PET Centre Centre for Addiction and Mental Health
▪ Douglas Cheyne	Associate Professor	Senior Scientist, HSC
▪ Curtis B. Caldwell	Assistant Professor	Physicist, SWCHSC
▪ Adrian Crawley	Assistant Professor	MR Physicist, UHN
▪ Andrea Kassner	Assistant Professor	Scientist, UHN
▪ Christopher MacGowan	Assistant Professor	Scientist, HSC
▪ Marshall Sussman	Assistant Professor	MR Physicist, UHN
▪ George Tomlinson	Assistant Professor	Biostatistician, UHN
▪ Margaret Cheng	Assistant Professor	MR physicist, HSC
▪ Andrei Damyanovich	Assistant Professor	MR physicist, UHN

## Grants

Members of the Department of Medical Imaging (underlined) were investigators on the following grants, identified by the principal investigator, other investigators, project title, sponsor, total amount of grant, and start and end dates of the funding period.

Bitar R – CHIR Research Fellowship, \$50,000 pa, 2004-2007.

Bitar R – CHAR/Amsterdam Health Development Award, First Canadian Recipient, \$12,000.

Caldwell CB, Mah K, and Poon I. “Effect of the use of FDG-PET/CT and automated image segmentation on observer variation in target volume delineation”. National Cancer Institute, Canada 2005-2006

Caldwell CB, Mah K, Turksen IB, Ung YC, Danjoux CE, Ehrlich LE – Principle Investigators.. “Automated target definition for radiation treatment” Ontario Cancer Research Network, \$108,667/year (3 years total) 2004-2006

Caldwell CB, Mah K, Turksen IB, Ung YC, Danjoux CE, Ehrlich LE – Principle Investigators. “A Fuzzy logic expert system for radiation targeting” Philips Medical Systems, Inc. \$125,000/year (2 years total) 2004-2005

Caldwell CB and Mah K – Principle Investigators. “Multimodality functional and dynamic imaging for target definition: integration into cancer therapy” (project within the Ontario Consortium for Image Guided Therapy and Surgery) Funding Institution: Ontario Research and Development Challenge Fund \$277,140. 2000-2004

Caldwell CB, Pignol JP, Keller B, Beachey D, Reznik. “On line Gamma-camera Imaging of 103-Palladium Seed (OGIPS) for Permanent Breast Seed Implantation”. Canadian Breast Cancer Foundation - Ontario Chapter, \$99,100/year (3 years total). 2005-2007

Cheyne D - Principal Investigator: CIHR – Research Grant “Development of Neuromagnetic Imaging Methods for Measuring Oscillatory Brain Activity”, \$276,054, 2003- 2006.

Cheyne D - Co-Investigator. CIHR – New Emerging Team (NET) Grant “Inattention, impulsiveness, and restlessness in childhood: heritability, genetics, neuropsychology and psychophysiology (KIDNET).” \$1,249,585, 2002 – 2007.

Cheyne, D – Principal Investigator. NSERC – Individual Research Grant, “Mapping the Human Sensorimotor Cortex using Spatially Filtered Magnetoencephalography.” \$40,000, 2002-2004.

Chiarelli A, Yaffe MJ, et al, Effect of Mammographic Density and Estrogen Replacement Therapy on Detection of Breast Cancer, National Cancer Institute of Canada -CBCRI, \$C189,567, 2001.

Crawley A – Co-investigator. Canadian Breast Cancer Research Alliance – Developmental and Exploratory (DEX) Research Grant, PI: I Tannock. Cognitive impairment associated with

chemotherapy for breast cancer: an exploratory case-controlled study, 2004-2005

Crawley A – Co-investigator. CIHR Operating Grant, PI: L deNil. Neuroimaging studies of auditory processing in individuals who stutter, \$82,344 pa 2004-2009

Crawley A – Co-investigator. CIHR Operating Grant, PI: E Chow. 22q11 deletion syndrome: Children at high risk for psychiatric disorders, 2005-2008

Friedenreich CM, Courneya KS, McTiernan A, Ballard-Barbash R, Irwin ML, Yaffe M, Boyd NF, Terry T, Brant RF, Jones CJ, Cameron B, ALPHA Trial: Alberta Physical Activity and Breast Cancer Prevention Trial, Canadian Breast Cancer Research Initiative, \$1,104,147, 2002-2005

Henkelman RM (Principal Investigator), Bronskill MJ, Burns PN, Foster FS, Plewes DB, Rowlands JA, Wright GA, Yaffe MJ. NCI Canada (Terry Fox Program Project) “Medical Imaging for JA Cancer” \$C 1,425,844 pa 07/2001 – 06/2006

Kasap SO, Rowlands JA. NSERC (Strategic Grant) “Direct Conversion Flat Panel X-ray Image Detectors for Medical Imaging” \$C 87,500 pa 10/2002 - 10/2005

Kassner A, Roberts TPL. – Principle Investigators. “Brain tumor characterization using advanced neuro MR imaging techniques.” Research & Development Fund (University of Toronto, Dept of Medical Imaging). \$50,000 (total), 2003-2006.

Kassner A – Principle Investigator. “Can stabilization of the blood brain barrier be achieved in ischemic endothelium using corticosteroids: an MRI permeability study in a rodent model of acute ischemic stroke.” Dean’s Fund (University of Toronto, Faculty of Medicine). \$ 10,000 (total), 2005-2006

Kassner A – Principle Investigator. “Widening the therapeutic window and reducing treatment morbidity in acute stroke: assessment of blood-brain-barrier integrity with permeability MRI.” Canadian Institutes of Health Research (CIHR). \$ 260,000 (total), 2005-2008

Kassner A – Principle Investigator. “Stabilization of the blood-brain-barrier (BBB) will delay progression of BBB defects: a permeability study in a rat model using MRI” Project date: UHN Medical Imaging Excellence and Research Award. \$ 30,000, 2005-2006

Macgowan C – Co-Applicant. Heart and Stroke Foundation (Grants-in-Aid), PI: G Cohen. Left Ventricular Mass Regression Following Stentless and Stented Aortic Valve Replacement: Follow up of a Randomized Trial, \$89,350 (total), 2004/07 – 2006/06

Macgowan C – Principle Investigator. Canadian Institutes of Health Research (Operating Grant), Co-Applicant: S-J Yoo. MRI Assessment of Pulmonary Hemodynamics within the Lungs, \$212,279 (total), 2004/10 – 2007/09



Nathan A, Rowlands JA, Kasap SO, Karim K. “Novel approaches to flat panel detectors” NSERC (Collaborative Health Research Project) \$C 162,000 pa 5/2004 – 5/2007

Oram-Cardy J. CIHR Post-Doctoral Fellowship, \$47,500 stipend plus \$3,500 pa, 2003-2005

Roberts, TPL. Canada Research Chair in Imaging Research. \$500,000. 1/2002-12/2006

Robaey P, Schachar R, Cheyne D, Perusse D: CIHR – New Emerging Team Grant, “Inattention, impulsiveness, and restlessness in childhood: heritability, genetics, neuropsychology and psychophysiology (KIDNET)”; Amount: \$1,249,585; 2002 – 2007;

Rowlands JA (Principal Investigator), Zhao W, Pang G and Fahrig R. National Institutes of Health “Low cost x-ray imager using liquid crystals: Application of x-ray light valves to very low cost chest x-ray imagers” \$US 225,000 pa 08/2003 - 06/2008

Rowlands JA (Principal Investigator), Robert N, Fort S. Image Guided Optimisation of X-ray Cardiac Angiography, Canadian Institutes of Health Research (Operating Grant), \$C 75,121, 01/10/2002 – 30/09/2005

Rowlands JA. + 9 Co-applicants, Imaging Research Centre for Cardiac Interventions, Ontario Innovation Trust, \$C 6,109,294 total, 06/2002 - 06/2005

Rowlands JA – Co-Investigator (Wright G, PI) Ontario R&D Challenge Fund “Cardiac Imaging Centre of Excellence (Cardiac Flat Panel Imagers)” \$C 3,118,244 pa 01/2001 - 12/2005

Yaffe MJ – Principal Investigator, Rowlands JA (Co-Investigator), et al. Ontario R&D Challenge Fund: “Ontario Centre of Excellence in Breast Cancer Imaging Research (a-Se Detectors for Digital Mammography)” \$C 1,087,922 pa 01/2001 - 12/2004

Zhao W, Rowlands JA, Pang G. US Army Breast Cancer Initiative “SAPHIRE: A New Flat-Panel Digital Mammography Detector with Avalanche Photoconductor and High-Resolution Field Emitter Readout” \$US 100,000 pa 01/2004 - 12/2006

Zhao W, Rowlands JA, Street R, National Institutes of Health “Flat panel x-ray imaging detector with avalanche gain” \$US 350,000 pa 08/2003 - 06/2008

## **Publications**

Members of the Department of Medical Imaging (underlined) are also members of the Research Division.

Addis DR, McIntosh AR, Moscovitch M, Crawley AP, McAndrews MP. Characterizing spatial and temporal features of autobiographical memory retrieval networks: a partial least squares approach. NeuroImage 2004 December 23(4):1460-1471.

Addis DR, Moscovitch M, Crawley AP, McAndrews MP. Recollective qualities modulate hippocampal activation during autobiographical memory retrieval. *Hippocampus*. 2004;14(6):752-62.

Al-Kwif O, Kim JK, Stainsby J, Huang Y, Sussman MS, Farb RI, Wright GA. Pulsatile Motion Effects on 3D Magnetic Resonance Angiography: Implications for Evaluating Carotid Artery Stenoses. *Magnetic Resonance in Medicine*. 2004 Sep;52(3):605-11.

Arslan MC, Caldwell CB, Turksen IB. Comparison of FCM clustering with crisp k-mean clustering in radiation treatment planning for non-small cell lung carcinoma *J Nuclear Medicine* 2005; 46(5) p.462P.

Behl P, Caldwell CB, Cotter A, Black SE. Does cholinergic therapy benefit regional brain perfusion on SPECT in moderate stage Alzheimers Disease (AD)? *J Nuclear Medicine* 2005, 46(5), p. 294P (supplement)

Bitar R, Bezjak R, Mah K, Loblaws DA, Gotoviec AP, Devins G. Does tumour status influence cancer patient's satisfaction with the doctor-patient interaction? *Support Care Cancer* 2004;12:30-40.

Bitar R, Weiser WJ, Avendaño M, Derkach P, Low D, Muradali D. Chest radiographic manifestations of Severe Acute Respiratory Syndrome in health care workers: the Toronto experience. *American Journal of Roentgenology* 2004;182:45-48.

Callen DJ, Black SE, Caldwell CB, Grady CL. The influence of sex on limbic volume and perfusion in AD. *Neurobiol Aging*. 2004 Jul;25(6):761-70.

Cheng HL, Chen J, Babyn PS, Farhat WA. Dynamic Gd-DTPA enhanced MRI as a surrogate marker of angiogenesis in tissue-engineered bladder constructs: a feasibility study in rabbits. *Journal of Magnetic Resonance Imaging* 21, 415-423, 2005.

Cheng H-LM, Purcell CM, Bilbao JM, Plewes DB. Usefulness of contrast kinetics for predicting and monitoring tissue changes in muscle following thermal therapy in long survival studies, *Journal of Magnetic Resonance Imaging* 19(3), 329-341, 2004.

Chong R, Caldwell CB, Mah K. Cost effectiveness of <sup>18</sup>F-FDG PET/CT on radiation therapy for non-small cell lung cancer: a Canadian perspective *J Nuclear Medicine* 2005, 46(5), p. 427P (supplement)

Cotter A, Caldwell CB, Black SE. SPECT Perfusion in the Posterior Cingulate combined with Medial Temporal Lobe Width can help with diagnosis of Alzheimer's Disease *J Nuclear Medicine* 2005, (5), p. 122P (supplement)

Crawley AP, Jurkiewicz MT, Yim A, Heyn S, Verrier MC, Fehlings MG, Mikulis DJ. Absence of localized grey matter volume changes in the motor cortex following spinal cord injury. *Brain Res*. 2004 Nov 26;1028(1):19-25.

Davis KD, Pope GE, Crawley AP, Mikulis DJ. Perceptual illusion of "paradoxical heat" engages the insular cortex. *J Neurophysiol*. 2004 Aug;92(2):1248-51.

Dominguez LG, Wennberg R, Gaetz W, Cheyne D, Snead III OC, Velazquez JLP. (2005) Enhanced synchrony in epileptiform activity? Local versus distant synchronization in generalized seizures. *Journal of Neuroscience* 25: 8077-8084.

Gaetz W, Cheyne D. Localization of sensorimotor cortical rhythms induced by tactile stimulation using spatially filtered MEG. *Neuroimage*. 2005 Dec 1; [Epub ahead of print]

Garcia Dominguez L, Wennberg RA, Gaetz W, Cheyne D, Snead OC 3rd, Perez Velazquez JL. Enhanced synchrony in epileptiform activity? Local versus distant phase synchronization in generalized seizures. *J Neurosci*. 2005 Aug 31;25(35):8077-84.

Gray JE, Archer BR, Butler PF, Hobbs BB, Mettler FA Jr, Pizzutiello RJ Jr, Schueler BA, Strauss KJ, Suleiman OH, Yaffe MJ. Reference values for diagnostic radiology: application and impact. *Radiology*. 2005 May;235(2):354-8. Epub 2005 Mar 9.

Hariri M, Wood GA, DiGrappa MA, MacPherson M, Backman SA, Yaffe MJ, Mak TW, Boyd NF, Khokha R. Experimental manipulation of radiographic density in mouse mammary gland. *Breast Cancer Res*. 2004;6(5):R540-5. Epub 2004 Jul 09.

Hong CC Tang B-K, Hammond GL, Tritchler D, Yaffe MJ, Boyd. NF. Cytochrome P450 1A2 (CYP1A2) activity and risk factors for breast cancer: a cross-sectional study. *Breast Cancer Research* 6: R352-365, 2004.

Hong CC, Tang B-K, Rao V, Agarwal S, Martin L, Tritchler D, Yaffe MJ, Boyd NF. Cytochrome P450 1A2 (CYP1A2) activity, mammographic density, and oxidative stress: a cross-sectional study. *Breast Cancer Research* 6: R338-351, 2004.

Humphries T, Oram Cardy JE, Worling DE, Peets K. Narrative comprehension and retelling abilities of children with nonverbal learning disability. *Brain and Cognition* 2004;56:77-88.

Kasap SO, Rowlands JA, Baranovskii SD, K Tanioka. Lucky drift impact ionization in amorphous semiconductors. *Journal of Applied Physics* 2004;96:2037-2048.

Kassner A, Roberts TP. Beyond perfusion: assessment of permeability and cerebral vascular reactivity. *Top Magn Reson Imaging* 2004;15(1):58-65.

Kassner A, Roberts TPL, Taylor K, Silver F, Mikulis D. Prediction of hemorrhagic transformation in acute ischemic stroke using dynamic contrast-enhanced permeability MRI. *AJNR* 2005;26: 2213-2217.

Kubota M, Ferrari P, Roberts TP. Human neuronal encoding of English syntactic violations as revealed by both L1 and L2 speakers. *Neurosci Lett*. 2004 Sep 23;368(2):235-40.

Kusano M, Caldwell CB, Lanctot KL, Chow TW. Evaluation and Refinement of an MR-Based Brain Pet Partial Volume Correction Method Using The Zubal Brain Phantom. J Nuclear Medicine 2005, 46(5), p. 452P (supplement)

Kusano ML, Caldwell CB. Generation Of Realistic Computer-Simulated PET/CT Tumours Using Fractal Analysis And Motion Modeling For Evaluation Of Radiation Target Definition Methods J Nuclear Medicine 2005 p 164P(supplement).

Lanctot KL, Herrmann N, Nadkarni NK, Leibovitch FS, Caldwell CB, Black SE. Medial temporal hypoperfusion and aggression in Alzheimer disease. Arch Neurol. 2004 Nov;61(11):1731-7.

Lee BY, Charron M. Chapter XX: Nuclear Cardiology and Positron Emission Tomography, Ventricular Function and Blood Flow in Congenital Heart Disease. Editor Fogel, Springer Verlag January 2005.

Levy N, Lobaugh N, Caldwell C, Gao FQ, Black SE. Impact of cerebrovascular comorbidity on prefrontal SPECT perfusion imaging in Alzheimer's Disease. J Nucl Med 2005; 46(5), p.214P.

Meyer JH, Houle S, Sagrati S, Carella A, Hussey DF, Ginovart N, Goulding V, Kennedy J, Wilson AA. Brain Serotonin Transporter Binding Potential Measured With Carbon 11-Labeled DASB Positron Emission Tomography: Effects of Major Depressive Episodes and Severity of Dysfunctional Attitudes. Arch Gen Psychiatry. 2004 Dec;61(12):1271-9.

Mikulis DJ, Krolczyk G, Desal H, Logan W, Deveber G, Dirks P, Tymianski M, Crawley A, Vesely A, Kassner A, Preiss D, Somogyi R, Fisher JA. Preoperative and postoperative mapping of cerebrovascular reactivity in moyamoya disease by using blood oxygen level-dependent magnetic resonance imaging. J Neurosurgery 2005;103(2): 347-55.

Macgowan CK, Kellenberger CJ, Detsky JS, Roman K, Yoo SJ. Real-time magnetic resonance velocimetry: an in-vivo evaluation. JMRI March 2005; 21:297-304.

Nield LE, Qi XL, Valsangiacomo ER, Macgowan CK, Wright GA, Hornberger LK, Yoo SJ. In-vivo MRI measurement of blood oxygen saturation in children with congenital heart disease. Pediatric Radiology February 2005; 35(2):179-185. 2004 Oct 14; [Epub ahead of print]

Oram Cardy JE, Ferrari P, Flagg EJ, Roberts W, Roberts TP. Prominence of M50 auditory evoked response over M100 in childhood and autism. Neuroreport. 2004 Aug 26;15(12):1867-70.

Pang G, Rowlands JA. Development of high quantum efficiency, flat panel, thick detectors for megavoltage x-ray imaging: a novel direct-conversion design and its feasibility. Med Phys. 2004 Nov;31(11):3004-16.

Pang G, Rowlands JA. High quantum efficiency megavoltage flat panel imaging detector: Investigation of feasibility. Medical Physics 2004;31:3004-3016.

Pisano ED, Yaffe MJ. Digital mammography. *Radiology*. 2005 Feb;234(2):353-62.

Plewes DB, Luginbuhl D, Macgowan CK, Sack I. An inductive method to measure mechanical excitation spectra for MRI elastography. *Concepts in Magnetic Resonance: Part B* 2004; 21B:32-39.

Praschak-Rieder N, Hussey D, Wilson AA, Carella A, Lee M, Dunn E, Willeit M, Bagby RM, Houle S, Meyer JH. Tryptophan depletion and serotonin loss in selective serotonin reuptake inhibitor-treated depression: an [(18)F] MPPF positron emission tomography study. *Biol Psychiatry*. 2004 Oct 15;56(8):587-91.

Preda A, Novikov V, Moglich M, Turetschek K, Shames DM, Brasch RC, Cavagna FM, Roberts TP. MRI monitoring of Avastin antiangiogenesis therapy using B22956/1, a new blood pool contrast agent, in an experimental model of human cancer. *J Magn Reson Imaging*. 2004 Nov;20(5):865-73.

Ravi A, Caldwell CB, Keller B, Reznik A, Beachey D, Pignol JP. (Ogips) online gamma-camera imaging of <sup>103</sup>paladium brachytherapy seeds *J Nuclear Medicine* 2005, 46(5), p. 494P (supplement)

Reznik A, Lui BJ, Rowlands JA. An amorphous selenium based positron emission mammography camera with avalanche gain. *Technol Cancer Res Treat*. 2005 Feb;4(1):61-7.

Robert N, Komljenovic PT, Fort S, Rowlands JA. Real-time image equalization for coronary X-ray angiography. *Catheter Cardiovasc Interv*. 2005 Jun;65(2):288-94.

Robert N, Komljenovic PT, Grant R, Sussman MS, Rowlands JA. A lesion stabilization method for coronary angiography. *Phys Med Biol*. 2005 Mar 21;50(6):1295-312. Epub 2005 Mar 2.

Roberts TP, Flagg EJ, Gage NM. Vowel categorization induces departure of M100 latency from acoustic prediction. *Neuroreport*. 2004 Jul 19;15(10):1679-82.

Roberts TP, Liu F, Kassner A, Mori S, Guha A. (2005) Fiber Density Index Correlates with Reduced Fractional Anisotropy in White Matter of Patients with Glioblastoma. *AJNR* 26: 2183-2186.

Roman KS, Kellenberger CJ, Farooq S, Macgowan CK, Gilday DL, Yoo SJ. Comparative imaging of differential pulmonary blood flow in patients with congenital heart disease: magnetic resonance imaging versus lung perfusion scintigraphy. *Pediatric Radiology* March 2005; 35(3):295-301. 2004 Oct 15; [Epub ahead of print]

Roman KS, Kellenberger CJ, Macgowan CK, Coles J, Redington A, Benson LN, Yoo SJ. How is pulmonary arterial blood flow affected by pulmonary venous obstruction in children? A phase-contrast MR study. *Pediatric Radiology* June 2005; 35(6):580-586.

Sack I, Macgowan CK, Samani A, Luginbuhl C, Oakden W, Plewes DB. Observation of non-linear shear wave propagation using Magnetic Resonance Elastography. *Magnetic Resonance in Medicine* October 2004; 52(4)-842-850.

Scollard DA, Caldwell CB, Reilly RM, Vallis KA, Hendler A. Radiation safety considerations in a phase I trial of indium-111 labelled human epidermal growth factor in patients with metastatic breast cancer *J Nuclear Medicine* 2005, 46(5), p. 504P (supplement)

Sewitch MJ, McCusker J, Dendukuri N, Yaffe MJ. Depression in frail elders: impact on family caregivers. *Int J Geriatr Psychiatry*. 2004 Jul;19(7):655-65.

Sussman MS, Robert N, Wright GA. Adaptive averaging for improved SNR in real-time coronary artery MRI. *IEEE Trans Med Imaging*. 2004 Aug;23(8):1034-45.

Taniguchi M, Kato A, Ninomiya H, Hirata M, Cheyne D, Robinson SE, Maruno M, Saitoh Y, Kishima H, Yoshimine T. (2004) Cerebral motor control in patients with gliomas around the central sulcus studied with spatially filtered magnetoencephalography. *Journal of Neurology, Neurosurgery and Psychiatry* 75: 466-471.

Tauscher J, Hussain T, Agid O, Verhoeff NP, Wilson AA, Houle S, Remington G, Zipursky RB, Kapur S. Equivalent occupancy of dopamine D1 and D2 receptors with clozapine: differentiation from other atypical antipsychotics. *Am J Psychiatry*. 2004 Sep;161(9):1620-5.

Turetschek K, Preda A, Novikov V, Brasch RC, Weinmann HJ, Wunderbaldinger P, Roberts TP. Tumor microvascular changes in antiangiogenic treatment: assessment by magnetic resonance contrast media of different molecular weights. *J Magn Reson Imaging*. 2004 Jul;20(1):138-44.

Vallis KA, Reilly R, Scollard DA, Petronis J, Caldwell CB, Hendler A, Oza A. Phase I Clinical Trial of 111In-Human Epidermal Growth Factor (111In-hEGF) in Patients with Metastatic EGFR-Positive Breast Cancer. *J Nuclear Medicine* 2005, 46(5), p. 152P (supplement)

Verhoeff NP, Wilson AA, Takeshita S, Trop L, Hussey D, Singh K, Kung HF, Kung MP, Houle S. In-vivo imaging of Alzheimer disease beta-amyloid with [11C]SB-13 PET. *Am J Geriatr Psychiatry*. 2004 Nov-Dec;12(6):584-95.

Warner E, Plewes DB, Hill KA, Causer PA, Zubovits JT, Jong RA, Cutrara MR, DeBoer G, Yaffe MJ, Messner SJ, Meschino WS, Piron CA, Narod SA. Surveillance of BRCA1 and BRCA2 mutation carriers with magnetic resonance imaging, ultrasound, mammography, and clinical breast examination. *JAMA*. 2004 Sep 15;292(11):1317-25.

Wiert M, Fournier LS, Novikov VY, Shames DM, Roberts TP, Fu Y, Shalinsky DR, Brasch RC. Magnetic resonance imaging detects early changes in microvascular permeability in xenograft tumors after treatment with the matrix metalloprotease inhibitor Prinomastat. *Technol Cancer Res Treat*. 2004 Aug;3(4):377-82.

Yaffe MJ. What should the burden of proof be for acceptance of a new breast-cancer screening technique? *Lancet*. 2004 Sep 25;364(9440):1111-2.

Yaffe MJ, Mainprize JG. Detectors for digital mammography. *Technol Cancer Res Treat*. 2004 Aug;3(4):309-24.

Yaffe MJ, Gupta G, Still S, Boillat M, Russillo B, Schiff B, Sproule D. Morbidity and mortality audits: "How to" for family practice. *Can Fam Physician*. 2005 Feb;51:234-9.

Yaffe MJ, Primeau F, McCusker J, Cole MG, Belzile E, Dendukuri N, Elie M, Laplante J. Psychiatric outpatient consultation for seniors. Perspectives of family physicians, consultants, and patients/family: a descriptive study. *BMC Fam Pract*. 2005 Apr 19;6(1):15.

Zhang B, Mah K, Caldwell CB, Danjoux C, Tirona R. Individual Target Volume Definition in NSCLC Using PET. *Medical Physics* June 2005;32(6):1901.

Zhang B, Mah K, Caldwell CB, Danjoux C. Individualized tumor motion from pet for radiation therapy targeting. *J Nuclear Medicine* 2005;46(5):40P (supplement).

Zhao W, Ristic G, Rowlands JA. X-ray imaging performance of structured cesium iodide scintillators. *Medical Physics*. 2004 Sep;31(9):2594-605.

### **Books or Book Chapters**

Roberts TPL. Perfusion MRI. A perspective in 2004. *Topics in MRI*, Series editor: Atlas, S. LWW Press (2004)

Schnall MD, Beckerman BG, Nishikawa RM, Hollebeek R, Pisano ED, Yaffe MJ, Behlen FM, Payne P. National digital mammography archive. In Karellas A and Giger ML, eds. *RSNA Categorical Course on Diagnostic Radiology Physics: Advances in Breast Imaging – Physics, Technology, and Clinical Applications* RSNA Publications 179-189, 2004.

Yaffe MJ, Jong RA. Advances in digital mammography: image processing, digital subtraction and dual-energy techniques. In Karellas A and Giger ML, eds. *RSNA Categorical Course on Diagnostic Radiology Physics: Advances in Breast Imaging – Physics, Technology, and Clinical Applications* RSNA Publications 119-134, 2004.

### **Abstracts and Scientific Presentations**

Al-Kwif O, Kellenberger CJ, Wright GA, Macgowan CK. Evaluating Contrast Kinetics in Pediatric Patients by Acquiring 2D Images During 3D Contrast Enhanced Acquisition. *Imaging Network Ontario* (2005)

Biswas L, Detsky JS, Stainsby JA, Yoo SJ, Wright GA, Macgowan CK. Design of A Real-time Magnetic Resonance Imaging Interface: Case Study of Real-Time MR Blood-Flow Measurement. *Imaging Network Ontario* (2005)

Cheng HL, Wright GA. Rapid T1 Mapping by Variable Flip Angles: Analytic Expression for B1-error Influences and Optimization for large T1 Range. 13<sup>th</sup> Scientific Meeting of the ISMRM. Florida, May 2005

Cheng HL, Chen J, babyn PS, farhat WA. Dynamic Contrast-Enhanced MRI for Quantifying VEGF-Enhanced Neovascularization in Tissue-Engineered Bladder Constructs. 13<sup>th</sup> Scientific Meeting of the ISMRM. Florida, May 2005.

Cartwright L, Farhat W, Sherman C, Chen J, yeger H, Babyn P, Cheng HL. Tissue Engineered Bladder Neovascularization is Enhanced with VEGF and Quantifiable with Dynamic Contrast-Enhanced MRI. 52th Annual James C Kimbrough Urological Seminar, Honolulu, Jan 2005

Cheng HL, Purcell CM, Bilbao JM, Plewes DB. Contrast Kinetics for Improved Prediction and Assessment of Thermal Necrosis. 5<sup>th</sup> Interventional MRI Symposium, Boston Oct 2004

Cartwright L, Cheng HL, Chen J, Sherman C, Yeger H, Babyn P, Farwat W. Dynamic Magnetic Resonance Imaging: a Non-invasive Method to Assess Progress of Neovascularization in Tissue Engineered Bladder Constructs. American Academy of Pediatrics National Conference and Exhibition, San Francisco, Oct 2004

Flagg E, Kassner A, Poublanc J, Oram Cardy J, Roberts TPL. Reading, naming, and pluralizing: improving specificity of language activity mapping. 11<sup>th</sup> Annual meeting of the Organization for HBM. Toronto, June 2005.

Hunt D, Rowlands JA. The use of avalanche multiplication to eliminate noise in a-Se based flat panel x-ray detectors in the application of fluoroscopy. Young Investigators' and Image-Guided Therapy Symposium organized by The Great Lakes Chapter of the American Association of Physicists in Medicine (AAPM) held at London Regional Cancer Centre, November 2004. **15 young investigators participated in the symposium and Dylan received the Young Investigators Prize.**

Hunter DM, Belev G, DeCrescenzo G, Kasap SO, Mainprize JG, Mawdsley G, Rowlands JA, Smith C, Verpakhovski V, Yin S, Yaffe MJ. High resolution (20 cycles/mm) digital x-ray mammography using amorphous selenium directly coupled to CCD readout devices. *Medical Imaging 2004: Physics of Medical Imaging*, Proc. SPIE 5368:466-477 (2004)

Karim KS, Nathan A, Rowlands JA. High dynamic range pixel architectures for diagnostic medical imaging. *Medical Imaging 2004: Physics of Medical Imaging*, Proc. SPIE 5368:657-667 (2004) **Poster Award**



Kassner A, Poublanc J, Mikulis D, Crawley A. Mapping autoregulatory capacity using BOLD MRI and alternating state levels of pCO<sub>2</sub> - a reproducibility study. 11<sup>th</sup> Annual meeting of the Organization for HBM. Toronto, June 2005.

Kassner A, Poublanc J, Mikulis D, Crawley A. Mapping autoregulatory capacity through manipulation of pCO<sub>2</sub> with BOLD MRI – a reproducibility study. 13<sup>th</sup> Scientific Meeting of the ISMRM. Florida, May 2005.

Kassner A, Roberts TPL, Taylor K, Silver F, Mikulis D. Prediction of hemorrhagic transformation in acute ischemic stroke using dynamic contrast-enhanced permeability MRI. 13<sup>th</sup> Scientific Meeting of the ISMRM. Florida, May 2005.

Kassner A, Roberts TPL, Taylor K, Silver F, Mikulis D. Prediction of hemorrhagic transformation in acute ischemic stroke using dynamic contrast-enhanced permeability MRI. 43<sup>rd</sup> Annual Meeting of the ASNR. Toronto, May 2005.

Kellenberger CJ, Geoffray A, Al-Habshan F, Wright GA, Yoo SJ, Macgowan CK. Implementation of Automatically Triggered Elliptically-Centric Ordered Contrast-Enhanced MR Angiography for Imaging the Thoracic Vasculature in Paediatric Patients With Cardiovascular Disease. *European Society of Paediatric Radiology* (2004)

Kellenberger CJ, Roman KS, Macgowan CK, Yoo SJ. Pulmonary Arterial Blood Flow in Pulmonary Vein Stenosis: A Phase-Contrast MR Study. *Society of Pediatric Radiology* (2004)

Macgowan CK, Al-Kwif O, Varodayan F, Yoo SJ, Wright GA, Kellenberger CJ. Optimization of 3D Contrast-Enhanced Pulmonary MRA in Paediatric Patients with Cardiovascular Disease. *Magnetic Resonance Angiography Workshop* (2004)

Macgowan CK, Al-Kwif O, Yoo SJ, Kellenberger CJ, Wright GA. Optimization of 3D Contrast-Enhanced Pulmonary MR Angiography in Pediatric Patients with Cardiovascular Disease. *International Society of Magnetic Resonance in Medicine* (2005)

Macgowan CK, Kellenberger CJ, van Amerom JP, Roman K, Yoo SJ. Evaluation of Segmental Pulmonary Blood Flow Using Phase Contrast MRI and Correlation Analysis. *International Interdisciplinary Workshop on Flow and Motion* (2004)

Maleki N, Stainsby J, Kassner A, Roberts TPL. Improved SNR using complex subtraction in FAIR imaging. 13<sup>th</sup> Scientific Meeting of the ISMRM. Florida, May 2005.

Mikulis D, Kassner A, Rowan S, Silver F. Acute ischemic stroke magnetic resonance imaging: rapid assessment of anatomy, hemorrhage, penumbra, major vessels, and early defects in the blood-brain-barrier. 43<sup>rd</sup> Annual Meeting of the ASNR. Toronto, May 2005.

Mikulis D, Taylor K, Farb R, Willinsky R, Rowan S, Kassner A, Silver F. Detection of parenchymal hemorrhage in acute ischemic stroke: computed tomography versus echo-planar gradient echo MRI. 43<sup>rd</sup> Annual Meeting of the ASNR. Toronto, May 2005.

Nii M, Roman K, Macgowan CK, Smallhorn JF. Insights into Normal Atrioventricular Valve Junction Motion in Paediatrics: A Real-Time Three-Dimensional Echocardiographic Study. *American Heart Association* (2005)

Nii M, Roman K, Macgowan CK, Smallhorn JF. Insights into Normal Atrioventricular Valve Junction Motion in Paediatrics: A Real-Time Three-Dimensional Echocardiographic Study. *American Heart Association* (2005)

Poublanc J, Crawley A, Mikulis D, Kassner A. Estimation of blood transit time differences through pCO<sub>2</sub> manipulation with BOLD MRI in different cerebral vascular territories. 13<sup>th</sup> Scientific Meeting of the ISMRM. Florida, May 2005.

Poublanc J, Kassner A, Mikulis D, Crawley A. Estimation of blood transit time differences through pCO<sub>2</sub> manipulation with BOLD MRI in different vascular territories. 11<sup>th</sup> Annual meeting of the Organization for HBM. Toronto, June 2005.

Roman KS, Farooq S, Macgowan CK, Gilday D, Yoo SJ, Kellenberger CK. Differential Pulmonary Blood Flow In Children With Congenital Heart Disease: Magnetic Resonance Imaging Versus Lung Perfusion Scintigraphy. *Society of Pediatric Radiology* (2004)

van Amerom JFP, Macgowan CK. Pulmonary Vessel Segmentation Using Phase-Contrast MRI and Correlation Analysis: Pulsatile Flow Phantom Validation. *Imaging Network Ontario* (2005)

## **Patents**

Pang G, Rowlands JA, “High quantum efficiency detector with improved scatter elimination and tissue equivalent dose response for megavoltage energies,” (disclosure filed, 2004)

Pang G, Rowlands JA, “High quantum efficiency detector for megavoltage energies,” US, Canadian and PCT applications filed October 2003

Roberts TPL, Cavagna F, “Biliary acid compounds for MRI determination of microvascular permeability”, WO 01/82974 A2, issued July 2004

Roberts TPL, Flagg E, Sussman MS, “A device to eliminate coil displacement artifacts from parallel MRI”, patent pending (filed 11/2003)

JA Rowlands, Wei Zhao, “An Indirect Flat-panel Detector with Avalanche Gain” (disclosure filed 2003)

Sussman MS, Merchant N, Wright GA, White LM. Method for Motion Correction in Magnetic Resonance Imaging Based on Selecting Data from the Similarity of Direct Navigator Echoes, (disclosure filed, 2004)

## Invited Presentations

Kassner A. Beyond perfusion: assessment of cerebral vascular reactivity using BOLD MRI. University of Illinois, Chicago, July 2005

Kassner A. Biological Imaging of Brain Tumors. 2<sup>nd</sup> Rostoker Lecture, University of Toronto, November 2004.

Kassner A. Advanced Neuroimaging. Lecture at Lund University in Lund, Sweden, October 2004.

Kassner A. Imaging Cerebral Vascular Reactivity. Lecture at GE Healthcare in Malmoe, Sweden, October 2004.

Macgowan C. Real-Time MRI. Pediatric Cardiovascular MR Symposium, Toronto, Canada – April 3, 2005. Sponsor: Society for Pediatric Radiology

Macgowan C. How to Reduce Magnetic-Resonance Artifacts. Pediatric Cardiovascular MR Symposium, Toronto, Canada – April 3, 2005. Sponsor: Society for Pediatric Radiology

Macgowan C. Optimization of 3D Contrast-Enhanced Pulmonary MRA in Paediatric Patients with Cardiovascular Disease. 16<sup>th</sup> Annual International MR Angiography Workshop, London, Canada – October 7, 2004. Sponsor: University of Western Ontario & MR Angio Club

Macgowan C. Magnetic Resonance Artifacts. 19<sup>th</sup> Annual Organ Imaging Review, Toronto, Canada – September 29, 2004. Sponsor: University of Toronto

## Teaching - Hours of Lectures

Faculty Member	Students	Residents, Fellows, Faculty	Technologists
C.B. Caldwell	4	10	10
S. Houle	10	20	10
T.R. Roberts	6	10	2
J.A. Rowlands	0	2	0
M.L. Wood	0	4	0
M.J. Yaffe	10	38	3
A. Kassner	2	4	0
C. Macgowan	2	2	0
M. Sussman	0	4	0

## Department of Medical Imaging - Annual Research Day 2005

Date: Thursday, April 21, 2005

Location: Sadowski Auditorium, 18th Floor, Mount Sinai Hospital

Starting Time: 12:00 pm with welcome by Tim Roberts

### Neuroimaging

Session Chair: Tim Roberts

- |          |                   |   |
|----------|-------------------|---|
| 12:05 PM | Noel Fanning      | Association between calcification of the cervical carotid artery bifurcation and white matter ischemia                                      |
| 12:13 PM | David Mikulis     | Detection of parenchymal hemorrhage in acute ischemic stroke: CT vs EPI gradient echo MRI   |
| 12:21 PM | Elaine Martinovic | Perfusion Abnormalities in "Benign" Developmental Venous Anomalies  |
| 12:29 PM | Elissa Flagg      | The developmental trajectory of hemispheric language dominance in autism: MEG results   |
| 12:37 PM | Fang Liu          | Fiber Density Index Correlates with Reduced Fractional Anisotropy in White Matter of Patients with Glioblastoma                             |
| 12:45 PM | Andrea Kassner    | Prediction of hemorrhagic transformation in acute ischemic stroke using dynamic contrast-enhanced permeability MRI                          |
| 12:53 PM | Jing Xiang        | Volumetric localization of epileptic activities in tuberous sclerosis using synthetic aperture magnetometry                                 |
| 1:01 PM  | Julien Poubanc    | Estimation of blood transit time differences through pCO <sub>2</sub> manipulation with BOLD MRI in different cerebral vascular territories |
| 1:09 PM  | Nasim Maleki      | Improved SNR using complex subtraction in Flow-sensitive Alternating Recovery (FAIR) perfusion imaging                                      |
| 1:17 PM  | Patrick McVeigh   | Unsupervised classification of multiparametric MR images of the brain: Comparison of Fuzzy C-Means and ISODATA algorithm performance        |

### Vascular and Interventional Radiology

Session Chair: Peter Chait

- |         |                    |  |
|---------|--------------------|--|
| 1:27 PM | Angela Ho          | Adverse Reactions to Iodinated Contrast Media: Comparing Iohexol to Iodixanol  |
| 1:35 PM | Daniele Wiseman    | Bleeding complications of Left Versus Right Percutaneous Transhepatic Biliary Drainage Catheters                                   |
| 1:43 PM | Dheeraj K. Rajan   | Ultrasound Imaging in Uterine Artery Embolization Patients: Pre-Procedure Evaluation and Post-Procedure Findings                   |
| 1:51 PM | Harpreet Baweja    | Experience with the Jostent Peripheral Stent-Graft in Peripheral Vascular Injuries   |
| 1:59 PM | Fabio Settecase    | Endovascular catheter steering by remote control for interventional MRI  |
| 2:07 PM | J. Robert Beecroft | Transplant Renal Artery Stenosis: Outcome following Percutaneous Intervention  |
| 2:15 PM | Jeff Jaskolka      | Pathologic analysis of radiofrequency ablation of pulmonary metastases in humans – preliminary experience                          |
| 2:23 PM | John Kachura       | Efficacy of uterine artery balloon occlusion and embolization in pregnancies complicated by placenta percreta and placenta previa  |
| 2:31 PM | John Kirby         | Management of Primary Post-Partum Hemorrhage with Uterine Artery Embolization  |
| 2:39 PM | Richard Bitar      | 3D-High resolution Magnetic Resonance Direct Thrombus Imaging (hiresMRDTI) of atherosclerotic complicated plaque                   |
| 2:47 PM | Kong Teng Tan      | Pain Following Percutaneous Liver Biopsy: Does Approach Matter? A Randomized Trial Comparing Subcostal versus Intercostal Approach |

2:55 PM **Break (20 min)**

### **Abdominal Imaging**

Session Chair: Mostafa Atri

- 3:15 PM Hyun-Jung Jang Enhancement Patterns of Nodular Hepatocellular Carcinoma on Contrast-enhanced Ultrasound – Contribution of Delayed Phase Evaluation
- 3:23 PM Jessica Murphy-Lavallee Are Metastases Really Hypovascular in the Arterial Phase? The Perspective on Contrast Enhanced Ultrasound
- 3:31 PM Korosh Khalili Changes in Splenic Volume and Correlation with Platelet counts in Liver Donors
- 3:39 PM Martin E. O'Malley Growth Rates of Hepatocellular Carcinoma
- 3:47 PM Stephanie Wilson Maximum Intensity Projection Contrast-Enhanced Ultrasound Imaging of Liver Tumor Vascularity: Feasibility and Success
- 3:55 PM Tae Kyoung Kim Evaluation of Hypervascular Liver Masses in Asymptomatic Young Low Risk Patients with Microbubble-Enhanced Ultrasound
- 4:03 PM Masoom A. Haider Washout DCE vs T2 MRI prior to transrectal ultrasound biopsy in patients at high risk for prostate cancer
- 4:11 PM Arthur H. Zalev Capsule Endoscopy Findings in Patients with Established and Suspected Small Bowel Crohn's Disease: Correlation with Radiological and Endoscopic Findings
- 4:19 PM John O'Rourke MRI: Physiologic and Morphologic Evaluation of Liver Disease in HHT
- 4:27 PM Kartik Jhaveri CT Histogram Analysis in Characterizing Hyperdense Adrenal Nodules (>10 HU on unenhanced CT) with Comparison to Chemical Shift MRI
- 4:35 PM Patrick O'Keeffe Retrospective comparison of triphasic liver CT and endoscopy in the detection and grading of esophageal varices in patient with cirrhotic liver disease

### **Breast, Chest and Cardiac**

Session Chair: Supriya Kulkarni

- 4:45 PM Bonnie Ohayon MRI and Pregnancy Associated Breast Cancer
- 4:53 PM Jim Li Motion compensation in cardiac MRI imaging
- 5:01 PM Heidi Roberts Lung Cancer Screening using Low-Dose Computed Tomography in Toronto: First Experience
- 5:09 PM Narinder Paul Quantitative Assessment of Nodule Detectability in Chest CT: Delving the Low-Dose Limits
- 5:17 PM Demetris Patsios The Utility of Computer-Aided Detection (CAD) for lung cancer screening using low dose CT (LDCT)
- 5:25 PM Tom C. Lee Utilization and Outcomes of Ventilation/Perfusion Scans and CT Pulmonary Angiography for Emergency Investigation of Pulmonary Embolus from 2001-2003
- 5:33 PM Ryan Margau Percutaneous Thoracic Drainages in Neonates: Drainage with Catheter Placement versus Treatment by Aspiration Alone
- 5:41 PM Andre Pereira Dynamic CT Perfusion for lung nodule characterization
- 5:49 PM Colm Boylan Fine Needle Biopsy of the Thyroid-Aspiration or Capillary Technique?

### **Musculoskeletal, Physics and Ethics**

Session Chair: Michael Wood

- 5:59 PM Gagan Ahuja Investigation of magnification factor in digital radiography and validation of an automatic magnification calibration method for orthopedic surgical planning
- 6:07 PM Lawrence White Cartilage T2 assessment: differential of normal hyaline cartilage versus reparative tissue following arthroscopic cartilage repair
- 6:15 PM Rola Shaheen Significance of hip pain in children with sickle cell disease
- 6:23 PM Marshall Sussmann A New Method for Improving Resolution in MR Imaging
- 6:31 PM Matthew McInnes The Design and Implementation of a Formal Radiology Ethics Curriculum

- 6:39 PM Meaghen Hyland Correlation between Doppler ultrasonography and mesenteric angiography in patients with Hereditary Hemorrhagic Telangiectasia (HHT)
- 6:47 PM Susan Armstrong Bone Mineral Density and Fracture Risk in Adults with Cystic Fibrosis
- 6:55 PM Walter Kucharczyk Closing Comments

# **RESIDENT TRAINING PROGRAM**

## **General Description**

There were 50 residents in our program in the 2004-2005 year. The five-year program consists of one year of preliminary clinical training (PGY1), followed by four years of training in medical imaging.

The university-wide integration and rotational system ensures that each resident will have access to all the strengths of our large and expert faculty and the huge volume of clinical pathology. Residents have the opportunity to train at several large modern hospitals, doing so in groups of 5 – 10 trainees of all levels, thus maintaining a close working environment with peers and faculty. All hospitals are equipped with state-of-the-art equipment. Residents work daily with the best of general radiographic, ultrasound, CT and MRI technology. Several hospitals have digital image archiving and communication systems.

## **PGY1**

PGY1 Clinical training is divided into two blocks, one eight-nine month block at core teaching hospitals and a two-three month block at a community hospital. During 2004 - 2005, the core teaching hospitals have been the Mount Sinai Hospital and the St. Michael's Hospital. Community training is principally done at the North York General Hospital. The content of the PGY1 program included Medicine (General Medicine and Respiriology); Surgery (General Surgery, Orthopaedics, Urology, Neurosurgery, Obstetrics and Gynaecology); one month of Paediatrics; one month of Anatomy at the U of T Anatomy Department; and two months of elective choices. In the final month of PGY1, all residents come together for a Radiology Orientation Program, which introduces the trainees to physics, imaging equipment, clinical lectures, program issues and the core hospitals. The PGY1 rotation opportunities are reviewed annually, attempting to make the best of training choices in the clinical services.

## **PGY2**

During 2004 - 2005, a PGY2 trainee spent the entire year at one or two of the three core teaching Departments (Mount Sinai – University Health Network, Sunnybrook and Women's College Health Sciences Centre and St. Michael's Hospital). There is a graduated increase in responsibility over the course of the year. In order to prepare residents to take night call (which starts in September), the year begins with a 10 week introductory program covering thoracic, GI, GU, CNS, MSK, CT and nuclear imaging. The remainder of the year consists of one or two month rotations in each of the above organ systems, as well as a one-month rotation in ultrasound.

### **PGY3**

In 2004 - 2005, residents in this training year divided their rotations into three to six month blocks at hospitals different from that of their PGY2 training year. This allows the trainee an opportunity to see a different spectrum of pathology and to work with a different group of faculty. Rotations during the PGY3 year have included Breast Imaging, Neuroradiology, Ultrasound, Vascular-Interventional, and Nuclear Medicine as well as additional training in CT, MSK, GI and Chest. MRI training is included within all organ system rotations and is a strong component of all core hospitals.

### **PGY4**

During this year, each resident spent a four-month block in Paediatric Radiology at the world famous Hospital for Sick Children. The other eight months is at one or two of the core hospitals. This year includes a two-month block of dedicated Angio-Interventional training. The resident also has four to six months of General Radiology rotations. The Armed Forces Institute of Pathology (AFIP) six-week rotation for Radiology-Pathology is scheduled during the General radiology time.

### **PGY5**

The resident is usually allowed to use this year for electives, but this is conditional upon the resident having achieved an acceptable standard of competence in medical imaging. It may be spent concentrating on areas of relative weakness, or on subspecialty areas. Most residents include electives in obstetric ultrasound, cardiac imaging and Body MRI in this final year.

### **Armed Forces Institute of Pathology**

All residents are encouraged to attend the Armed Forces Institute of Pathology in Washington, D.C., where they receive a six-week, intensive, didactic course in pathology correlated to imaging. This generally occurs during the PGY4 year. Some financial support is available. To date, we have been successful in reserving a sufficient number of positions at AFIP to permit all of our residents to attend at some point in their training.

### **Physics Instruction**

All residents must be knowledgeable about the physics of medical imaging. To that end, intensive physics instruction is provided. One week courses are provided for the PGY1 and PGY3 years and there is also a five-day review course in the PGY3 or PGY4 year of training. These courses are organized by Martin Yaffe, Ph.D. (Department of Medical Imaging) and taught by the faculty of our department, the faculty of the Department of Medical Biophysics, and guest speakers.



## **Conferences**

Residents are encouraged to attend imaging conferences, both to be involved in presenting papers or posters and also for the benefit of knowledge and interaction with the imaging community at large. During the PGY3 year, each resident is given the opportunity to attend a major imaging conference with the provision of financial support. The resident is not required to present at the conference to receive this support but does prepare a report following the meeting to highlight what they gained in their attendance. In addition, residents presenting papers or posters at recognized meetings generally receive financial support through affiliations with hospital imaging departments.

## **Seminars and Half-Day Program**

Wednesday afternoons from September to June have been the focus for the academic program. There is a formal two to three hour weekly clinical seminar for PGY1, PGY2 and PGY3 residents. Most seminars are organized around organ systems and imaging modalities.

As well, there are special sessions for all resident years on non-clinical topics such as ethical and legal issues, practice management and career planning. Speakers from outside the Department add interest to the content of these featured sessions.

A 10 hour review series is provided for PGY5 residents each spring in preparation for the ABR and Royal College examinations.

## **Research**

Residents in Medical Imaging are required to have a good foundation of research methodology and critical appraisal in order to either critically evaluate scientific medical literature or pursue independent research activities. Principles and issues of health technology assessment, quality improvement and clinical audits are also core components of the clinical research curriculum. Dr. David Mikulis is responsible for the design and delivery of the course curriculum, workshops, tutorials and lectures on these topics. Instruction in this curriculum is given throughout the Residency Program. In total, residents in Medical Imaging receive over 30 hours of course instruction.

Each resident is required to become involved in a research project beginning no later than the PGY3 year. All residents receive protected time to work on their project. The research is conducted in conjunction with one or more staff persons with a view to presenting the project during the PGY4 or PGY5 years at our Annual Research Day. The residents are encouraged to publish their results and to present them at national or international meetings.

## **Rounds**

Teaching rounds, or small group conferences, are held at each of the core hospitals once or twice a day. University Division rounds are held for the entire department six to eight times annually at a central location.

## **View Box Teaching**

Every resident in the PGY2 through to the PGY5 years receives daily teaching from faculty at the view box and in the procedure rooms. Teaching is based on the day's cases, but may be supplemented with related cases from faculty teaching files. The amount of teaching varies from rotation to rotation but on average there are one to two hours of this type of one-to-one teaching daily. This program is widely recognized for the quality of teaching provided to residents. In addition, residents learn to teach others and are expected to teach students and observers in the Department.

## **Journal Club**

This is organized by the residents and is held approximately five times annually.

## **Visiting Professor Program**

This program of six lectures between October and April is organized by the CME Director of our department and is provided for all imaging specialists including community radiologists. Residents attend the lecture and reception. Visiting Professors from outside Toronto usually present resident teaching sessions at two or three of the teaching hospitals during their visits to Toronto.

## **Organ Imaging Review Course**

This is a week-long, internationally recognized review course. It is given in September or October of each year. It is primarily intended as a CME course for practicing radiologists but also contains a wealth of valuable teaching material for residents. All residents are given some time off clinical services to attend, and can do so at no cost.

## **Program Evaluation**

In addition to that carried out by the Radiologists-in-Chief and the teaching co-ordinators at each hospital, the residents complete an assessment of each rotation, and an annual assessment of the faculty's teaching.

## **Program Supervision**

This is the direct responsibility of the Program Director who is, in turn, responsible to the Departmental Chair and the Departmental Executive Committee. The Program Director is assisted by the Resident Training Committee, which is composed of a representative from each of the teaching hospitals, a PGY1 coordinator responsible for all PGY1 issues, as well as from Nuclear Medicine and the Research Committee. In addition, the University of Toronto Chief Resident in Medical Imaging and a resident representative from each year of training are full members of the committee.

There are Division Heads appointed for Cardiothoracic, Musculoskeletal, Abdominal, Pediatric, Vascular-Interventional, Breast Imaging and Neuroradiology. These Division Heads and the Program Director for Nuclear Medicine are responsible for rotation goals and objectives, suggested reading lists and recommendations regarding the resident lectures and seminars. Division Heads advise the Program Director and Resident Training Committee.

### **Resident Evaluations**

- Evaluation consists of the following:
- An in-training evaluation completed following each rotation.
- A summary in-training evaluation at the end of each year of training.
- Results of the American College of Radiology multiple choice in-training examination, taken in the spring of each year.
- Results of a yearly oral examination based on the Royal College format (PGY2-5).
- Results of a written examination in physics following the PGY1 course.
- A practice OSCE examination in the spring of each year (PGY3-5).

### **Resident Awards**

Outstanding residents are recognized by awards for clinical excellence, teaching and research.

#### **1) Gordon Potts Award**

This award of a commemorative plaque is made to the outstanding final-year resident, based on a combination of the following academic and personal strengths: Interpersonal skills, willingness to explore new methods and ideas, dedication to patient service and academic activities, intellectual capacity and publications in residency.

2004 - 2005 recipient: Dr. Vikash Prasad, PGY5

#### **2) Resident Teacher-Mentor Award**

This award will be made to a final year graduating resident, based on a combination of the following strengths and contributions: dedication to teaching, resident advocate and mentor, contribution to Resident Program and commitment to personal continuing educational growth.

2004 - 2005 winner: Dr. Sarah Koles, PGY5

#### **3) Research Awards**

Each year residents as well as fellows are nominated to receive the RSNA Research Award for Research excellence within the University Of Toronto Department Of Medical Imaging.

2004 – 2005 winner: Dr. Eric Bartlett, Neuroradiology Fellow

### **Summary**

The University of Toronto training program in Medical Imaging is designed to provide the best possible training in all aspects of imaging. The program is an intensive one, with considerable emphasis on teaching, in addition to exposure to a huge volume of clinical pathology. The university-wide integration and rotational system ensures that each resident will have access to all of the strengths of our departments.

## **RESIDENTS**

### **PGY1 Level**

Alan Andrew, MD  
University of Toronto, 2004

Hemi Dua, MD  
University of Toronto, 2004

Dean Durant, MBBS  
University of the West Indies, 2001

Jonathan Mandel, MD  
University of Toronto, 2004

Aiden Mokhtassi, MD  
University of Toronto, 2004

Christopher Mongiardi, MD  
University of Ottawa, 2004

Elissa Price, MD  
University of Toronto, 2004

Lara Richmond, MD  
University of Toronto, 2004

### **PGY2 Level**

Aditya Bharatha, MD  
University of Toronto, 2003

Minoo Bozorgzadeh, MD  
Iran Medical University, 1984

Philip Buckler, MD  
University of Toronto, 2003

Patrick Cervini, MD  
University of Toronto, 2003

Errol Colak, MD  
University of Toronto, 2003

Kebby King, MD  
University of West Indies, 1997

Robert Kurtz, MD  
University of Toronto, 1996

Jeff Mandelcorn, MD  
University of Toronto, 2003

Danny Mandell, MD  
McMaster University, 2003

Alex Menard, MD  
University of Ottawa, 2003

Jennifer Stemic, MD  
University of Toronto, 2003  
Jeremy White, MD  
University of British Columbia, 2003

### **PGY3 Level**

Louis-Martin Boucher, MD  
University of Toronto, 2001  
Meg Chiavaras, MD  
University of Massachusetts, 2002  
Christopher Dyck, MD  
University of Toronto, 2002  
Lenny Grinblat, MD  
McMaster University, 2002  
Winnie Lee, MD  
University of Toronto, 2002  
Andrea Milic, MD  
University of Ottawa, 2002  
Shantel Minnis, MBBS  
University of West Indies, 1998  
Emma Robinson, MD  
University of Toronto, 2002  
Neil Rosta, MD  
Queen's University, 1994  
Rola Shaheen, MD  
University of Jordan, 1996  
Brian Yeung, MD  
Queen's University, 2002  
Katerine Zukotynski, MD  
University of Toronto, 2002

### **PGY4 Level**

Gagan Ahuja, MD  
University of Toronto, 2001  
Harpreet Baweja, MD  
McMaster University, 1994  
Richard Bitar, MD  
University of Toronto, 2001  
Debra Chang, MD  
University of Toronto, 2000  
Deborah Cheng, MD  
University of Toronto, 2000

Meaghan Hyland, MD  
University of Ottawa, 2001  
Jeffery Jaskolka, MD  
University of Western Ontario, 2001  
Ryan Margau, MD  
University of Toronto, 2001  
Elaine Martinovic, MD  
University of Calgary, 2001  
Matthew McInnes, MD  
University of Toronto, 2001

### **PGY5 Level**

Susan Armstrong, MD  
University of Toronto, 2000  
Marc Freeman, MD  
University of Toronto, 2000  
Aaron Glickman, MD  
University of Western Ontario, 2000  
Anish Kirpalani, MD  
McMaster University, 2000  
Sarah Koles, MD  
University of Calgary, 2000  
Dan Mozeg, MD  
University of Toronto, 2000  
Vikash Prasad, MD  
Dalhousie University, 2000  
Michael Stefanos, MD  
University of Toronto, 2000

# **NUCLEAR MEDICINE TRAINING PROGRAM**

## **General Description**

Nuclear medicine is a branch of medical practice primarily concerned with the use of unsealed radioactive sources in the study, diagnosis, and treatment of disease. Our program currently provides dual-certification in radiology and nuclear medicine. This is a six year (including PGY1) program with two years of subspecialty training in nuclear medicine (provided that the subspecialty training is taken following the completion of at least 18 months in Diagnostic Radiology, effective June 1, 1998).

The Nuclear Medicine Program provides formal instruction and training for both radiology and nuclear medicine residents. Formal lectures cover various aspects of nuclear medicine including cardiac and oncologic nuclear medicine, functional neuroimaging, radiopharmacy, nuclear physics, and general nuclear medicine. Residents have specific goals, objectives and reading lists during their rotation at one of the teaching hospitals. There are biweekly teaching rounds for both radiology and nuclear medicine residents at these hospitals. The residents acquire skills by participating in daily clinical work. Didactic instruction is supplemented by teaching files at each hospital. Residents are encouraged to attend evening lectures given monthly or bi-monthly by internationally renowned guest speakers, who lecture on current topics in nuclear medicine at Toronto Nuclear Medicine Society Meetings. Journal clubs are occasionally organized where academic staff discuss interesting cases and/or current journal articles.

## **General Objectives**

The goal of the nuclear medicine resident is to be able to function independently as a medical specialist with the ability to advise on, supervise, perform, and interpret all diagnostic procedures, and to achieve a level of competence in the performance of radiotherapy with unsealed radioactive sources so as to act as a consultant to referring physicians. The resident must acquire excellent communication and technical skills, and the knowledge and professionalism appropriate to a lifetime career in nuclear medicine.

## **Dual Radiology and Nuclear Medicine Residency**

Applicants will be considered from candidates who are already in the Diagnostic Radiology Training Program at the University of Toronto, usually, one slot per year is reserved for the dual certification program.



# **RADIOLOGY SCIENTIST TRAINING PROGRAM**

## **Objectives**

The purpose of the Radiological Scientist Training Program (RSTP) is to provide a small group of radiology residents with the opportunity to develop skills important to the pursuit of independent research. These skills encompass research methodology, publications, grant writing, and presentations. The research training is intended to complement the excellent clinical training for which the Department of Medical Imaging is already recognized.

## **Organization**

The RSTP is a six-year program with two years of research and four years of clinical training. The Royal College of Physicians and Surgeons of Canada will accept one year of research towards fulfilling the requirements of the five year program in diagnostic radiology. The RSTP is able to accommodate as many as two residents per year. The first two years of the RSTP are identical to the regular radiology training program. The difference is in the PGY3 and PGY4 years which, in the RSTP, are entirely devoted to research. Research opportunities are available in many departments relevant to radiology. Under certain circumstances, residents in the RSTP may pursue a M.Sc. or Ph.D. degree. The final two years, PGY5 and PGY6, are designated for clinical training to fulfil the requirements of the Royal College of Physicians and Surgeons of Canada.

## **Eligibility and Application Procedure**

Applications will be considered from candidates already accepted into the regular radiology training program and will occur during the PGY2 training year. A maximum of two places per year will be reserved for residents in the RSTP. Applicants need not have prior experience in research or a special background, but are expected to be self-motivated.

## **Remuneration**

Residents in the RSTP will be remunerated commensurate with residents in the regular radiology training program, up to a maximum of the PGY5 level.

## **Selection of Research Project and Supervisor**

Residents in the RSTP should select a project and a supervisor as soon as possible, and before the PGY3 year. The Director of Research and the Chair of the department can offer assistance with this selection. A supervisor may be selected from various University of Toronto departments, including Medical Imaging, Medical Biophysics, Anatomy, Physiology, Biochemistry, Computer Science, Clinical Epidemiology, or Electrical Engineering, specifically the Institute of Biomedical Engineering. The supervisor must have operating funds to support the research, but is not expected to provide remuneration for the resident. Candidates will be strongly encouraged also to apply for a fellowship from an agency such as the Medical Research

Council, but acceptance into the RSTP will not be conditional upon success in obtaining such a fellowship.

### **Graduate Degrees**

Residents in the RSTP are encouraged to pursue a graduate degree. The procedure depends somewhat on the department in which the research is to be conducted, but requires a separate application to that department and the School of Graduate Studies or Institute of Medical Sciences. Residents are responsible for fulfilling all requirements of the department in which they are registered as graduate students.

### **Clinical Responsibilities**

During the two years of research training, residents in the RSTP will have minimal clinical responsibilities, probably limited to one on-call evening/night per week. In addition, residents in the RSTP are encouraged to maintain contact with clinical activities through attendance at select departmental rounds and teaching sessions. Such attendance will not be compulsory for RSTP residents in the two research years, as it is for residents in the regular training program.

# **OBJECTIVES OF TRAINING & SPECIALTY TRAINING REQUIREMENTS IN DIAGNOSTIC RADIOLOGY**

## **Definition**

Diagnostic Radiology is a branch of medical practice concerned with the use of imaging techniques in the study, diagnosis and treatment of disease.

## **General Objectives**

On completion of the educational program, the graduate physician will be competent to function as a consultant in Diagnostic Radiology. This requires the physician to have the ability to supervise, advise on and perform imaging procedures to such a level of competence, and across a broad range of medical practice, as to function as a consultant to referring family physicians and specialists.

Communication skills, knowledge, and technical skills are the three pillars on which a radiological career is built, and all are dependent on the acquisition of an attitude to the practice of medicine which recognizes both the need to establish a habit of continuous learning and a recognition of the importance of promoting a team approach to the provision of imaging services.

Residents must demonstrate the knowledge, skills and attitudes relating to gender, culture and ethnicity pertinent to Diagnostic Radiology. In addition, all residents must demonstrate an ability to incorporate gender, cultural and ethnic perspectives in research methodology, data presentation and analysis.

## **Specific Objectives**

At the completion of training, residents will have achieved the following competencies so as to function effectively as:

### **i) Medical Expert/Clinical Decision-Maker**

#### **General Requirements**

- Demonstrate diagnostic and therapeutic skills for ethical and effective patient care.
- Access and apply relevant information to clinical practice so as to have competence in clinical radiological skills.
- Demonstrate effective consultation services with respect to patient care, education and legal options.

#### **Specific Requirements**

- Understand the nature of formation of all types of radiological images, including physical and technical aspects, patient positioning, contrast media.
- Knowledge of the theoretical, practical and legal aspects of radiation protection, including other imaging techniques and their possible harmful effects.

- Knowledge of human anatomy at all ages, both conventional and multi-planar, with emphasis on radiological applications.
- Knowledge of all aspects of clinical radiology, including understanding of disease, appropriate application of imaging to patients, importance of informed consent, complications such as contrast media reactions, and factors affecting interpretation and differential diagnosis.
- Understand the fundamentals of quality assurance in radiology.
- Understand the fundamentals of epidemiology, biostatistics and decision analysis.
- Show competence in manual and procedural skills and in diagnostic and interpretive skills.
- Demonstrate the ability to manage the patient independently during a procedure, in close association with a specialist or other physician who has referred the patient. The radiologist should know when the patient's best interests are served by discontinuing a procedure, or referring the patient to another physician.
- Understand the acceptable and expected results of investigations/and or interventional therapy as well as unacceptable and unexpected results. This must include knowledge of and ability to manage radiological complications effectively.
- Understand the appropriate follow-up care of patients who have received investigations and/or interventional therapy.
- Show understanding of a sound and systematic style of reporting.
- Competence in effective consultation, conduct of clinico-radiological conferences, and the ability to present scholarly material and lead case discussions.

## **ii) Communicator**

- Establish appropriate therapeutic relationships with patients/families.
- Listen effectively.
- Obtain the appropriate information during consultation with referring physicians in order to be able to make recommendations regarding the most appropriate testing and/or management of patients.
- Discuss appropriate information with patients/families and the health care team, and be able to obtain informed consent for tests and procedures when this is needed.

### Specific Requirements

- Have the ability to produce a radiological report which will describe the imaging findings, most likely differential diagnosis, and when indicated, recommend further testing and/or management.
- Understand the importance of communication with referring physicians, including an understanding of when the results of an investigation or procedure should be urgently communicated.
- Communicate effectively with patients and their families and have a compassionate interest in them.
- Recognize the physical and psychological needs of the patient and their families undergoing radiological investigations and/or treatment, including the needs of culture, race and gender.

### **iii) Collaborator**

#### General Requirements

- Consult effectively with other physicians and health care professionals.
- Contribute effectively to other interdisciplinary team activities.

#### Specific Requirements

- Have the ability to function as a member of a multi-disciplinary health care team in the optimal practice of radiology.

### **iv) Manager**

- Utilize resources effectively to balance patient care, learning needs, and other activities.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.
- Utilize information technology to optimize patient care, life-long learning and other activities.

#### Specific Requirements

- Be competent in conducting or supervising quality assurance including an understanding of safety issues and economic considerations.
- Be competent in computer science as it pertains to the practice of radiology.

### **v) Health Advocate**

#### General Requirements

- Identify the important determinants of health affecting patients.
- Contribute effectively to improve the health of patients and communities.
- Recognize and respond to those issues where advocacy is appropriate.

#### Specific Requirements

- Understand and communicate the benefits and risks of radiological investigation and treatment including population screening.
- Recognize when radiological investigation or treatment would be detrimental to the health of a patient.
- Educate and advise on the use and misuse of radiological imaging.

### **vi) Scholar**

#### General Requirements

- Develop, implement and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, house staff/students and other health professionals.
- Contribute to development of new knowledge.

#### Specific Requirements

- Competence in evaluation of the medical literature.
- The ability to be an effective teacher of radiology to medical students, residents, technologists and clinical colleagues.
- The ability to conduct a radiology research project, which may include quality assurance.

- Appreciation of the important role that basic and clinical research plays in the critical analysis of current scientific developments related to radiology.

## **vii) Professional**

### General Requirements

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician respecting the needs of culture, race and gender.

### Specific Requirements

- Be able to accurately assess one's own performance, strengths and weaknesses.
- Understand the ethical and medical-legal requirements of radiologists.

## **Training in Canada**

The foregoing represents the general and specific objectives that all candidates for the Royal College examinations in Diagnostic Radiology are expected to meet. For those training in Canadian programs, these objectives will be accomplished in a staged manner. Residents in Canadian programs may obtain the document describing this approach from their program directors.

## **SPECIALTY TRAINING REQUIREMENTS IN DIAGNOSTIC RADIOLOGY**

These specialty training requirements apply to those who began training on or after 1 June 1997.

The five years of approved training require, at first, a closely supervised practice, with the opportunity for increasing responsibility in the final years, so that the resident near the end of training can function as a general radiology consultant, requesting help from staff radiologists when necessary. The residency may be followed by one or more years of fellowship training in a subspecialty discipline, as the residence training is not intended to provide a subspecialty level of expertise.

This period must include:

- 1) One year of basic clinical training:  
The purpose of this year is to give the resident a degree of independent responsibility for clinical decisions; an opportunity for further development of the skills required in making effective relationships with patients; the consolidation of competence in primary clinical and technical skills across a broad range of medical practice; and an understanding of the nature of the relationship between a referring physician and a clinical radiological consultant.
- 2a) Three years of approved resident training in “general diagnostic imaging”, this must include:  
Respiratory, cardiovascular, gastro-intestinal and biliary, genitourinary, musculoskeletal, mammography, neurological and pediatric radiology, as well as the following modalities: fluoroscopy, ultrasound, CT and MR imaging.  
Because of the varying training programs in the recognized university training centres, these 36 months may be allocated as block periods of at least three months or their equivalents.
- 2b) One year of approved residency that may consist of one to twelve month periods in any of the following, as long as these are appropriately integrated by the Residency Training Committee:
  - further training in diagnostic radiology
  - diagnostic ultrasound
  - CT
  - MR
  - nuclear medicine
  - cardiac and/or vascular radiology
  - interventional radiology
  - neuroradiology
  - pediatric radiology

- pathology or other clinical specialty relevant to the practice of radiology (for up to three months)
- a full-time research project, relevant to diagnostic imaging, and acceptable to the program director and the Credentials Committee.

**NOTE:** In view of the amount and variety of radiology to be covered and the skills required at the time of the final examination, it will seldom be appropriate to spend the entire 12 months of the fifth year in any one of these areas.



## **RESIDENT RESEARCH PROGRAM**

While training in clinical radiology remains the main focus of the residency, research is considered to be of paramount importance as well. It is essential that residents gain experience in as many aspects of research as possible, including searching the literature, data analysis and manuscript preparation. A resident cannot know if he/she would enjoy an academic career without firsthand experience. The feeling of satisfaction that accompanies completion of a project, and contribution of information to the medical/scientific literature, can only be appreciated if personally experienced.

The Research Program consists of three aspects; a seminar series, resident support, and a formal presentation day.

### **Seminar Series**

Residents in Medical Imaging are required to have a good foundation of research methodology and critical appraisal in order to either critically evaluate scientific medical literature or pursue independent research activities. Principles and issues of health technology assessment, quality improvement and clinical audits are also core components of the clinical research curriculum. Workshops, tutorials, and lectures on these topics are organized by the department's staff who are responsible for the design and delivery of the course curriculum. Attendance at these sessions is compulsory and instruction of this curriculum is given throughout the Residency Program.

### **Support**

Department faculty are asked to submit research topics from which residents may choose a project, which he or she finds interesting. The residents are given the opportunity to create their own topic or to choose one from this faculty-generated list. Residents are freed from clinical responsibilities for their work. Each resident presents a short, informal outline of the intended project to the Resident Research Committee in November of their PGY3 year so that project feasibility can be assessed before too much time has been devoted to it. Helpful suggestions are offered by Committee Members. Data collection for the project begins in January of the PGY3 year and extends to December of the same year. During June, the residents present an interim report, again informal, to the Committee, to confirm that data collection has begun and is progressing satisfactorily. In November/December the residents present a third informal discussion for assessment of project status and to determine if an abstract can be generated for submission to a national/international meeting. It is at this time that the Committee determines if the project is satisfactory. Incomplete studies may be considered satisfactory depending on the circumstances described by the resident. Finally, the study is presented formally in the following Spring at the Annual Research Day.

## Presentation Day

Our 17<sup>th</sup> annual Department of Medical Imaging Research Day was held on April 21, 20045. The resident presentations included:

Elaine Martinovic	Perfusion Abnormalities in “Benign” Developmental Venous Anomalies
Harpreet Baweja	Experience with the Jostent Peripheral Stent-Graft in Peripheral Vascular Injuries
Jeff Jaskolka	Pathologic analysis of radiofrequency ablation of pulmonary metastases in humans – preliminary experience
Richard Bitar	3D-High resolution Magnetic Resonance Direct Thrombus Imaging (hiresMRDTI) of atherosclerotic complicated plaque
Marc Freeman	Percutaneous Vertebroplasty Results in the Reversal of Height Loss and Spinal Deformity in Patients with Osteoporotic and Pathologic Compression Fractures
Tom C. Lee	Utilization and Outcomes of Ventilation/Perfusion Scans and CT Pulmonary Angiography for Emergency Investigation of Pulmonary Embolus from 2001-2003
Ryan Margau	Percutaneous Thoracic Drainages in Neonates: Drainage with Catheter Placement versus Treatment by Aspiration Alone
Gagan Ahuja	Investigation of magnification factor in digital radiography and validation of an automatic magnification calibration method for orthopedic surgical planning
Rola Shaheen	Significance of hip pain in children with sickle cell disease
Matthew McInnes	The Design and Implementation of a Formal Radiology Ethics Curriculum
Meaghen Hyland	Correlation between Doppler ultrasonography and mesenteric angiography in patients with Hereditary Hemorrhagic Telangiectasia (HHT)
Susan Armstrong	Bone Mineral Density and Fracture Risk in Adults with Cystic Fibrosis

While presentation at this meeting is an end unto itself, many of the projects have since been presented at national and international meetings and have been published in peer-reviewed journals. Since the research program was instituted, more than 60 of the resident’s projects have appeared in peer-reviewed journals. Of those not published, many have been presented either orally or as a poster at national/international meetings.

## **FELLOWSHIP PROGRAM**

With access to several thousand inpatient beds, the affiliated hospitals of the University of Toronto form one of the largest teaching facilities in the world, thereby serving as an ideal setting for advanced subspecialty training in Medical Imaging. The program has national and international stature both clinically and in research, and attracts fellows from around the world.

In 2004-2005 the seven divisions of the University of Toronto Department of Medical Imaging offered a comprehensive array of fellowships:

- Abdominal Imaging
- Breast Imaging
- Cardiac Imaging
- Cross-sectional Imaging
- Magnetic Resonance Imaging
- Musculoskeletal Imaging
- Neuroradiology (Diagnostic)
- Neuroradiology (Interventional)
- Pediatric Imaging
- Thoracic Imaging
- Vascular/Interventional Radiology
- Women's Imaging
- Combined Clinical/Research

The flexibility of the program permits tailoring of the fellowship experience to accommodate most needs. Research is encouraged as an integral component of the fellowship program and to this end protected research time is available to all Medical Imaging fellows.

### **2004–2005 Department of Medical Imaging Fellows**

#### ***Abdominal Imaging Fellows***

- Alexander Coret
- Deirdre Doyle
- John Hanson
- Angela Ho
- Valerie Keough
- Selina Lem
- Andrew Lowe
- Jessica Murphy-Lavallee
- Patcirk O'Keeffe
- Anuradha Rao
- Sameh Tadros

#### ***Breast Imaging***

- Pavel Crystal

***Cardiac Imaging Fellow***

- Andrew Crean

***Cross-sectional Imaging Fellows***

- Gillian Clarke
- Geoff Donsky
- Rupinder Kang
- John O'Rourke

***Magnetic Resonance Imaging Fellow***

- Richard Perng

***Musculoskeletal Imaging Fellows***

- Anita Chae
- Ali Naraghi
- Linda Probyn

***Neuroradiology (diagnostic) Fellows***

- Eria Bartlett
- Judith Corat-Simon
- Noel Fanning
- Tali Jonas-Kimchi
- Marlise Peruzzo dos Santos
- Ilan Shelef

***Neuroradiology (interventional) Fellows***

- Paula Klurfan

***Thoracic Imaging Fellows***

- Demetris Patsios
- Andre Pereira

***Vascular/Interventional Radiology Fellows***

- Peter Ballyk
- John Hanson
- John Kirby
- Vikramaditya Prabhudesai
- Daniele Wiseman

***Women's Imaging Fellow***

- Cara Betel
- Nicole Brofman
- Colm Boylan
- Zeinab Layton
- Bonnie O'Hayon
- Steven Singer
- Shalini Umranikar

***Combined Clinical/Research Fellow***

- Peter Ballyk

***Pediatric Imaging Fellows***

- Joao Amaral
- Ulrich Amendy
- Helen Branson
- Gulraiz Chaudry
- Stephen Fasulakis
- Lucia Fontalvo
- Flavia Gasparini
- Munire Gundogan
- Salwa Haidar
- Ganesh Krishnamurthy
- Eoghan Laffan
- Daniel Levine
- Erika Mann
- Sanjay Maroo
- Daniel Martin
- Clara Ortiz
- Rodrigo Ozelame
- Hemant Parmar
- Anke Raabe
- Ai-Min Sun
- Xingchang Wei

## **UNDERGRADUATE PROGRAM**

### **Year I Medicine**

The first year medical program consists of three main contiguous block courses of study. These include Structure and Function, Metabolism and Nutrition and Brain and Behavior. Medical imaging participates in the Structure and Function and Brain and Behavior courses.

#### **Structure and Function**

This course teaches anatomy, histology, and cardio-respiratory physiology.

#### **Anatomy - Radiology Seminar**

The anatomy radiology seminar series has been extensively revised and standardized. Seventeen lecturers gave a total of 48 hours of interactive seminars to the first year medical class using this new curriculum. The coordinator for this seminar series was Dr. Josee Sarrazin. These six seminars taught radiographic anatomy of the thorax, abdomen, pelvis-urinary tract, upper extremity, lower extremity and of the head and neck. Faculty lecturers participating in this seminar series included the following radiologists; Dr. Ray Chan, Dr. Tanya Chawla, Dr. Dr. Julien Chen, TaeBong Chung, Dr. Wayne Dietel, Dr. Tim Dowdell, Dr. Nasir Jaffer, Dr. Kartik Jhaveri, Dr. Seon Kyu Lee, Dr. Dorothy Lazinsky, Dr. Narinder Paul, Dr. Dawn Pearce, Dr. Joel Rubinstein, Dr. Josee Sarazin, Dr. Manu Schroff, Dr. William Weiser and Dr. Louis Wu.

#### **Full Class Lecture - Medical Imaging Modalities**

This one hour lecture was given by Dr. Nasir Jaffer. It outlines basic technical aspects of the major medical imaging modalities including X-ray, CT, MRI, ultrasound and nuclear medicine.

#### **Brain and Behavior**

From time to time, the Department of Medical Imaging has provided tutors for the Brain and Behavior course. Neuroradiology teaching tools have been developed by members of the department of Medical Imaging and are used in this course on an ongoing basis.

### **Year II Medicine**

Year II teaching centers around the two main programs in the Year II curriculum: The Pathobiology of Disease (the first half of the year), and The Foundations of Medical Practice (the second half of the year).

## **The Pathobiology of Disease Course**

This fourteen-week course teaches pathology, immunology, genetics and other similar subjects. The Department of Medical Imaging has worked on an ongoing basis to develop and provide the medical imaging teaching resources required for delivery of this PBL. (Problem based learning), oriented curriculum. The Medical Imaging coordinator for Pathobiology of Disease was Dr. Tanya Chawla.

### **Pathobiology of Disease - Imaging Case Material**

In past years, a series of images with annotations was exhibited on a viewer in the Medical Science Building. The content of this series roughly paralleled and/or emphasizes the imaging aspects of the material taught in the Pathobiology of Disease course. Efforts are currently under way, in cooperation with course organizers, to revise and update these cases using current imaging technology. Increasingly, this case material will be presented to students in a web-based format.

### **Seminar in Chest Imaging**

Dr. Narindar Paul and Dr. TaeBong Chung each gave a 2 hour seminar on chest imaging to half of the year 2 class, at the beginning of the Pathobiology of Disease Course. This seminar included a review of the radiographic anatomy and radiographic findings associated with the pathology of common diseases of the lung. Numerous radiographs of common lung diseases were presented.

### **Seminar in the Imaging of Cancer**

This seminar emphasized the role medical imaging plays in the staging and follow-up of neoplastic disease. Dr. Martin O'Malley, Dr. Tanya Chawla and Dr. Kartik Jhaveri each gave this 2 hour seminar to members of the year 2 class.

## **Foundation of Medical Practice Course**

This 21-week course teaches core clinical subjects such as medicine and surgery. Dr. TaeBong Chung was the Medical Imaging Coordinator for the Foundations of Medical Practice Course.

### **PBL Tutors**

Faculty members in the Department of Medical Imaging participated as tutors by leading core multidisciplinary seminars in the Foundations of Medical Practice curriculum.

Dr. Frank Goldberg, Dr. Wayne Deitel and Dr. Danny Marcuzzi provided 102 hours of teaching time as tutors, plus an additional 55 hours of preparation for this course.

## **Year II Seminars**

The chest imaging seminar, previously given through the academies was revised again last year. The seminar series was prepared and supervised by Dr. TaeBong Chung. This 2 hour seminar was given to smaller seminar groups of students at the academies by the following radiologists. Dr. Dae Chung, Dr. TaeBong Chung, Dr. Tim Dowdell, Dr. Nasir Jaffer, Dr. Myles Margolis, Dr. Narindar Paul and Dr. Harry Schulman participated in this seminar series.

## **Full Class Lecture in Trauma Radiology**

A 2 hour, full class, lecture was given introducing key elements of trauma imaging. Topics covered included imaging of the cervical spine and brain, chest trauma and imaging of abdominal trauma. Participating radiologists in this lecture included Dr. William Weiser, Dr. Paul Hamilton and Dr. Richard Aviv.

## **Clerkship**

The two-year clerkship consists of 78 weeks of clinical rotations. The department of medical imaging provides an array of teaching activity during the clerkship program.

## **Year III Clerkship**

### **Essentials of Radiology Lecture Seminar Series**

Dr. Manohar Schroff and Dr. Nasir Jaffer coordinated this lecture series.

Five half day teaching sessions were presented to the year three class to help prepare them prior to the commencement of their clinical clerkship. This lecture/seminar series utilized a, one hour, full class lecture format followed immediately by a two hour, case review, seminar in which the class was divided into four groups.

The curriculum for this series brought together elements from the first and second undergraduate years in medical imaging instruction and emphasised core elements of medical imaging geared to the needs of clinical clerks. Full class lectures in this new program were delivered by the following radiologists in the following subject areas. Dr. Eran Hayeems – Interventional Radiology, Dr. TaeBong Chung – Chest Imaging, Dr. Tanya Chawla – Abdominal Imaging, Neuroradiology – Dr. Manohar Schroff, Musculoskeletal Imaging – Dr. Robert Bleakney.



Seminars for this series were lead by the following radiologists.

**Interventional radiology** - Dr. Raymond Chan, Dr. Elizabeth David, Dr. Matthew Benjamin and Dr. E. Hayeems

**Chest Imaging** - Dr. TaeBong Chung, Dr. Kartik Jhaveri, Dr. Narindar Paul and Dr. Harry Schulman.

**Abdominal Imaging** - Dr. Tanya Chawla, Dr. Wayne Deitel, Dr. Nasir Jaffer and Dr. Myles Margolis.

**Neuroradiology** - Dr. Manohar Schroff, Dr. Tom Marotta, Dr. Walter Kucharczyk and Dr. Suzanne Laughlin.

**Muskuloskeletal Imaging** - Dr. Robert Bleakney, Dr. Joel Rubinstein, Dr. Matthew Lax and Dr. Tim Dowdell.

### **Elective Students**

A significant number of third year medical students at the University of Toronto took electives in radiology at the various teaching hospitals during the 2004-2005 Academic year.

### **Hospital Based Seminars**

Various Year III seminars have been held in the teaching hospitals as part of the Medicine - Surgery block rotations. These include a series of chest seminars, interventional, gastrointestinal, as well as neuroradiology seminars.

## **Year IV**

### **Medical Imaging Electives**

Electives in Medical Imaging are among the most popular medical under-graduate electives at the University of Toronto. In addition to teaching basic radiology skills these electives also serve to promote awareness about medical Imaging within the undergraduate medical community. Elective students are also given an opportunity to consider specialty training in radiology during these teaching blocks.

These electives remain very popular in the undergraduate elective program.

### **University of Toronto Electives**

One hundred seven University of Toronto medical students took radiology electives in their third and fourth year at the various teaching hospitals during the 2004-2005 academic year.

## **Visiting Elective Students**

Forty nine medical students from outside medical schools, many of whom were overseas foreign students in their senior undergraduate year, took part in visiting electives during the 2004–2005 academic year.

## **The Bruce Tovee LMCC Review Lectures**

The Undergraduate Committee in Radiology has participated in this review course for many years. Three hours of radiology review lectures were given to final year medical students. The majority of these were University of Toronto students. The review course has also been very well received and attended by final year students from McMaster and other local medical schools. The lectures were given in the evening at the main medical lecture theatre of the University. Three, one hour lectures were given. These are listed below.

- i) Musculoskeletal Radiology – Dr. Robert Bleakney
- ii) Chest Radiology – Dr. TaeBong Chung
- iii) Gastrointestinal Radiology – Dr. Nasir Jaffer
- iv) Neuroradiology – Dr. Eugene Yu

The final year students have had access to a series of notes, the MCCQE Study Guide. The medical imaging portion of this lecture series and syllabus were updated and revised by the participating radiologists.

## **Other Teaching Activities and Involvement**

### **Physiotherapy Student Seminars**

A series of seminars are given to the physical therapy students at the University of Toronto by radiologists at the various Academies each year.

### **Career Sampling Electives in Radiology**

On a somewhat informal basis, undergraduate students, many in Year I have spent various periods of time, from several days to weeks, in all of the teaching hospital radiology departments as part of a career sampling experience.

### **Undergraduate Teaching Computer File for Radiology**

A comprehensive interactive computerized teaching program, called **Radiofile** has been developed by the Department of Medical Imaging. This program allows undergraduate students to have a uniform exposure to core medical imaging teaching material. The students can access this program either in the various radiology departments, or in the Academy computer laboratories. The program is available centrally, in the computer laboratory in the Medical Sciences Building.

### **The Internet and Undergraduate Education in Radiology**

Under the direction of Dr. Nasir Jaffer, the Department of Medical Imaging hosts an internet web site on which various program descriptions are posted. This web site is also playing an expanding role in the Internet delivery of imaging seminars and programs as well as in the evaluation of undergraduate Medical Imaging teaching programs.

### **The Future Direction of the Medical Imaging Undergraduate Teaching Program**

Medical Imaging is playing an expanding role in modern medical practice and as a result, there is an increasing demand for undergraduate teaching in this field. In response to this need, efforts have been under way to standardize the major components of the undergraduate medical imaging teaching program through the development and implementation of standardized curriculum and electronic teaching tools. This ongoing effort has and will continue to further optimize the efficiency, scope and value of the undergraduate teaching program in Medical Imaging at the University of Toronto.

## **CONTINUING EDUCATION PROGRAM**

### **Organ Imaging Review September 26 - 29, 2004**

#### **Course Description**

This four day course focuses on aspects of primary interest to both radiologists and radiologists-in-training. The course content includes general concepts of diagnostic imaging with emphasis on recent advances. The participant learns new ideas and has the opportunity to enhance their knowledge in selected common clinical situations. The participant is also able to participate in problem-solving with daily case reviews in each of the organ systems.

Course Chairman: Walter Kucharczyk, M.D.  
Course Director: Paul Hamilton, M.D.

#### **University of Toronto Faculty**

Atri, Mostafa, M.D., Associate Professor  
Babyn, Paul, M.D., Associate Professor  
Blaser, Susan, M.D., Associate Professor  
Bleakney, Robert, M.D., Associate Professor  
Chawla, Tanya, M.D., Assistant Professor  
Christakis, Monique, M.D., Assistant Professor  
Chuang, Sylvester, M.D., Assistant Professor  
Chung, Tae-Bong, M.D., Assistant Professor  
Curpen, Belinda, M.D., Assistant Professor  
Daneman, Alan, M.D., Professor  
Dill-Macky, Marcus, M.D., Assistant Professor  
Farb, Richard, M.D., Assistant Professor  
Fox, Allan, M.D., Professor  
Haider, Masoom, M.D., Assistant Professor  
Hamilton, Paul, M.D., Assistant Professor  
Hanbidge, Anthony, M.D., Assistant Professor  
Herman, Stephen, M.D., Associate Professor  
Ibach, Deborah, M.D., Locum  
Jong, Roberta, M.D., Associate Professor  
Kim, Tae Kyoung, M.D., Associate Professor  
Kulkarni, Supriya, M.D., Assistant Professor  
Navarro Kunstmann, Oscar, M.D., Assistant Professor  
Lax, Matthew, M.D., Assistant Professor  
Macgowan, Christopher, PhD, Assistant Professor  
Manson, David, M.D., Assistant Professor  
Merchant, Naeem, M.D., Assistant Professor

Montanera, Walter, M.D., Associate Professor  
Muradali, Derek, M.D., Assistant Professor  
Noël de Tilly, Lyne, M.D., Assistant Professor  
O’Hayon, Bonnie, M.D., Clinical Fellow  
O’Malley, Martin, M.D., Assistant Professor  
Oudjhane, Kamaldine, M.D., Associate Professor  
Paul, Narinder, M.D., Assistant Professor  
Pearce, Dawn, M.D., Lecturer  
Provost, Yves, M.D., Lecturer  
Ranson, Marilyn, M.D., Assistant Professor  
Rubenstein, Joel, M.D., Associate Professor  
Salonen, David, M.D., Assistant Professor  
Shumak, Rene, M.D., Assistant Professor  
Shroff, Manohar, M.D., Assistant Professor  
Symons, Sean, M.D., Assistant Professor  
TerBrugge, Karel, M.D., Professor  
Traubici, Jeffrey, M.D., Assistant Professor  
Weisbrod, Gordon, M.D., Professor  
Weiser, William, M.D., Professor  
White, Lawrence, M.D., Associate Professor  
Willinsky, Robert, M.D., Professor  
Wilson, Christine, M.D., Assistant Professor  
Wilson, Stephanie, M.D., Professor  
Wright, Barbara, M.D., Assistant Professor

### **Guest Faculty**

Dachman, Abe, M.D.  
Professor  
Department of Radiology  
University of Chicago  
Chicago, Illinois

## INVITED LECTURERS AND VISITING PROFESSORS

October 4-5, 2004

Dr. Nancy Wadden  
Department of Radiology  
Memorial University of Newfoundland

“Breast Pathology: A Radiologist’s Perspective”

“Breast Cancer Epidemiology/Breast Cancer Screening in  
Canada”

“Breast Ultrasound: sonographic Mamographic Correlation”

November 1-2, 2004

Dr. Myrosia Mitchell  
Department of Radiology  
University of Chicago

“Imaging of Morbid Obesity Surgery”

“The Adrenal Glands”

“Multimodality Imaging of Liver Lesions”

January 10-11, 2005

Dr. David Naidich  
Department of Radiology  
New York University Medical Center

“Diffuse Lung Nodules”

“Lung Nodule Evaluation”

“Pulmonary Thromboembolism”

February 7, 2005

Dr. Sylvester Chuang  
Department of Diagnostic Radiology  
Hospital for Sick Children

“MEG – Truth or Myth: How Useful is it?”

February 8, 2005

Dr. Charles Raybaud  
Department of Diagnostic Radiology  
Hospital for Sick Children

“Development and Malformations of the Corpus Callosum”

March 7-8, 2005

Dr. J. Antonio Bouffard  
Department of Radiology  
Henry Ford Hospital

“Ultrasonography of the Elbow”

“Ultrasonography of the Lower Extremity”

“Ultrasonography of the Adult Hip”

April 11-12, 2005

Dr. Richard M. Gore  
Department of Radiology  
Evanston Northwestern Healthcare

“The Enterocolitides: MDCT and DC Barium Features”

“The Subperitoneal and Interfascial Planes: The Keys to  
Understanding the Intra-abdominal Spread of Disease”

“Diffuse Liver Disease”

May 2-3, 2005

Dr. Mark E. Schweitzer  
Department of Radiology  
New York University

“MR Wrist: Internal Derangements”

“Stress to Ligaments, Tendons, Muscle, Cartilage and Bone”

“MR of the Elbow”