

Department of Medical Imaging

Annual Report 2002-2003

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CHAIR'S REPORT

The Annual Report details the contributions made by our faculty, residents and fellows to the Department, and to the greater academic and clinical community. It also describes the major physical and organizational changes at the University and its affiliated teaching hospitals. This report demonstrates the remarkable breadth of our activities and the accomplishments of our people. Our people continue to be its most important asset. Accordingly, as in previous years, I would like to highlight the accomplishments of our faculty members, especially those that have distinguished themselves in teaching and research.

Our departmental teaching awards this year were: Dr. Lisa Ehrlich was presented with the Edward L. Lansdown Award for Outstanding Teaching in the Residency Training Program. Dr. Edna Becker, Dr. Robert Bleakney, Dr. Monique Christakis, Dr. Dae-Gyun Chung, Dr. TaeBong Chung, Dr. Lisa Ehrlich, Dr. Nasir Jaffer, Dr. Matthew Lax, Dr. Damien Maharai, Dr. Walter Montanera, Dr. Tom Marotta, Dr. Harry Shulman, and Dr. Jane Wall were recognized for outstanding teaching in the residency program; Dr. Susan Blaser, Dr. Alan Daneman, Dr. Masoom Haider, Dr. Anthony Hanbidge, Dr. Chia Sing Ho, Dr. Kevin Ibach, Dr. Anne Keller, Dr. David Manson, Dr. Naeem Merchant, Dr. Lyne Noël de Tilly, Dr. Martin O'Malley, Dr. Manohar Shroff, and Dr. Shi-Joon Yoo were recognized for outstanding teaching in the fellowship program. Dr. Korosh Khalili, and Dr. Stephanie Wilson achieved distinction for outstanding teaching in both the residency and fellowship programs.

Our department maintained the support of its faculty for protected research time. This year, the faculty members with departmentally sponsored research time were: Dr. Mostafa Atri (Accuracy of Unenhanced Helical CT and Added Value of Enhanced Helical CT in the Assessment of Acute Abdomen), Dr. Susan Blaser (Correlation of Radiologically Determined Labyrinthine Dysplasias with Audiometric Data and Prediction of Response to Cochlear Implantation), Dr. Petrina Causer (ACRIN 6667: MRI Evaluation of the Contralateral Breast in Women with a Recent Diagnosis of Breast Cancer), Dr. Bairbre Connolly (Prospective Evaluation of the Safety and Efficacy of Sonographically Guided Tendon Sheath Injections in Children), Dr. Marcus Dill-Macky (Radiofrequency Ablation of Hypervascular Liver Lesions: Prediction of Success Using Contrast Enhanced Ultrasound), Dr. Richard Farb (Idiopathic Intracranial Hypertension: The Prevalence and Morphology of Sinovenous Stenosis), Dr. Roberta Jong (The ACRIN Digital Mammography Imaging Screening Trial), Dr. Korosh Khalili (The Utility or Futility of a Second Imaging Test in the Assessment of Acute Abdominal Pain in Patients Presenting to the Emergency Department), Dr. Derek Muradali (Contrast Enhanced Sonography of Breast Nodules and Lymph Nodes: Vascular Morphology and Pathologic Correlation), Dr. Dawn Pearce (Weight-bearing CT Scan of the Feet), Dr. Manohar Shroff (Emergency Cervical Spine X-rays in Children: Differences in Interpretation by Subspecialization), Dr. Lawrence White (Quantitative T2 Mapping of Cartilage Transplantation in an Animal Model), Dr. Stephanie Wilson (Characterization of Indeterminate Hepatic Nodules in High-Risk Patients for Hepatocellular Carcinoma with Contrast-Enhanced Ultrasound).

The scheduling of our Annual Research Day was disrupted due to the outbreak of SARS in Toronto. After two postponements Research Day was eventually held in an abbreviated format in the Sadowski Auditorium at Mount Sinai Hospital on September 23, 2003. As has been the trend in the recent past, the progressive improvement in the content and style of the research papers at Research Day has been very gratifying to all of us with an interest in the academic development of our department.

The academic promotions this year were (effective July 1, 2003): to Full Professor – Dr. Tim Roberts; to Assistant Professor - Dr. Wayne Deitel, Dr. Michael Temple and Dr. Jeffrey Traubici. We welcomed several new faculty to our department: Dr. Matthew Benjamin - University Health Network, Dr. Robert Bleakney - University Health Network, Dr. Kartik Jhaveri - University Health Network, Dr. Philip John - Hospital for Sick Children, Dr. Supriya Kulkarni - University Health Network, Dr. Caitlin McGregor - Sunnybrook and Women's College Health Sciences Centre, Dr. Yves Provost - University Health Network, Dr. Louis Wu - St. Michael's Hospital, Dr. Jing Xiang - Hospital for Sick Children.

Dr. Alan Moody returned to Toronto after 10 years in the U.K., most recently having held the position of Chair in the Department of Radiology at the University of Nottingham. Alan succeeded Dr. Harry Shulman as Radiologist-in-Chief and Sunnybrook and Women's College Health Science Centre.

Our research program continued to expand under the direction of Dr. Tim Roberts with the recruitment of several additional scientists. The program has gained considerable momentum with a growing complement of scientists, radiologists, post-doctoral personnel and graduate students.

Our undergraduate program continued to evolve under the direction of Dr. Tim Dowdell and Dr. Nasir Jaffer, and the help of several summer students. The conversion of our teaching material on radiologic-anatomic correlation to electronic media was completed. Tim and Nasir also organized a full-week radiology curriculum to the 3rd year class, which was delivered with success by 12 of our faculty. I congratulate and thank Tim, Nasir and our faculty for their efforts.

The transition of our Residency Program to our new Program leaders (Dr. Walter Montanera, Director, and Dr. Suzanne Laughlin, Co-Director) went forward very smoothly. The Fellowship and Continuing Education Programs continued to grow under the leadership of Dr. Robyn Pugash and Dr. Paul Hamilton and the participation of all our faculty members.

In closing, I would like to thank Amy Shea and Gina Sciortino, the administrative staff at the university office. They are wonderful friends and are tremendously helpful in getting the Department's work done. I greatly appreciate their efforts.

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

DEPARTMENT OF MEDICAL IMAGING - UNIVERSITY OF TORONTO

(as of June 30, 2003)

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 Pugash, R.
Neuroradiology Willinsky, R.
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.
Secretary Shea, A.

COMMITTEES

Executive Committee

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

Promotions Committee

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

Undergraduate Teaching Committee

Dowdell, T. (Committee Chair)
Chan, R.
Jaffer, N.
Kachura, J.
Lax, M.
Montanera, W.
Paul, N.
Pearce, D.
Weiser, W.

Specialty Training Committee

Montanera W. (Committee Chair)
Christakis, M.
Hayeems, E.
Hershop, M.
Laughlin, S.
MacDonald, C.
Mikulis, D.
Pearce, D.
Lem, S. (Chief Resident)
Bitar, R.
Chiavars, M.
Glickman, A.
Ossip, M.
Pugh, J.

UNIVERSITY OF TORONTO FULLY AFFILIATED HOSPITALS AND INSTITUTES

| | |
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| Hospital for Sick Children | 555 University Avenue Toronto, Ontario M5G 1X8 |
| Mount Sinai Hospital | 600 University Avenue Toronto, Ontario M5G 1X5 |
| St. Michael's Hospital | 30 Bond Street Toronto, Ontario M5B 1W8 |
| Sunnybrook & Women's College Health Sciences Centre | |
| Sunnybrook Campus | 2075 Bayview Avenue Toronto, Ontario M4N 3M5 |
| Women's College Campus | 76 Grenville Street Toronto, Ontario M5S 1B2 |
| University Health Network | |
| Princess Margaret Hospital | 610 University Avenue Toronto, Ontario M5G 2M9 |
| Toronto General Hospital | 200 Elizabeth Street Toronto, Ontario M5G 2C4 |
| Toronto Western Hospital | 399 Bathurst Street Toronto, Ontario M5T 2S8 |
| Centre for Addiction and Mental Health | 250 College Street Toronto, Ontario M5T 1B8 |
| Positron Emission Tomography Centre | 250 College Street Toronto, Ontario M5T 1B8 |

DEPARTMENT OF MEDICAL IMAGING FACULTY

Academic Rank, Subspecialty Division and Hospital as of June 30, 2003

| <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 |
| Asch, M.R. | Assistant Professor | Vascular Imaging | Mount Sinai Hospital |
| Ash, J.M. | Associate Professor | Pediatric Imaging | Hospital for Sick Children |
| Atri, M. | Associate Professor | Abdominal Imaging | 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 |
| Benjamin, M. | Assistant Professor | Vascular 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 |
| Bobechko, P.E. | Assistant Professor | Musculoskeletal Imaging | University Health Network |
| Bret, P. | Professor | Abdominal Imaging | Mount Sinai Hospital |
| Bukhanov, K. | Assistant Professor | Breast Imaging | Mount Sinai Hospital |
| Caldwell, C.B. | Assistant Professor | Research | Sunnybrook & Women's College Health Sciences Centre |
| Causier, P. | Lecturer | Abdominal Imaging | Sunnybrook & Women's College Health Sciences Centre |
| Chait, P.G. | Associate Professor | Pediatric Imaging | Hospital for Sick Children |
| Chan, R. | Lecturer | Vascular Imaging | St. Michael's Hospital |
| Chawla, T. | Assistant Professor | Abdominal Imaging | Mount Sinai Hospital |
| Cheung, G. | Assistant Professor | Neuroradiology | Sunnybrook & Women's College Health Sciences Centre |
| 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. | Lecturer | Cardiothoracic Imaging | University Health Network |
| Clark, J.A. | Assistant Professor | Vascular Imaging | Sunnybrook & Women's College Health Sciences Centre |
| 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 |
| Crossin, J. | Assistant Professor | Cardiothoracic Imaging | University Health Network |
| Crawley, A. | Assistant Professor | Research | University Health Network |
| Damyantovich, A. | Assistant Professor | Research | University Health Network |
| Daneman, A. | Professor | Pediatric Imaging | Hospital for Sick Children |
| Deitel, W. | Assistant Professor | Abdominal Imaging | St. Michael's Hospital |
| Dill-Mackay, M. | Assistant Professor | Breast Imaging | University Health Network |
| 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 | University Health Network |
| Fox, A. | Professor | Neuroradiology | Sunnybrook & Women's College Health Sciences Centre |
| Ganguli, N. | Lecturer | Nuclear Medicine | Sunnybrook & Women's College Health Sciences Centre |
| 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. | Lecturer | Vascular Imaging | University Health Network |

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|-------------------|---------------------|-----------------------------|---|
| 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 |
| Ibach, K. | Lecturer | Abdominal Imaging | University Health Network |
| Jaffer, N.M. | Associate Professor | Vascular Imaging | Mount Sinai Hospital |
| Jhaveri, K. | Assistant Professor | Abdominal Imaging | University Health Network |
| John, P. | Associate Professor | Pediatric Imaging | Hospital for Sick Children |
| Jong, R.A. | Assistant 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 |
| 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 | University Health Network |
| Lazinski, D. | Lecturer | Neuroradiology | Mount Sinai Hospital |
| MacDonald, C.E. | Assistant Professor | Pediatric Imaging | Hospital for Sick Children |
| Macgowan, C. | Assistant Professor | Pediatric Imaging | Hospital for Sick Children |
| Maharaj, D. | Lecturer | Nuclear Medicine | Mount Sinai Hospital |
| 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 | University Health Network |
| 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. | Assistant Professor | Breast Imaging | University Health Network |
| 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. | Lecturer | 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 |
| Rappaport, D. | Associate Professor | Cardiothoracic Imaging | Mount Sinai Hospital |
| Roberts, H. | Associate Professor | Cardiothoracic Imaging | University Health Network |
| Roberts, T. | Professor | Research | University of Toronto |
| Rosen, I.E. | Assistant Professor | Abdominal Imaging | Sunnybrook & Women's College Health Sciences Centre |
| 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 |
| Shorter, A.M. | Lecturer | Abdominal 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 |
| Sniderman, K.W. | Associate Professor | Vascular Imaging | University Health Network |

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|------------------|---------------------|-----------------------------|---|
| 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 |
| Ting, G. | Lecturer | Abdominal Imaging | Sunnybrook & Women's College Health Sciences Centre |
| Toi, A. | Associate Professor | Abdominal Imaging | University Health Network |
| 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 | St. Michael's Hospital |
| 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, C. | Assistant Professor | Breast Imaging | 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. | Lecturer | Abdominal Imaging | St. Michael's Hospital |
| 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 |
| 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 |
| Noseworthy, 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 |
| Crowley, S. | Instructor |
| Goodin, L. | Instructor |
| Kelly, E. | Instructor |
| Poulin, D. | Instructor |
| Rodrigues, G. | Instructor |
| Sharpe, W. | Instructor |
| Souter, C. | Instructor |
| Stone, J. | Instructor |
| Topple, A. | Instructor |
| Watson, T. | Instructor |
| Wilson, D. | 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

Overall clinical activity continued to increase at a rate of approximately 5%, although the SARS outbreak significantly impaired the department's ability to deliver the usual volume of clinical services. There are several academic and clinical highlights. Dr. Naeem Merchant was honoured as the recipient of the Young Radiologist Award presented by the Canadian Association of Radiologists (CAR) at the 65th Annual Scientific Meeting. This national award recognizes academic achievement, contributions and involvement in the Canadian Radiological Community of a Radiologist in practice for 10 years or less. The department installed a PET/CT system. The Ministry of Health provided additional funding for MRI of \$1.2M at MSH and \$2.4M for UHN and it obtained MOH approval for an additional 7 CT scanners. In the summer of 2003 the department at TGH moved to the New Clinical Service building. Interventional Radiologists from across Canada and USA attended a multidisciplinary Tumor Ablation Conference organized by Drs. Murray Asch and John Kachura. Local faculty included: Drs. Marcus Dill-Macky, Chia Sing Ho, Matthew Lax and Dheeraj Rajan. The department instituted a policy of cost recovery on research projects; this resulted in approximately \$160,000 of gross revenue recoveries. New communication and teaching tools including a Radiation Protection Newsletter and a Web-based teaching program were developed and made available to the Radiology and non-Radiology users.

Sunnybrook and Women's College Health Sciences Centre

Sunnybrook & 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 soon to be installed 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.

St. Michael's Hospital

The Medical Imaging Department at St. Michael's Hospital has undergone considerable remodeling in the past few years. The annual tally of imaging examinations is over 240, 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 recently replaced, with two new helical CT scanners, three new MRI units, and three angio suites, including a bi-plane neuro interventional facility. The general radiographic equipment has been upgraded to PACS readiness, and PACS is expected to be operational in late 2003. An aggressive recruiting campaign of subspecialist radiologists has brought full-time staffing levels to 17 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 and of the Imaging Department in particular. Other unique hospital attributes which are reflected in the Medical Imaging Department at St. Michael's are the Inner City Health focus, the world-renowned Minimal Access Therapeutics Program and the Hereditary Hemorrhagic Telangiectasia. Further, St. Michael's is downtown Toronto's helipad-serviced trauma centre, and lithotripsy centre, and has outstanding clinical and research programs in renal, 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 137,000 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.

Asch M (Principal Investigator), Lem S, Gallinger S, Kachura J, Swallow S, Blackstein M (Co-Investigators). Bland hepatic embolization for hepatic neuroendocrine metastasis. Biosphere Medical. \$24,000.00 USD. January 2002-September 2003.

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

Blanchard R (Principal Investigator), Mikulis DJ (Co-Investigator). Brain structure and function in pedophiles. CIHR. \$157,190.00. 2001-2004.

Boyd NF (Principal Investigator), Bronskill M, Bukhanov K, Fishell E, Freidenreich C, Minkin S, Wright B, Yaffe MJ (Collaborators). Determinants of breast tissue composition in young women. National Institutes of Health and Ontario Cancer Institute/Princess Margaret Hospital. \$911,954.00. 2002-2005.

Boyd NF (PI), Chiarelli A, Fishell E, Hanna W, Holloway C, Jong RA (Co-Investigator). Mammographic Densities and Risk of Breast Cancer. National Institutes of Health \$301,851USD.1999-2003

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

Burns PN (Principal Investigator), Wilson SR (Co-Investigator). Nonlinear imaging with ultrasound contrast agents: MOP-12482. Medical Research Council of Canada. \$95,748.00. June 1, 2000-May 31, 2004.

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.

Causer P, Piron CA, Plewes DB. Breast MRI-ultrasound co-registration: Hybrid imaging for MRI detected lesions. (pilot study) Terry Fox Foundation (\$12,000).

Chow E (Principal Investigator), Mikulis DJ (Co-Principal Investigator). Potential predictor of schizophrenia in a high genetic risk sample: Ontario project. Schizophrenia Society of Ontario. \$40,000.00 per annum. 2002-2004.

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Durie P, Dirks M, Doyle J, Saunders F, Barron M, Hagen L, Manson D. Pancreatic Complications of Hematopoietic Stem Cell Transplantation in Children: A Prospective Study of the Incidence, Associated Factors, and Natural History. Pediatric Consultants. \$4,069.00. 10/2001 to 09/2003.

Fajardo, LL(PI), Pisano ED (Co-PI), Yaffe MJ, Jong RA (Site Investigator) Clinical Evaluation of Digital Mammography. US Army Medical Research and Material Command. \$US 55,807 01/01/00 – 02/28/03

Farb R (Principal Investigator). Ateco MR angiography for the follow up of patients with intracranial cerebral aneurysms treated with Guglielmi Detachable Coils. The Canadian Heads of Academic Radiology Grant-in-Aid. \$5,000.00. June 2002-2003.

Feldman B, Blanchette V, Babyn P. An open dose escalating factor VIII prophylaxis study assessing the safety efficacy and cost effectiveness in young patients with severe hemophilia. Bayer, Healthcare Division. \$416,243.00. October 1996 - 2002

Fleshner N (Principal Investigator), Toi A, Sweet J, Evans A, Gleave M, Klotz L, Rao V (Co-Investigators). Incidence and characteristics of prostate cancers detected in men with prostate specific antigen values < 2.5 ng/ml. Canadian Prostate Cancer Research Initiative (CPCRI) and National Cancer Institute of Canada (NCIC). \$50,000.00. February 1, 2003 for one year.

Gertner MR (Principal Investigator), Dill-Macky MJ, Haider MA, Sweet JM, Sherar MD, Trachtenberg J (Co-Investigators). Contrast enhanced ultrasound (US) imaging and dynamic contrast enhanced MRI (DCE-MRI) to assess completeness of transperineal interstitial microwave thermal therapy (TIMTT) for prostate cancer. Canadian Prostate Cancer Research Initiative IDEA Grant, National Cancer Institute of Canada. \$50,000.00. 2003-2004.

Goss PE, Thompson L (Principal Investigators), Bukhanov K, Muradali D (Collaborators). A protocol to study the effects of dietary flaxseed on mammographic density. Canadian Breast Cancer Research Initiative. \$218,165.00. 1998 (end date unknown).

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Haider M (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 (ongoing).

Herschorn S (PI), Co-investigator: Atri M. A prospective evaluation of female patients receiving Contingen Bard Collagen implant mid-urethra for the treatment of stress urinary incontinence. \$65,875.00, May 2003 – July 2004, funded by C. R. Bard Inc.

Jong RA . Optical Characterization of Breast Tissue Using Softscan Imaging Advanced Research Technologies, \$66,680 for June 2003 – June 2004.

Kucharczyk W. Functional Imaging Research Network (FIRN) - \$34,000,000. With other principal investigators: Donald Stuss, Mark Henkelman and Franco Vacarino. Funding agency: CFI. Continuation. Grant attributed to Dr. Walter Kucharczyk \$6,500,000. 1990-1995.

Kucharczyk W. Ontario Consortium for Image Guided Surgery. \$26,000,000. With other principal investigators: Mike Sherar, Terry Peters. Grant attributed to Dr. Walter Kucharczyk \$4,000,000. Funding agency: ORDCF. 1990-1995.

Lehman C (principal investigator), Causer P (Co-investigator). MRI Screening of the Contralateral Breast. ACRIN 6667. NIH (\$300,000 to our centre). 2003-2006

Lilge LD (Principal Investigator), Wilson BC, Boyd NF, Yaffe MJ, Jong RA (Co-Investigator). Optical Transillumination Spectroscopy of Breast Tissue to Determine Cancer Risk in Pre- and Post-menopausal Women. United States Army Medical Research and Materiel Command \$200,000 USD .2000-2003

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. CIRH (Canadian Institutes of Health Research). \$176,506.00 annually for 3 years. January 29, 2003 for 3 years.

Mah K, Caldwell CB, Danjoux C. (Principle Investigators) “Can 18FDG-PET images provide the 3D extent of lung tumour motion for individualized radiation targeting?” National Cancer Institute of Canada Operating Grant. \$63,000/year (2 years total). 2002-2003

Merchant N (Principal Investigator). Ontario Consortium for Cardiac Imaging. Ontario Research and Development Challenge Fund. ORDCF \$1,886,700.00. 2001-2006.

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Mikulis DJ (Co-Principal Investigator). The Behavioral Research and Imaging Network. Ontario Research and Development Challenge Fund. \$95,000.00/yr. 2002-2007.

Milosevic M (Principal Investigator), Parker C, Warde P, Toi A, Sweet J (Co-Investigators). A clinical study of the effect of recombinant human erythropoietic (rHuEPO) of tumor oxygenation in prostate cancer. Anemia Institute for Research and Education. \$39,000.00. August 1, 2001-July 31, 2003.

Milosevic MF (Principal Investigator), Toi A, Bristow R, Panzarella T, Sweet J, Headley D, Hill R (Co-Investigators). A study of transrectal tumor oxygen measurements in patients with clinically localized prostate cancer. US Department of Defence Prostate Cancer Research Program. \$198,375.00. 2001-2004.

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Paszat L (Principal Investigator), Jong RA (Co-investigator). A Population-based Study of Outcomes of Screening Mammography among Ontario Women 40 to 49 years of age. Canadian Breast Cancer Research Initiative \$692,805 for 2001-2004.

Pisano ED (Principal Investigator), Hendrick RE (Co-Principal Investigator), Jong RA (Toronto Site Clinical Investigator) Digital Mammography Imaging Screening Trial National Cancer Institute. \$26,500,000 (US\$) for 2001-2004

Plewes DP, Yaffe MJ, Holloway CMB, Jong RA, Causer P, Den Haag Platform II – Imaging Component. (\$18,128,400) for 2003-2007

Robert H. (Principal Investigator). “International Early Lung Cancer Action Program”. Lusi Wong Lung Cancer Early Detection Research Fund. \$2.5 million. 2003-2004.

Saint-Cyr J, Mikulis DJ, McAndrews P (Principal Investigators). Deep brain stimulation effects on task-driven fMRI. Natural Sciences and Engineering Research Council of Canada. \$64,000.00. 2001-2004.

Schnall M (principal investigator), Causer P (Co-investigator). High risk breast cancer screening study ACRIN 6884. NIH (\$55,319 U.S. to our centre). 2001-2003.

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Ontario R&D Challenge Fund \$9,102,570 2000-2004

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Yaffe, MJ(PI) Burns P, Boyd NF, Catzavelos C, Rowlands J, Plewes D, Bronskill M, et al, Jong RA (co-investigator) Ontario Centre of Excellence in Breast Cancer Imaging Research, -Contrast Digital Mammography, -Using CAD to Optimize Image Display in Digital Mammography. Ontario R & D Challenge Fund \$9,102,570.00. 2000-2004

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Daunt SW, Cohen JH, Miller SF. Age-related ranges for the Haller index in children. Radiological Society of North America. Chicago, Illinois; December 1-6, 2002.

Dipanka S, Blaser S, Chuang S, Shroff M, Hiew CY. Basal Ganglia Abnormalities in Neonates and Early Infancy; scientific exhibit at the Radiological Society of North America at Chicago, December 2002. The exhibit won a Magna Cum Laude.

Fox AJ. Merck Frosst Visiting Professor, University of Calgary, Clinical Neurosciences, 1) Complicated stroke cases, stroke rounds 2) Near occlusions of the carotid artery, Grand Rounds. October 30 – Nov. 1, 2002.

Fox AJ. Visiting Professor, University of Manitoba. 1) Training session: direct sclerotic embolizations of facial venous angiomas; 2) Miscellaneous stroke cases; 3) Near occlusion of internal carotid artery (Manitoba Radiology Society). February 2003.

Fox AJ. Invited Symposium speaker, Interventional Advances in Neurovascular Disease. History of interventional neuroradiology in Canada. Canadian Congress of Neurological Sciences, Quebec 2003.

Gaetz W, Cheyne D. Neuromagnetic imaging of somatosensory cortex using a minimum-variance beamformer. 11th World Congress of Psychophysiology. Montreal, Quebec, 2002

Gaetz W, Cheyne D. Neuromagnetic imaging of somatosensory cortex using dipole analysis and synthetic aperture magnetometry (SAM). 13th International Conference on Biomagnetism. Jena, Germany. 2002

Georgalas C, Thomas K, Owens C, Burnett C, Roberts G, Abramovich SA, Patel KS, Tolley NS and Lack G. Medical treatment for adenoidal hypertrophy and rhinosinusitis in children – an evaluation of clinical response and changes on magnetic resonance imaging. American Academy of Otolaryngology Head and Neck Surgery Congress, San Diego, USA 2002

Hayeems E. Embolization. Canadian Interventional Radiology Association Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. June 2003.

Hayeems E. Lower GI bleeding. Canadian Interventional Radiology Association Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. June 2003.

Hayes-jordan A, Diamond IR, Chait PG, Temple M, Kim PCW. Image-guided treatment of bowel stenosis. A novel treatment of congenital duodenal web: Image guided treatment of congenital and acquired bowel stenosis in children. 12th Annual Congress for Endosurgery in Children, Los Angeles, CA, March 2003.

Herman SJ. Soft Copy Reporting. Go Digital 3. Birmingham, England. April 24, 2003.

Herman SJ. Introduction to speech recognition. Society of Computer Applications in Radiology 2003. Boston, Massachusetts, U.S.A.. June 7-10, 2003.

Herman SJ. Creation of a software application for the clinical radiologist. United Kingdom Radiological Conference. Birmingham, England. June 15, 2003.

Hui G, Temple M, Chait P, John P, Amaral J, Faingold R, Connolly B. Gas distribution in abdominal collections on CT may predict drainability. Society of Interventional Radiology, Salt Lake City, Utah. March 2003.

Ishii R, Otsubo H, Ochi A, Kitayama M, Xiang J, Chuang SH, Chuang NA, Snead OC III, Pantev C. SAM compared with EcoG in children with focal cortical dysplasia. American Epilepsy Society, Seattle, Washington, December 9, 2002.

John P, Richmond L, Geary D, Stevens D, Klasninovska B, Chait PG, Temple M, Amaral J, Connolly B. Renal angiography (RA) & Percutaneous transluminal angioplasty (PTA) in hypertensive children. ESPR, Genoa, Italy. June 2003.

Kachura JR. Ultrasound guided ablation (hands-on) workshop. Society of Interventional Radiology, 28th Annual Scientific Meeting. Salt Lake City, Utah, U.S.A.. March 30, 2003.

Kachura JR. Embolization (hands-on) Workshop. Canadian Interventional Radiology Association, 2nd Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. May 29, 2003.

Kachura JR. Moderator. Embolotherapy. Canadian Interventional Radiology Association, 2nd Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. May 30, 2003.

Kachura JR. Foreign body retrieval. Canadian Interventional Radiology Association, 2nd Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. May 31, 2003.

Kachura JR. Clinical perspective of renal vascular disease. Boston Scientific Corporation Canadian Sales Meeting. Deerhurst Resort, Huntsville, Ontario, Canada. June 13, 2003.

Kassel EE. Salivary neoplasia. American Society of Head and Neck Radiology Annual Conference. Cleveland, Ohio, U.S.A.. September 15, 2002.

Kassel EE. MRI of the paranasal sinuses and orbit. Canadian Association of Radiologists Annual Meeting, MRI Symposium. Mount Ste. Anne, Quebec, Canada. September 20, 2002.

Kellenberger C, Miller SF, Babyn PS. Preliminary report of the use of whole-body MRI for staging of Non-Hodgkin lymphoma in pediatric patients. Radiological Society of North America. Chicago, Illinois; December 1-6, 2002.

Keller A, Lum C, Yu E. Nasopharyngeal carcinoma: Benefits of gadolinium enhanced imaging in the assessment of dural, brain, cranial nerve and bone involvement. American Society of Neuroradiology Meeting. Washington DC., U.S.A.. April 2003.

Khalili K. Liver mass characterization with definitely enhanced US: a comparison with contrast enhanced CT/MR scans. Canadian Association of Radiologists Annual Meeting. Beaupre, Quebec, Canada. September 2002.

Kucharczyk W (Colle D). Prion Diseases. International Symposium Neuroradiologicum. Paris, France. August 2002.

Kucharczyk W. Image Guided Minimally Invasive Therapy - the University of Toronto Program. International Interventional MRI Symposium. Leipzig, Germany. September 2002.

Kucharczyk W. MR 2003 - 10th International MRI Symposium: 1) Stroke; 2) Brain Tumors - State-of-the-Art Imaging; 3) Expert Film Panel (Organizer and Moderator). Departments of Radiology at Klinikum Großhadern of Ludwig-Maximilians-Universität (Munich., Germany) and Cornell University (New York, New York). Garmisch, Germany. January 2003.

Kucharczyk W. Brain MRI. International MRI Symposium. Berlin, Germany. March 2003.

Kucharczyk W. MRI Physics: An Animated Version. International Society of Magnetic Resonance Imaging Annual Meeting. Toronto, Canada. May 2003.

MacGregor DL, Ford-Jones EL, MacPhee S, Kelly EN, Blaser SI. Cerebellar hypoplasia with in utero parvovirus infection. Joint Congress of ICNA and AOCNA 2002, Beijing, China September 20-25, 2002.

Merchant N. MRI of pericardial and myocardial diseases. Armed Forces Institute of Pathology, Washington D.C., U.S.A.. September 2002.

Merchant N. The Future of CVMR. SMRT 2002. Montreal, Quebec, Canada. September 2002.

Merchant N. Visiting Professor. MRI in adult congenital heart disease. University of Saskatchewan, Saskatoon, Saskatchewan, Canada. March 13-14, 2003.

Merchant N. Visiting Professor. Current role and concepts of CVMRI. University of Saskatchewan, Saskatoon, Saskatchewan, Canada. March 13-14, 2003.

Merchant N. Visiting Professor. Principles of MRA. University of Saskatchewan, Saskatoon, Saskatchewan, Canada. March 13-14, 2003.

Mikulis D. Imaging cerebral plasticity. Eastern Neuroradiological Society. Charlevoix, Quebec, Canada. 2002.

Mikulis D. New techniques in neuro MRI. Mc Rae Lecture, Montreal Neurological Hospital, Montreal, Quebec, Canada. May 2003.

Mikulis D. Application of functional brain imaging in the assessment of brain plasticity. Annual Conference of the Canadian Pain Society. May 2003.

Mikulis D. Radiology: Seeing is believing. Annual Meeting of the Ontario Trial Lawyers Association. Toronto, Ontario, Canada. May 2003.

Moody, A. MR imaging of thrombosis. British Hyperlipidaemia Association, Birmingham 2002.

Moody, A. Blood curdling images; 10 topics in Rheumatology, London 2002

Moody, A. MR imaging of atherosclerotic disease; British Atherosclerosis Society, Oxford 2002.

Moody, A. MR Imaging of Thrombosis in Cardiovascular Disease; CIRSE Lucerne 2002

Moody, A. The 15th International Somerset MRI course 2002. 1) MR renal angiography; 2) MR imaging in acute stroke; 3) MR imaging of thromboembolic disease.

Navarro O, Daneman A, Chae A. An audit of intussusception management in a tertiary pediatric hospital: a 3.5 year experience. 40th Annual Congress of the European Society of Pediatric Radiology, Genoa, Italy, June 2003.

O'Malley ME. Imaging of liver lesions. Update on Liver Disease and Inflammatory Bowel Disease 2003. San Juan, Puerto Rico. January 31, 2003.

Paul N, Chung TB, Konen E, Roberts H, et al. The radiology of SARS: initial experience in Toronto. ARRS. San Diego, California, U.S.A.. May 4-9, 2003.

Paul N, Chung TB, Minden M, Weisbrod G. Low dose CT in the septic immunocompromised patient. ARRS. San Diego, California, U.S.A.. May 4-9, 2003.

Rajan DK. Visiting Professor. The role of angiography in trauma/Unknown cases. Long Island Jewish Medical Center, New Hyde Park, NY, U.S.A.. May 2003.

Rajan DK. The Express LD Stent – Advantages of balloon expandable stents. Canadian Interventional Radiology Association Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. May 2003.

Rajan DK. Visiting Professor. Management of dysfunctional autogenous fistulas. Mayo Clinic, Rochester, MN, U.S.A.. June 2003.

Raviv-Zilka L, Konen O, Miller SF, Babyn PS. Gibbus deformity in the young child: common and uncommon causes. Radiological Society of North America. Chicago, Illinois; December 1-6, 2002.

Ryan, M, Hamilton P, Sarrazin J. Le complexe de choc hypovolémique chez l'adulte: Trouvailles tomodensitométriques. Journée Françaises de Radiologie. Paris, October 2002.

Salem S. Ultrasound of the thyroid and parathyroid. Small parts - big challenges. The Michener Institute for Applied Health Sciences, Toronto, Ontario, Canada. November 23, 2002.

Salonen D. Visiting Professor. Pre-and post-operative assessment of the knee: Menisci. Neuro and Musculoskeletal Imaging. University of California, San Francisco School of Medicine, Kona, Hawaii, U.S.A.. February 16-21, 2003.

Salonen D. Visiting Professor. Pre-and Post-operative assessment of the knee: Ligaments. Neuro and Musculoskeletal Imaging. University of California, San Francisco School of Medicine. Kona, Hawaii, U.S.A.. February 16-21, 2003.

Salonen D. Visiting Professor. Interventional spinal procedures. Neuro and Musculoskeletal Imaging, University of California, San Francisco School of Medicine. Kona, Hawaii, U.S.A.. February 16-21, 2003.

Salonen D. Visiting Professor. The Approach to staging of osseous and soft tissue tumors. Neuro and Musculoskeletal Imaging. University of California, San Francisco School of Medicine, Kona, Hawaii, U.S.A.. February 16-21, 2003.

Salonen D. Visiting Professor. MRI of the ankle. Neuro and Musculoskeletal Imaging. University of California, San Francisco School of Medicine, Kona, Hawaii, U.S.A.. February 16-21, 2003.

Salonen D. Visiting Professor. Intra-articular hyaluronate injection (Viscosupplementation)-technique and indications. Society of Skeletal Radiology. San Diego, California, U.S.A.. March 2-5, 2003.

Sarrazin J. Acute conditions of the thoraco-abdominal aorta. Invited speaker. Canadian Association of Radiologists, September 2002.

terBrugge K. Embolisation of small AVM-prediction of morphological outcome; Embolisation of large AVM - long term outcome; Embolisation of large size AVM-long term outcome. XV11th Symposium Neuroradiologicum. Paris, France. August 18-24, 2002.

terBrugge K. Guest Speaker & Moderator. Aneurysms, brain and spinal AVMs. 4th Annual Neurointerventional Peer Review. Pretoria, South Africa. September 14-15, 2002.

terBrugge K. Management of spinal vascular malformations; Management of intracranial venous vascular disease. National Interventional Neuro Symposium. Johannesburg, South Africa. September 16, 2002.

terBrugge K. Imaging and management of B-AVM in adults and children; Imaging and management of D-AVM in adults and children; Imaging and management of arterial and venous cerebral ischemia. National Seminar on Interventional Neuroradiology. Brno Ceska Republika. September 20, 2002.

terBrugge K. Aneurysm pathophysiology. 4th Annual Canadian Interventional Neuroradiology Symposium. Montreal, Quebec, Canada. September 27-28, 2002.

terBrugge K. Angioarchitecture of cerebral AVMs. LINC Course 2002, Endovascular Neuroradiology Workshop and Live Cases. Houston, Texas, USA.. October 13-16, 2002.

terBrugge K. Imaging strategies; Ante-natal neuroradiology and vascular lesions; Pial AVMs management; Aneurysms in children; Imaging strategies. 2001-2002 International Master Degree in Neurovascular Diseases. Chiangmai, Thailand. November 3-7, 2002.

terBrugge K. Imaging and endovascular management of acute arterial ischemia; Imaging and endovascular management of venous cerebral ischemia; Clinical and angioarchitecture relationship as guideline for treatment of brain AVM. The Fifth Meeting of Asian-Australian Federation of Interventional and Therapeutic Neuroradiology. Hong Kong, China. November 9-11, 2002.

terBrugge K. Spinal cord ischemia clinical aspects. ABC/WIN 2003. Val d'Isère, France. January 12-17, 2003.

terBrugge K. Spinal vascular procedures-indications and techniques. The 6th Joint Meeting of the AANS/CNS Section on Cerebrovascular Surgery and the American Society of Interventional and Therapeutic Neuroradiology. Phoenix, Arizona, U.S.A.. February 15-19, 2003.

terBrugge K. Clinical-angioarchitectural correlations in cerebral AVM; Venous high-flow angiopathy in brain AVMs; Correlative clinical-angioarchitectural classification and natural history of intracranial dural AVFs. 11th Zurich Course on Interventional Neuroradiology. Zurich Switzerland. March 5-8, 2003.

terBrugge K. Hereditary hemorrhagic telangiectasia affecting the central nervous system. HHT 5th Scientific Conference. Bonaire Dutch Antilles. April 24-28, 2003.

terBrugge K. Cerebral venous occlusive disease. ASNR 2003. Washington DC, USA.. April 27-28, 2003.

terBrugge K. Endovascular role in venous disease. 38th Meeting of the Canadian Congress of Neurological Sciences. Quebec City, QC, Canada. June 17-21, 2003.

terBrugge K. Interventional neuroradiology/endovascular Activity in Canada. 38th Meeting of the Canadian Congress of Neurological Sciences. Quebec City, QC, Canada. June 17-21, 2003.

White LM. Postoperative imaging of the shoulder and knee: MR imaging of the postoperative meniscus. Categorical Course Presentation. 2002 Scientific Assembly and Annual Meeting of the Radiologic Society of North America 2002. Chicago, Illinois, U.S.A.. December 4, 2002.

White LM. MR imaging of articular cartilage and cartilage repair procedures: State of the art: MR imaging assessment of osteochondral transplantation. Categorical Course Presentation. 2002 Scientific Assembly and Annual Meeting of the Radiologic Society of North America 2002. Chicago, Illinois, U.S.A.. December 5, 2002.

White LM. MR imaging assessment of the knee: menisci. 46th Annual Diagnostic Radiology Postgraduate Course. University of California, San Francisco, U.S.A.. March 17-21, 2003.

White LM. MR imaging assessment of the knee: Ligaments and tendons. 46th Annual Diagnostic Radiology Postgraduate Course, University of California, San Francisco, U.S.A.. March 17-21, 2003.

White LM. MR imaging assessment of the postoperative menisci and ligaments of the knee. 46th Annual Diagnostic Radiology Postgraduate Course, University of California, San Francisco, U.S.A.. March 17-21, 2003.

Willinsky R. Cerebral AVMs and HHT. 10th Annual HHT Conference. Baltimore, MD, U.S.A.. October 11, 2002.

Wilson S. Ultrasound contrast agents: their use in liver mass characterization and detection. The Eighteenth Annual Lecture, sponsored by Phillips Medical Systems. The 21st Leeds Gastroenterology Course for Radiologists. St. James's University Hospital, Leeds, UK. July 1-5, 2002.

Wilson S. Sonographic assessment of the rectum and anal canal. The 21st Leeds Gastroenterology Course for Radiologists. St. James's University Hospital, Leeds, UK. July 1-5, 2002.

Wilson S. Inflammatory bowel disease: sonographic assessment. The 21st Leeds Gastroenterology Course for Radiologists. St. James's University Hospital, Leeds, UK. July 1-5, 2002.

Wilson S. Right lower quadrant pain, not always acute appendicitis. The 21st Leeds Gastroenterology Course for Radiologists. St. James's University Hospital, Leeds, UK. July 1-5, 2002.

Wilson S. Tissue harmonic imaging. The 21st Leeds Gastroenterology Course for Radiologists. St. James's University Hospital, Leeds, UK. July 1-5, 2002.

Wilson S. Visiting Professor. Microbubble contrast agents for ultrasound: their role in the imaging of liver and renal masses. The 10th annual G. Leland Melson visiting professorship and lecture. Washington University in St. Louis, School of Medicine, St. Louis, Mississippi, U.S.A.. September 9, 2002.

Wilson S. Microbubble contrast agents: their role in characterization and detection of focal liver lesions. GERMAD Meeting. Toronto, Ontario, Canada. September 21-24, 2002.

Wilson S. Right lower quadrant pain: not always acute appendicitis. The Royal Australian and New Zealand College of Radiologists 53rd Annual Scientific Meeting. Adelaide, Australia. October 3-6, 2002.

Wilson S. Sonomorphology of adnexal masses: a practical approach to differentiate benign from malignant disease. The Royal Australian and New Zealand College of Radiologists 53rd Annual Scientific Meeting. Adelaide, Australia. October 3-6, 2002.

Wilson S. The rectum and anal canal: sonographic assessment. The Royal Australian and New Zealand College of Radiologists 53rd Annual Scientific Meeting. Adelaide, Australia. October 3-6, 2002.

Wilson S. Gynaecological imaging: good applications for the addition of Doppler. The Royal Australian and New Zealand College of Radiologists 53rd Annual Scientific Meeting. Adelaide, Australia. October 3-6, 2002.

Wilson S. Contrast agents for ultrasound: improved liver mass characterization and detection. The Royal Australian and New Zealand College of Radiologists 53rd Annual Scientific Meeting. Adelaide, Australia. October 3-6, 2002.

Wilson S. Microbubble contrast agents for sonography: liver mass characterization. Advances in Sonography, 12th Annual Meeting of Society of Radiologists in Ultrasound. San Francisco, California, U.S.A.. October 25-27, 2002.

Wilson S. Biliary sonography: Jaundice. 15th Annual Radiology Symposium – Ultrasound Imaging. Winnipeg, Manitoba, Canada. November 16, 2002.

Wilson S. Ultrasound contrast agents: their use in liver mass characterization and detection. 15th Annual Radiology Symposium – Ultrasound Imaging. Winnipeg, Manitoba, Canada. November 16, 2002.

Wilson S. The acute abdomen of hollow visceral origin: sonographic assessment. 15th Annual Radiology Symposium – Ultrasound Imaging. Winnipeg, Manitoba, Canada. November 16, 2002.

Wilson S. Burn PN, Brannigan M, Khalili K. Algorithms for the diagnosis of focal liver masses on definitely enhanced pulse inversion sonography. RSNA 88th Scientific Assembly and Annual Meeting. Chicago, Illinois, U.S.A.. December 1-6, 2002.

Wilson S. Refresher Course. Right lower quadrant pain: not always acute appendicitis. RSNA 88th Scientific Assembly and Annual Meeting. Chicago, Illinois, U.S.A.. December 1-6, 2002.

Wilson S. Categorical course in ultrasound: thickened gut on sonography, what does that mean? RSNA 88th Scientific Assembly and Annual Meeting. Chicago, Illinois, U.S.A.. December 1-6, 2002.

Wilson S. The acute abdominal pain I. Panamanian Radiological Society. Panama. January 17-18, 2003.

Wilson S. The acute abdominal pain II. Panamanian Radiological Society. Panama. January 17-18, 2003.

Wilson S. Inflammatory bowel disease: sonographic assessment. Panamanian Radiological Society. Panama. January 17-18, 2003.

Wilson S. The anexal mass: is it malignant or benign. Panamanian Radiological Society. Panama. January 17-18, 2003.

Wilson S. Good uses for doppler in Gynaecology AVM and PTN. Panamanian Radiological Society. Panama. January 17-18, 2003.

Wilson S. Right and left lower quadrant pain – sonographic assessment. University of Alberta Hospital, Edmonton, Alberta, Canada. February 27-28, 2003.

Wilson S. Microbubble contrast agents for imaging of focal liver masses. University of Alberta Hospital, Edmonton, Alberta, Canada. February 27-28, 2003.

Wilson S. Sonography of AIDS. University of Alberta Hospital, Edmonton, Alberta, Canada. February 27-28, 2003.

Wilson S. Right and left lower quadrant pain – sonographic assessment. Buffalo Radiological Society. March 3, 2003.

Wilson S. Microbubble contrast agents for imaging of focal liver masses. Buffalo Radiological Society. March 3, 2003.

Wilson S. Thick gut on sonography: what does that mean? 24th Annual Sonic Symposium. Biloxi, Mississippi, U.S.A.. April 26, 2003.

Wilson S. The peritoneum: can ultrasound provide the answers? 24th Annual Sonic Symposium. Biloxi, Mississippi, U.S.A.. April 26, 2003.

Wilson S. Microbubble contrast agents for Ultrasound: their impact on Oncologic Imaging. Categorical Course in Oncologic Imaging. American Roentgen Ray Society 103rd Annual Meeting. San Diego, California, U.S.A.. May 4-9, 2003.

Wilson S. Meet-the-Professor: Microbubble contrast agents: state of the art 2003. Plenary: Ray Grammiak lectures in abdominal ultrasound – contrast agents: algorithms for diagnosis of liver masses using microbubble contrast agents and pulse inversion imaging. Symposium: acute abdominal and scrotal problems – acute appendicitis: the role of sonography in 2003. 10th Congress of the World Federation for Ultrasound in Medicine and Biology. Montreal, Quebec, Canada. June 2003.

Xiang, J., Chuang, N., Otsubo, H., Chitoku, S., Holowka, S., Sharma, R., Hunjan, A., Snead III, O. C., Chuang, S. Three-dimensional Integration of Brain Anatomy and Epileptogenic Zones using Magnetic Source Imaging. In: Nowak, H, et al (Ed.), Proceedings of the 13th International Conference on Biomagnetism. VDE VERLAG GMBH, Berlin. 2002, p272-274.

SCIENTIFIC PRESENTATIONS: PEER-REVIEWED PAPERS, POSTERS AND EXHIBITS

Alfuhaid TR, Khalili K, Kirpalani A, Haider MA, Wilson SR, Daneman A. Neoplasms of the inferior vena cava: an imaging review (Poster) 88th Annual Meeting of the Radiological Society of North America Chicago, Illinois, December 1-6, 2002.

Alfuhaid TR, Kachura JR, Sniderman KW. Posters. Endovascular treatment of vascular abnormalities following liver transplantation. Society of Interventional Radiology, 28th Annual Scientific Meeting. Salt Lake City, Utah, U.S.A.. March 27-April 1, 2003.

Andersson T, Willinsky R, terBrugge K. Spinal epidural arteriovenous malformations (SEAVMS): The Toronto experience. XVIIth Symposium Neuroradiologicum. Paris, France. August 20, 2002.

Armstrong D. Retinal findings in children with intracranial hemorrhage. Presented at the International Society of the Prevention of Child Abuse and Neglect (ISPCAN), Denver, Colorado, July 8, 2002.

Armstrong D. Correlation between retinal abnormalities and intracranial abnormalities in the Shaken Baby Syndrome. Presented at the International Society for the Prevention of Child Abuse and Neglect (ISPCAN), Denver, Colorado, July 8, 2002.

Armstrong D. Fourth National Conference on Shaken Baby Syndrome. Sept. 12-15, 2002, Salt Lake City, Utah.

Atri M, Benjaminov O, O' Malley M. CT evaluation of focal pancreatitis vs. pancreatic cancer. A case control study. ARRS 2003.

Benjaminov O, Atri M, O'Malley M. Focal pancreatitis vs. pancreatic adenocarcinoma: can they be differentiated by CT? Annual Meeting of the American Roentgen Ray Society. San Diego, California, U.S.A.. May 2003.

Babyn P. Review Practical Issues in Paediatric Radiology. Children's Hospital of Western Ontario. Paediatric Refresher Day, November 20, 2002

Babyn P. Bone Marrow. RSNA Refresher Course. Chicago, December 3, 2002

Blaser S. Pediatric metabolic disorders. University of Utah, Salt Lake City, December 12, 2002.

Blaser S. Posterior fossa malformations. University of Utah, Salt Lake City, December 13, 2002.

Blaser S. Pediatric soft tissue masses of the neck. Eighth International MRI course, Dhahran, Saudi Arabia, October 21-24, 2002.

Blaser S. Craniofacial malformations and craniosynostoses. Eighth International MRI course, Dhahran, Saudi Arabia, October 21-24, 2002.

Blaser S. The child with metabolic disorders. Eighth International MRI course, Dhahran, Saudi Arabia, October 21-24, 2002.

Blaser S. Posterior fossa malformations. Eighth International MRI course, Dhahran, Saudi Arabia, October 21-24, 2002.

Blaser S. Neonatal and in-utero brain infections. Eighth International MRI course, Dhahran, Saudi Arabia, October 21-24, 2002.

Blaser S. Craniofacial malformations. Eastern Society of Neuroradiology Conference and Annual meeting. Malbaie, Quebec, August 23-25, 2002.

Bordbar H, Khalili K, Grant DR, Wilson S. Sonographic findings in living donor transplantation as compared to cadaveric liver transplantation in the acute post-operative setting. Society of Gastrointestinal Radiology. Cancun, Mexico. February 2003.

Brannigan M, Burns PN, Wilson SR. Scientific Exhibit. Blood flow patterns in focal liver lesions: Concordance of microbubble contrast enhanced pulse inversion sonography with CT and MRI. . RSNA 88th Scientific Assembly and Annual Meeting. Chicago, Illinois, U.S.A.. December 1-6, 2002.

Brown MP, Kachura JR, Sniderman KW, Sternbach Y, Lindsay TF. Posters. Palmaz stenting for the treatment of type 1 endoleaks after endovascular abdominal aortic aneurysm repair. Society of Interventional Radiology, 28th Annual Scientific Meeting. Salt Lake City, Utah, U.S.A.. March 27- April 1, 2003.

Burn PR, Haider MA, Alfuhaid T, Brown MP, Roberts TPL. Scientific Poster Exhibit. Proton magnetic resonance spectroscopy as a potential tool for differentiating abdominal fluid collections. UK Radiological Congress. Birmingham, United Kingdom. June 15-17, 2003.

Bret PM. Getting from here to there: "Change Management" in PACS. Annual Meeting of the Radiological Society of North America. Chicago, Illinois, U.S.A.. December 1-6, 2002.

Bret PM. Moderate-GI Bile Ducts:Conventional Radiology,CT,MR,US Oral Session. Annual Meeting of the Radiological Society of North America. Chicago, Illinois, U.S.A.. December 1-6, 2002.

Bret PM. Interaction entre le radiologue et le clinician. Société Suisse de Radiologie. Lucerne, Switzerland. June 26-28, 2003.

Chan R, Faughan ME, Hyland RH. Imaging of Lesions Mimicking Pulmonary Arteriovenous Malformations. Virtual Poster Presentation. 28th Annual Meeting of the Society of Interventional Radiology, March 27-April 1, 2003. Salt Lake City, Utah.

Chait PG. New Directions in IGT – 2002 Trending Forward. Ontario Association of Radiology Managers Conference, Alliston, Ontario, September 2002.

Chait PG. Central Venous Catheter Education Day, Credit Valley Hospital, Mississauga, Ontario, September 2002.

Chait PG. (1) Future Directions in Pediatric Interventions, (2) Gastrostomies and Cecostomies, (3) Musculoskeletal Interventions, (4) Renal Interventions, (5) Esophageal and Tracheal Procedures, (6) Tracheal and Bronchial Stents. The Queen Elizabeth Hospital and Health Service, AOSPR/ASPI 2002 Conference, Adelaide, South Australia, October 2002.

Chait PG. Interventional Radiology for Diagnosis in Pediatric Gastroenterology. IV Curso De Gastroenterologia Pediatrica, Nicolas San Juan, Mexico, November 2002.

Chait PG. Techniques of Freehand Invasive Sonography (“Hands-on” workshop). RSNA 88th Scientific Assembly and Annual Meeting, Chicago, Illinois, December 2002.

Chait PG. Venous Access (“Hands-on” workshop). RSNA 88th Scientific Assembly and Annual Meeting, Chicago, Illinois, December 2002.

Chait PG. Minicourse: Practical Answers for Complex Imaging Questions – Hands-on/How to: Musculoskeletal Interventional Sonographic Procedures (“Hands-on” workshop) RSNA 88th Scientific Assembly and Annual Meeting, Chicago, Illinois, December 2002.

Chait PG. Techniques of Invasive Sonography (“Hands-on” workshop). RSNA 88th Scientific Assembly and Annual Meeting, Chicago, Illinois, December 2002.

Chait PG. Use of Esophageal Removable Stents in Pediatrics. RSNA 88th Scientific Assembly and Annual Meeting, Chicago, Illinois, December 2002.

Chuang S. American College of Radiology, Annual Meeting, Sept. 28th – Oct. 2nd, 2002; Miami Florida. Received Fellowship in the ACR (FACR) – 2002.

Common AA. Women’s Pelvic Health Update. Technical Aspects of UFE. The Old Mill, Toronto. September 20, 2002.

deRuiter WK, Toi A, Wong PY, Hay J, Faught BE. Determining the utility of the digital rectal examination, total prostate specific antigen ratio algorithm in diagnosing prostate cancer. XVI IEA World Congress of Epidemiology. Montreal, Quebec, Canada. August 18-22, 2002.

deRuiter WK, Toi A, Wong PY, Hay J, Faught BE. Determining the utility of the free-to-total prostate specific antigen ratio and prostate specific density test in diagnosing prostate cancer. 16th Annual Central Region Student Canadian Society for Epidemiology and Biostatistics Conference. Montreal, Quebec, Canada. August 2002.

deRuiter WK, Toi A, Wong PY, Hay J, Faught BE. The efficacy of the digital rectal examination, total prostate specific antigen, and prostate specific antigen ratio algorithm in diagnosing prostate cancer. Am College of Epidemiology Meeting. Albuquerque, NM. September 22-24, 2002.

Desal H, Krolczyk G, Crawley A, Fisher JA, Wallace C, terBrugge K, Mikulis DJ. FMRI assessment of CO2 cerebral vascular reactivity around brain arteriovenous malformation: Preliminary results. XVIIth Symposium Neuroradiologicum. Paris, France. August 18-24, 2002.

Faingold R, Daneman A, Manson D, Tomlinson G, Mohanta A, Hellmann J, Kim JH. Bowel viability assessment by colour doppler sonography in necrotizing enterocolitis. (Poster) 88th Annual Meeting of the Radiological Society of North America, Chicago, Illinois, December 1-6, 2002.

Fong KW, Causer P, Lytwyn A, Atri M, Kung R. Poster Presentation. Transvaginal ultrasonography and hysterosonography in postmenopausal women with breast cancer receiving tamoxifen: correlation with hysteroscopy and pathology. 12th World Congress on Ultrasound in Obstetrics & Gynecology. New York, New York, U.S.A.. November 3-7, 2002.

Fong KW, Toi A, Salem S, Johnson J, Chitayat D, Hornberger L. Education Exhibit. Sonographic detection of embryonic and fetal structural abnormalities during the first trimester. RSNA 88th Scientific Assembly and Annual Meeting. Chicago, Illinois, U.S.A.. December 1-6, 2002.

Georgalas C, Thomas K, Abramovich S, Owens C, Roberts G, Lack G. Evaluation of the efficacy of medical treatment for adenoidal hypertrophy in allergic children using MRI imaging: a pilot study. (poster) International Society of Pediatric Otolaryngology Congress, Oxford, UK 2002

Ghai S, Rajan D, Asch MR, Muradali D, Simons ME. Efficacy of embolization in traumatic uterine vascular malformation. SIR Annual Meeting. Salt Lake City, Utah, U.S.A.. March 2003.

Ghai S, Kulkarni S, Bukhanov K, Muradali D. Nonenhancing breast carcinomas on MRI: Ultrasound and pathological correlation. American Roentgen Ray Society, 103rd Annual Meeting. San Diego, California, U.S.A.. May 2003.

Greyson ND. Nuclear Medicine and Thyroid Cancer to the “Thyrvors”. Canadian Thyroid Cancer Support Group. May 31, 2003.

Greyson ND. Introduction to Nuclear Medicine. U of T Medical Physics Students. Sunnybrook and Women’s College Health Science Centre. Toronto, March 3, 2003.

Haider MA, Milosevic M, Fyles A, Henderson E, Yeung I, Lee TY. Correlations between CT perfusion and in vivo measures of interstitial fluid pressure and oxygenation in cervix cancer: Working towards an understanding of human tumor physiology and predicting patient outcome.

Annual Meeting of the Radiological Society of North America. Chicago, Illinois, U.S.A.. December 2002.

Hanbidge A. Imaging the pancreas: The role of ultrasound. Annual Meeting of Ontario Society of Diagnostic Medical Sonographers. Niagara-on-the-Lake, Ontario, Canada. November 2002.

Hanbidge A. Refresher Course. Sonographic evaluation: The acute abdomen of hepato-biliary origin. Annual Meeting of the Radiological Society of North America. Chicago, Illinois, U.S.A.. December 2002.

Hayeems EB, Kachura JR, Jones JD. Poster. Endovascular treatment of visceral artery aneurysms and pseudoaneurysms. Society of Interventional Radiology, 28th Annual Scientific Meeting. Salt Lake City, Utah, U.S.A.. March 27-April 1, 2003.

Ho CS, Jones JJ. Scientific Exhibit. Catheter fixation devices in interventional radiology. Chicago, Illinois, U.S.A.. November 2002.

Huang H, Merchant N, Mclaughlin P, Wright G. Exhibit. Real-time MRI of atrial septal defects before trans-catheter closure. Proceedings of the 88th Scientific Assembly and Annual Meeting, Radiological Society of North America. Chicago, Illinois, U.S.A.. November 2002.

Jain H, Porter P, Wallace MC, Willinsky RA, terBrugge K, Montanera W, Tymianski M. Single center analysis of outcomes in North American patients enrolled in ISAT. The 6th Joint Meeting of the AANS/CNS Section on Cerebrovascular Surgery and the American Society of Interventional and Therapeutic Neuroradiology. Phoenix, Arizona, U.S.A.. February 15-19, 2003.

Jain H, Tymianski M, Willinsky R, Montanera W, terBrugge K, Wallace MC. Multimodality management of spinal perimedullary fistulas. 38th Meeting of the Canadian Congress of Neurological Sciences. Quebec City, Quebec, Canada. June 17-21, 2003.

Johnson JM, Sroka H, Toi A, Viero S, Hoffman B, Chitayat D. Poster. Prenatal diagnosis of Cornelia de Lange Syndrome. ISUOG. New York, U.S.A.. November 2-7, 2002.

Jong RA, Causer P, Warner E, Plewes DB et al. MRI Breast Screening in high risk women. Annual Scientific Meeting of the Canadian Association of Radiologists, Quebec September 19-22, 2002.

Jong RA, Yaffe MJ, Skarphiotakis M, Danjoux N. Contrast digital mammography. Annual Imaging Symposium of the Imaging Network Ontario. Toronto, Ontario September 23-25, 2002.

Jong RA, Yaffe MJ, Skarphiotakis M, Danjoux N. Contrast mammography. Radiological Society of North America Refresher Course on Digital Radiography Chicago, Illinois December 5, 2002.

Jong RA. Advanced Clinical applications of digital mammography. Society for Computer Applications in Radiology, Boston, Mass. June 7-10, 2003.

Khalili K, Burns PN, Wilson SR. Liver mass characterization with definity enhanced US: A comparison with contrast enhanced CT/MR scans. Canadian Association of Radiologists Annual Meeting. Beaufort, Quebec, Canada. September 21, 2002.

Khalili K, Wilson SR, Grant D. Sonographic findings in living donor transplantation as compared to cadaveric liver transplantation in the acute post-operative setting. Abdominal Radiology Course. Cancun, Mexico. February 16-21, 2003.

Kulkarni S, Muradali D, Bukhanov K, Dhamnaskar K, Wilson C, Ibach D. Poster. Papillary lesions of the breast: Appearances on MRI. Radiologic Society of North America Meeting. Chicago, Illinois, U.S.A.. November 2002.

Lee SK, Findlay I, Montanera W, Willinsky R, terBrugge K. 3D X-ray Angiography and MRI fusion: preliminary report. XVIIth Symposium Neuroradiologicum. Paris, France. August 20, 2002.

Lem SL, Konen E, Provost YL, Merchant N. Extracranial vascular malformations: A review of MRI techniques and findings. Proceedings of the 88th Scientific Assembly and Annual Meeting, RSNA. Education Exhibit 0450VI-e, 225(P):704, November 2002.

Littrell LA, Wenger DE, Wold LE, White LM, Sundaram M. Imaging features of dedifferentiated chondrosarcomas with conventional radiography, CT and MRI: A retrospective review of 132 De Novo cases. 2002 Scientific Assembly and Annual Meeting of the Radiologic Society of North America. Chicago, Illinois, U.S.A.. December 2002. (Abstract)

Makite O, Doria A, Kooh SW, Cole WG, Daneman A, Sochett E. Early treatment improves growth in x-linked hypophosphatemic rickets. (Poster) 88th Annual Meeting of the Radiological Society of North America. Chicago, Illinois, December 1-6, 2002.

Manson D. Emergency Radiographs That You Love to Hate. Paediatric Update 2002, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, April 25, 2002. of Toronto, September 29th – October 3rd, 2002.

Martel AR, Morgan PS, Daniels LR, Delay GS, Moody AR, Measuring clot volumes using watershed segmentation algorithms (poster), ISMRM 2003.

Matouk C, vanDijk M, terBruggeK, Wallace C, Willinsky R. Clinical and radiographic features of intracranial DAVF: An under-recognized cause of progressive cognitive deficits. AANS/CNS & ASITN Meeting. Phoenix, Arizona, U.S.A.. February 2003.

McGregor C, Atri M, Wilkinson L, Koles S. Evaluation of acute right lower quadrant pain. Comparison of unenhanced and enhanced CT. ARRS 2003.

Molinari M, Ho CS, Taylor BR, Langer B, Gallinger S, Vollmer C, Greig PD. Scientific Exhibit. Multidisciplinary approach to recurrent pyogenic cholangitis in the west. AHPBA. Miami, Florida, U.S.A.. 2003.

Morgan PS, Moody AR, Martel AR; T1 weighted 3D perfusion brain imaging, (poster) ISMRM 2003.

Muradali D, Kulkarni S, Villet C, Kalman P, Burns P, Wilson S. Angiogenesis mapping with pulse inversion: A new and sensitive method to image vascularity in breast carcinomas. Radiological Society of North America Meeting. Chicago, Illinois, U.S.A.. November 2002.

Murphy RE, Moody AR, Morgan PS, Martel AR. Clinical correlates of MRDTI-defined complicated plaque (abstract) ISMRM Toronto 2003.

Noseworthy M. Principles of fMRI: Design, Performance, and Analysis. St. Joseph's Hospital, Department of Radiology, Hamilton Ontario, Nov. 28/2002

Patlas M, Khalili K, Dill-Mackay M, Wilson S. Poster. Imaging spectrum of abdominal extraosseous myeloma. Society of Gastrointestinal Radiology. Cancun, Mexico. February 2003.

Paul N, Chung T, Minden M, Weisbrod G. Scientific Exhibit. Low dose CT of the thorax in the septic immunocompromised patient. UKRC 2003. Birmingham, United Kingdom. June 16, 2003.

Paul N, Chung T, Roberts H, et al. Scientific Exhibit. The prognostic significance of the initial radiographic pattern. UKRC 2003. Birmingham, United Kingdom. June 16, 2003.

Piron C, Causer P, Jong R, Luginbuhl C, Walcarius R, Walters S, Plewes DB. Co-registration of MRI and US breast images: Preliminary in vivo evaluation of accuracy. Abstract, November 2003 (co-author), RSNA meeting, Chicago, Illinois.

Piron C, Causer P, Jong R, Walcarius R, Luginbuhl C, Walters S, Plewes DB. System for Co-registration of MR/US breast images: Preliminary in vivo evaluation of accuracy. Abstract, July 2003 (co-author), ISMRM, Toronto, Ontario.

Plaskos NP, Asch M, Law CHL, Kachura JR, Ho CS, Simons M, et al. High rate of perforation complicating large diameter endoluminal stent placement for colorectal obstruction. Society of Interventional Radiology, 28th Annual Scientific Meeting. Salt Lake City, Utah, U.S.A.. March 28, 2003.

Plaskos NP, Kachura JR. Survey of gynecologists and interventional radiologists evaluating opinions of uterine fibroid embolization. Society of Interventional Radiology, 28th Annual Scientific Meeting. Salt Lake City, Utah, U.S.A.. March 31, 2003.

Prasad V, Chan RP, Faughan ME. Coil Embolotherapy of Pulmonary Arteriovenous Malformations: Efficacy of Platinum vs Stainless Steel. Presented at the Society of

Interventional Radiology. 28th Annual Scientific Meeting, March 27-April 1, 2003. Salt Lake City, Utah.

Proctor ML, Traubici J, Langer JC, Gibbs DL, Ein SH, Daneman A, Kim PCW. Correlation between radiographic transition zone and level of aganglionosis in hirschsprung's disease: implications for surgical approach. (Poster) 49th Annual Conference of the British Association of Paediatric Surgeons, Cambridge, England, U.K., July 16-19, 2002.

Retnakaran RR, Faughan ME, Pugash RA, Chan R, O'Connor P, Chow CM. Pulmonary Arteriovenous Malformation: A Rare Cause of Stroke in the Young Adult. Ted Giles Clinical Vignette Competition. Canadian Society of Internal Medicine Annual Scientific Meeting. October 17-20, 2002, Halifax, Nova Scotia.

Revel-Vilk S, Sharathkumar A, Massicotte P, Marzinotto V, Daneman A, Dix D, Chan A. Natural history of arterial and venous thrombosis in children treated with low molecular weight heparin: a longitudinal study by doppler ultrasound. (Poster) 44th Annual Meeting and Exposition of the American Society of Hematology, Philadelphia, Pennsylvania, December 6-10, 2002.

Roberts H. Advances in CT imaging of stroke; MRI of stroke; Imaging angiogenesis; Presentation and discussion of unknown cases. Neuroradiology MR Update. Aspen, Colorado, U.S.A.. July 2002.

Ryan MF, Hamilton PA, Sarrazin J, Chu P, Benjaminov O. Abdominal computed tomography findings of hypovolemic shock complex in adults. RSNA, Chicago, December, 2002.

Ryan S, Power N, Sarrazin J, Atri M, Hamilton P. CT of small bowel obstructions in cancer patients. American Society of Gastroenterology, Mexico, February 2003.

Shroff, MM Interesting Pediatric Neuroradiology Cases for Radiology Residents – Bombay Hospital & Institute of Medical Sciences, Mumbai, 18th July 2002.

Shroff, MM Imaging of Epilepsy in Children - Hinduja Hospital & Medical Research Center, 24th July 2002.

Shroff, MM Newer Advances In Neuroimaging: Holy Family Hospital, Mumbai, 25th July 2002.

Shroff, MM Sinovenous Thrombosis in Children – Eastern Society of Neuroradiology, Quebec, September 2002.

Shroff, MM CAQ for Pediatric Neuroradiology – Eastern Society of Neuroradiology, Quebec, September 2002.

Shroff, MM Imaging of CNS infections – 30th October 2002, McMaster University, Hamilton.

Shroff, MM Radiology Resident Teaching rounds – 30th October 2002, McMaster University,

Hamilton.

Shroff M M, Farb R, Blaser S, Andrew Derbyshire J, Wright G, Macgowan, C – Real-Time Auto-Triggered Elliptic Centric Ordered 3D Gadolinium Enhanced MR Angiography of the Brain in Children: presented as a scientific paper at the Radiological Society of North America, Chicago, December 2002.

Shroff, MM Pediatric Neuroimaging” – lecture for Radiology Residents and Neuroradiologists at “Ruby Hall Clinic & Medical Research Center” at Pune, India – 24th December 2002.

Shroff, MM “Childhood Stroke & Neonatal HIE” – Neurology Grand Rounds at Hospital for Sick Children (with teleconferencing for Neurology staff at Bloor View Health Center). 5th February 2003.

Simons ME. Information hands-on-cases: Suturing/closure devices. Canadian Interventional Radiology Association 2nd Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. May 29-31, 2003.

Simons ME. Embolotherapy: Panel. Canadian Interventional Radiology Association 2nd Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. May 29-31, 2003.

Simons ME. Miscellaneous cases: Woggle. Canadian Interventional Radiology Association 2nd Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. May 29-31, 2003.

Simons ME. Miscellaneous cases & registrant case presentations: Panel. Canadian Interventional Radiology Association 2nd Annual Meeting. Niagara-on-the-Lake, Ontario, Canada. May 29-31, 2003.

Spears J, terBrugge K, Moosavian M, Gentili F, Porter P, Tymianski M, Willinsky RA, Wallace MC. Development of a prediction model for neurological outcome in the surgical treatment of cerebral AVMs. The 6th Joint Meeting of the AANS/CNS Section on Cerebrovascular Surgery and the American Society of Interventional and Therapeutic Neuroradiology. Phoenix, Arizona, U.S.A.. February 15-19, 2003.

Temple M , Richmond L, Geary D, Stevens D, Klasninovska B, Chait, Connolly B. Ultrasound Guided Interventions in PG, John P, Amaral J, Connolly B. Renal angiography (RA) & Percutaneous transluminal angioplasty (PTA) in hypertensive children. ESPR, Genoa, Italy. June 2003.

Toi A, Bedford MH, Blaser S, Jay V, Meschino W, Chitayat D. Lesions of the fetal back, simple in appearance but clinically significant. Canadian Association of Radiologists Annual Meeting. Beaupré, Quebec, Canada. September 19-22, 2002.

Toi A, Sutherland J, Gallie B, Gardiner J, Sermer M. Poster. Prenatal ultrasound screening for retinoblastoma in at risk fetuses: potential for preserving vision. ISUOG. New York, U.S.A.. November 2-7, 2002.

Wang X, Foos DH, Doran J, O'Dea DJ, Lax M, White LM. Automatic and accurate method for full-spine and full-leg imaging with computed radiography. 2002 Scientific Assembly and Annual Meeting of the Radiologic Society of North America. Chicago, Illinois, U.S.A.. December 2002. (Abstract)

Warner E., Plewes D, Hill K, Yaffe M, Causer P, Narod S. Comparison of breast magnetic resonance imaging, mammography, and ultrasound for screening of women with BRCA1 and BRCA2 mutations. Breast Cancer Linkage Consortium. Madrid, Spain, Abstract, June 2003. (co-author)

Weiser WJ. Visiting Professorship. Technion University, Haifa, Israel. May 2003.

Weiser WJ. Chest Lecture. University of Toronto Physiotherapy Students. November 2002.

Weiser WJ. Chest Lecture. University of Toronto Physiotherapy Students. January 2003.

Willinsky RA, Taylor S, terBrugge K, Farb R, Tomlinson G. Neurological complications of cerebral angiography: A prospective analysis of 2899 procedures. The 6th Joint Meeting of the AANS/CNS Section on Cerebrovascular Surgery and the American Society of Interventional and Therapeutic Neuroradiology. Phoenix, Arizona, U.S.A. February 15-19, 2003.

Wilson SR. Liver mass imaging with definity: concordance with contrast enhanced CT/MR scan and diagnostic algorithms in 160 patients. SRU Fellows Meeting. San Francisco, Los Angeles, U.S.A.. October 24, 2002.

Wilson SR, Burn PN, Brannigan M, Khalili K. Algorithms for the diagnosis of focal liver masses on definity enhanced pulse inversion sonography. RSNA 88th Scientific Assembly and Annual Meeting. Chicago, Illinois, U.S.A. December 1-6, 2002.

Yahya R, Armstrong D, terBrugge KG, Drake J. Endovascular treatment of cerebral aneurysms in children. 38th Meeting of the Canadian Congress of Neurological Sciences. Quebec City, QC, Canada. June 17-21, 2003.

AWARDS AND SPECIAL RECOGNITION

Buckler P, Hanbidge A, O'Malley M, Wilson S. Scientific Exhibit. Imaging of acute abdominal pain of hepatobiliary origin: a refresher. Annual Meeting of the American Roentgen Ray Society, San Diego, California, U.S.A.. May 2003. Certificate of Merit Award.

Chawla T, Taylor MB, Greenberg GR, Wilson SR. Concordance of ultrasound and CT in assessment of patients with Crohn Disease. Society of Gastrointestinal Radiologists Meeting. Cancun, Mexico. February 2003. Dr. Chawla recipient of Alexander Margulis Award for first time presenter at the SGR.

Dhamanaskar K, Muradali D, Kulkarni S, Bukhanov K, Pantazi S, Wilson C. MRI directed ultrasound: a cost-effective method for diagnosis and intervention in breast imaging. Radiologic Society of North America Meeting. Chicago, Illinois, U.S.A.. November 2002. Winner of the Research Trainee Award of the RSNA 2002.

Doria AS, Babyn PS, Noseworthy MD, Crawley A, Pritzker K, Salter RB. Understanding the functional angiogenic process in an antigen-induced arthritis model: BOLD MR imaging (fMRI) correlation with of the stages of synovitis along the time course of the disease. Presented at SPR annual meeting, Philadelphia, PA. April 2002. John Caffey Award (Society for Pediatric Radiology) "Best basic science research paper".

Faingold R, Daneman A, Manson D, Tomlinson G, Mohanta A, Hellman J, Kim JH. Bowel viability assessment by color doppler sonography in necrotizing enterocolitis. 45th Annual Meeting of the Society for Pediatric Radiology, Philadelphia, PA, April 2002. John Kirkpatrick Young Investigator Award Paper.

Fox A. Gold Medal of the Canadian Association of Radiologists.

Grant A, Parvez B, Connolly B. Peripheral arterial thrombosis in neonates. (Poster) SIR, Salt Lake City, Utah. March 2003. Honours Award.

Haider MA. InfoRad Exhibit. Extending powerpoint with DICOM support: Better image quality and a more interactive presentation. Radiological Society of North America. Chicago, Illinois, U.S.A.. December 2002. Cum Laude Award.

Jones JJ, Ho CS. Fixation devices in interventional radiology. Radiology 2002. (Abstract) RSNA Certificate of Merit Award.

Metser U, Haider MA, Khalili K, Boerner S. Poster Exhibit. Secondary tumor involvement of the uterine corpus and cervix: Patterns of spread and MR imaging findings. Radiological Society of North America Meeting. Chicago, Illinois, U.S.A.. December 2002. Cum Laude Award.

Patlas M, Rosen B, Wilson SR. Scientific Exhibit. Sonographic diagnosis of primary malignant tumors of the fallopian tube. World Federation for Ultrasound in Medicine and Biology. Montreal, Quebec, Canada. June 2003. 2nd Prize.

Paul N, Sharoubim N, Chung TB. Poster. Low dose CT: How low can you go? American Roentgen Ray Society Meeting. San Diego, California, U.S.A.. May 2003. Scientific Merit Award

Sarma D, Blaser S, Shroff M. Neonatal basal ganglia disorders. RSNA, Chicago December 2002. Cum Laude Award.

Sarma D, Willinsky R, terBrugge K. Cerebral aneurysms: Value of computer created 3D models from rotation angiograms in deciding treatment. ASNR 41st Annual Meeting and Symposium. Washington DC, U.S.A.. April 26-May 2, 2003. Magna Cum Laude.

Thomas K, Georgalas C, Owens CM, Burnett C, Roberts G, Lack G. The utility of MRI in the assessment of symptomatic adenoidal hypertrophy and rhinosinusitis in children, pre and post medical therapy. European Society of Pediatric Radiology, Bergen, Norway, 2002. Geurbet Poster Scientific Award.

Valsangiacomo ER, Barrea C, Macgowan CK, Smallhorn JF, Coles JG, Yoo SJ. 37th Association for European Paediatric Cardiology Annual Scientific meeting, May 18, 2002. Phase-Contrast Magnetic Resonance Imaging Measurement of Pulmonary Venous Flow in Normal and Surgically Repaired Pulmonary Veins. Best Poster in Category Imaging

RESEARCH PROGRAM

(Director: Dr. Tim Roberts)

The end of the 2002-2003 academic year marked the completion of the first year for the new research program director Timothy Roberts. No time was wasted as the department saw the acquisition of a number research faculty, post-docs, and supporting research personnel, including research technicians and a plethora of coop/summer students. This “Downtown” group has effectively integrated throughout our department in all University Health Network hospitals. The Downtown Imaging Group is organized into 4 teams representing various sub-specialties of applied imaging research: Multi-modal imaging, Microvascular and Molecular Imaging, Interventional-Cardiac Imaging, and Images Analysis.

The Research Program

Many of the faculty, residents, and fellows in the Department of Medical Imaging devote considerable effort to research. Research is an important mission of the Department of Medical Imaging. The nature of this research depends primarily on the interest and expertise of individuals and on resources at particular hospitals. In addition, the department promotes certain research topics, including the development and evaluation of imaging methods, such as magnetic resonance (MR) imaging, percutaneous and transvascular treatment methods, use of contrast agents, and most recently, minimally-invasive diagnosis and therapy.

Approximately eight years ago, an aggressive program to enhance research within the Department was initiated. The Research Program was created in 1992 with two main objectives:

- to encourage more faculty to participate in research related to radiological observations and procedures;
- to allow at least a few of the faculty to perform intensive medical imaging research

The two objectives are being pursued through several initiatives, involving contributions to the salary of a small number of faculty, shared access to certain resources, and an annual forum for highlighting research accomplishments. 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 Medical Imaging Research and Development Awards (Protected Research Time)

The Medical Imaging Research and Development Awards have been our most successful initiative. These awards allow a select group of radiologists to devote at least one day each week to a particular research project. The Awardees in 2002-2003 were:

| Award Holder | Hospital | Project Title |
|---------------------|-----------------|---|
| Mostafa Atri | SWCHSC | Accuracy of Unenhanced Helical CT and Added Value of Enhanced CT in the Assessment of Acute Abdomen |
| Susan Blaser | HSC | Correlation of Radiologically Determined Labyrinthine Dysplasias with Audiometric Data and Prediction of Response to Cochlear Implantation |
| Petrina Causer | SWCHSC | ACRIN 6667: MRI Evaluation of the Contralateral Breast in Women with a Recent Diagnosis of Breast Cancer |
| Bairbre Connolly | HSC | Prospective Evaluation of the Safety and Efficacy of Sonographically Guided Tendon Sheath Injections in Children |
| Marcus Dill-Macky | UHN/MSH | Radiofrequency Ablation of Hypervascular Liver Lesions: Prediction of Success Using Contrast Enhanced Ultrasound |
| Richard Farb | UHN/MSH | Idiopathic Intracranial Hypertension: The Prevalence and Morphology of Sinovenous Stenosis |
| Roberta Jong | SWCHSC | The ACRIN Digital Mammography Imaging Screening Trial |
| Korosh Khalili | UHN/MSH | The Utility or Futility of a Second Imaging Test in the Assessment of Acute Abdominal Pain in Patients Presenting to the Emergency Department |
| Derek Muradali | SMH | Contrast Enhanced Sonography of Breast Nodules and Lymph Nodes: Vascular Morphology and Pathologic Correlation |
| Dawn Pearce | SMH | Weight-bearing CT Scan of the Feet |
| Manohar Shroff | HSC | Emergency Cervical Spine X-rays in Children: Differences in Interpretation by Subspecialization |
| Lawrence White | UHN/MSH | Quantitative T2 Mapping of Cartilage Transplantation in an Animal Model |
| Stephanie Wilson | UHN/MSH | Characterization of Indeterminate Hepatic Nodules in High-Risk Patients for Hepatocellular Carcinoma with Contrast-Enhanced Ultrasound |

RSNA Resident/Fellow Research Award

The RSNA Research and Education Fund offers an award annually to recognize and encourage outstanding residents and fellows in radiology research. The award is for one resident or fellow in each training program in North America who is deemed to have participated meaningfully in research during the previous year.

Research Day

Our 15th annual Department of Medical Imaging Research Day was cancelled due to the SARS outbreak. Individual resident research projects were presented on September 23, 2003 and evaluated by a small group of department members. The presentations are listed by title at the end of this section.

Positron Emission Tomography Centre, Centre for Addiction and Mental Health

The University of Toronto Positron Emission Tomography (PET) Centre is under the direction of Dr. Sylvain Houle. Investigations concentrate on schizophrenia, mood and anxiety disorders, cognitive neuroscience, aging and dementia, movement disorders, and PET methodology.

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.

Faculty List

(Academic Rank as of June 30, 2003)

| | | |
|----------------------|---------------------|--|
| Timothy Roberts | Professor | Director, Research Program, UHN |
| John A. Rowlands | Professor | Senior Scientist, SWCHSC |
| Michael L. Wood | Professor | MR physicist |
| Martin J. Yaffe | Professor | Senior Scientist, SWCHSC |
| Sylvain Houle | Associate Professor | Director, PET Centre |
| | | Centre for Addiction and Mental Health |
| Curtis B. Caldwell | Assistant Professor | Physicist, SWCHSC |
| Adrian Crawley | Assistant Professor | MR physicist, UHN |
| Andrea Kassner | Assistant Professor | MR physicist, UHN |
| Christopher MacGowan | Assistant Professor | MR physicist, HSC |
| Michael Noseworthy | Assistant Professor | MR physicist, HSC |
| George Tomlinson | Assistant Professor | Biostatistics |

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.

Boyd NF, Yaffe MJ, et al, Mammographic Densities in Chinese and Caucasian Women: A Pilot Study, National Institutes of Health, \$49,972 USD (2001-2002)\$24,790 USD (2002-2003)

Boyd NF, Yaffe MJ et al, Effects of Diet on Growth Hormone-IGF-1 Axis, National Institutes of Health, \$356,758 USD (2001-2002); \$223,372 USD (2002-2003)

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.

Cheyne, D - Co-Investigator: CIHR (MRC) – Research Grant (renewal) “Plasticity of sensory systems investigated by functional brain imaging in humans.” \$315,000, 2000 – 2003.

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-

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

MacGowan C, - Co-Investigator: Sun Microsystems Canada Equipment Competition: Computing Infrastructure for Cardiovascular and Brain Research. \$193,000, 2002/03

MacGowan C, - Collaborator, Canadian Institutes of Health Research, Development of MR Imaging to Measure Arterial Pulse Pressure and Vessel Distension: \$40,000 annually, 2001/09 - 2003/08

Oram-Cardy J - CIHR Post-Doctoral Fellowship, \$47,500 stipend plus \$3,500 pa, 2003 – 2005

Oram-Cardy J - University of Toronto Open Fellowship top-up Award, \$3,000, 2002 – 2003

Pisano ED, Yaffe MJ, et al, Trial of Digital Mammography versus Screen-Film Mammography, US National Institutes of Health/ACRIN CA80098, \$208,900 USD, 06/01/01 - 05/30/04

Roberts TPL. National Alliance For Autism Research (NAAR), Principal Investigator, "Neural correlates of phonological processing in individuals with autism". 7/01-6/03, \$ 96,273

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, 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

Publications

Boyd NF, Dite GS, Stone J, Gunasekara A, English DR, McCredie MRE, Giles GG, Trichtler D, Chiarelli A, Yaffe MJ, Hopper JL. Heritability of Mammographic Density, a Risk Factor for Breast Cancer New England Journal of Medicine. 347(12), 886-894, 2002.

Boyd NF, Martin L, Stone J, Little L, Minkin S, Yaffe M. A Longitudinal Study of the Effects of Menopause on Mammographic Features. Cancer Epidemiology, Biomarkers & Prevention 11;1048-1053, 2002.

Boyd NF, Stone J, Martin LJ, Jong R, Fishell E, Yaffe M, Hammond G, Minkin S. The Association of Breast Mitogens with Mammographic Densities. British Journal of Cancer 87(8):876-882, 2002.

Brasch RC, Gossmann A, Helbich TH, Kuriyama N, Roberts TP, Shames DM, van Bruggen N, Wendland MF, Israel MA. Can a small-molecular gadolinium contrast agent be applied successfully with dynamic MRI to quantitatively define brain tumor microvascular responses to angiogenesis inhibition? Acad Radiol. 2002 Aug;9 Suppl 2:S326-7.

Caldwell CB, Mah K, Skinner M, Danjoux CE. Can PET provide the 3D extent of tumor motion for individualized internal target volumes? A phantom study of the limitations of CT and the promise of PET. *Int J Radiat Oncol Biol Phys*. 2003 Apr 1;55(5):1381-93.

Callen DJ, Black SE, Caldwell CB. Limbic system perfusion in Alzheimer's disease measured by MRI-coregistered HMPAO SPET. *Eur J Nucl Med Mol Imaging*. 2002 Jul;29(7):899-906. Epub 2002 Apr 27.

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Invited Lectures

Macgowan C. Measurements of Pulmonary Flow Patterns Using MRI. Downtown Imaging Research Lecture Series. Sponsor: University of Toronto, Department of Medical Imaging Toronto, Canada. June 23, 2003.

Macgowan C. Blood Flow Measurements with MRI. Downtown Imaging Research Lecture Series, Sponsor: University of Toronto, Department of Medical Imaging, Toronto, Canada. January 13, 2003.

Macgowan, C. Pulmonary Flow Properties and Measurement. Guest Speaker, Sponsor: Sunnybrook and Women's College Health Sciences Centre, Toronto, Canada. November 28, 2002.

Oram-Cardy J. Toronto Catholic District School Board, Toronto, Ontario. "Seeking markers of Specific Language Impairment and Attention-Deficit/Hyperactivity Disorder", Board-wide in-service for speech-language pathologists. June 2003

Rowlands JA. Montreal, Quebec, Canada Refresher course, "Physics and technology of fluoroscopic image detectors" AAPM Summer School on Intravascular Brachytherapy and Fluoroscopically guided interventions. June 2002

Sussman M. Imaging for Intervention, Talk Title: Real-Time Adaptive MRI for High-Resolution Coronary Imaging. Toronto, Ontario, September 24, 2002.

Sussman M. Real-Time Cardiac Workshop, Talk Title: Real-Time Image Combination: A Better Approach for Imaging in the Presence of Motion? Toronto, Ontario, July 10, 2003.

Yaffe MJ. Quantifying breast cancer risk from mammograms. CARS 2002 Computer Assisted Radiology and Surgery. 16th International Congress and Exhibition, Paris, France June 26-29, 2002.

Teaching -- Hours of Lectures

| Faculty Member | Students | Residents, Fellows, Faculty | Technologists |
|-----------------------|-----------------|------------------------------------|----------------------|
| C.B. Caldwell | 10 | 1 | 2 |
| S. Houle | 10 | 20 | 10 |
| T.R. Roberts | 4 | 10 | 2 |
| J.A. Rowlands | 2 | 4 | 0 |
| M.L. Wood | 0 | 4 | 0 |
| M.J. Yaffe | 10 | 38 | 3 |

Department of Medical Imaging Annual Research Day 2002

Date: Tuesday, September 23, 2003

Location: Sadowski Auditorium, 18th floor, Mount Sinai Hospital

Starting Time: 5:00 pm

| | |
|---------------------|---|
| Peter Ballyk | Increased Intramural Stress May Promote Post-Angioplasty Restenosis |
| Cara Betel | Ultrasound Diagnosis of Gestational Trophoblastic Disease |
| Richard Bitar | Chest X-ray Manifestations of Severe Acute Respiratory Syndrome in Health Care Workers: The Toronto Experience |
| Anita Chae | The Impact of ATECO MRA of the Neck Vessels at TWH |
| Zdenko Filakovic | Evaluation of the "Steeple" Sign in Children with Croup |
| Angela Ho | Size Range of Abdominal Lymph Nodes in Normal Patients on CT |
| Anish Kirpalani | Utilization and Outcomes of Unenhanced Helical CT for Emergency Investigation of Renal Colic: A Comparison of 1998 and 2002 |
| Zeinab Layton | Ultrasound Assessment of the Dorsal Scapholunate Ligament with Arthroscopic Correlation |
| Selina Lem | Toronto Hepatic Arterial Embolization Study |
| Erika Mann | Peritonitis in the First 30 Days Following Image Guided Gastrostomy Tube Insertion: Evaluation of Patient Profile, Management and Outcome in a Pediatric Population |
| Andrea Milic | Retrievable Inferior Vena Cava Filter Removal in the Presence of Trapped Thrombus |
| Bonnie O'Hayon | Tetralogy of Fallot with Absent pulmonary valve |
| Steven Singer | Dynamic Breast MRI: Importance of High Temporal Resolution |
| Markian Shulakewych | Bronchial Artery Embolization |
| Sameh Tadros | Chest CT Manifestations of Amiodarone Toxicity |
| Lana Wilkinson | Correlation of Perfusion MRI with Patient Symptoms following Percutaneous Radiofrequency Ablation of Osteoid Osteoma |

RESIDENT TRAINING PROGRAM

General Description

There were 48 residents in our program in the 2002-2003 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 2002 - 2003, 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

This is the first year of training in medical imaging. During 2002 - 2003, 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 2002 - 2003, 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.

2002 – 2003 recipient: Dr. Tarang Sheth, 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.

2002- 2003 winner: Dr. Marc Ossip, 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.

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

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
Brian Yeung, MD
Queen's University, 2002
Katerine Zukotynski, MD
University of Toronto, 2002

PGY2 Level

Gagan Ahuja, MD
University of Toronto, 2001
Harpreet Baweja, MD
McMaster University, 1994
Richard Bitar, MD
University of Toronto, 2001
Louis-Martin Boucher, MD/PhD
University of Toronto, 2001
Debra Chang, 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
Rola Shaheen, MD
University of Jordan, 1996

PGY3 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
Vikash Prasad, MD
Dalhousie University, 2000
Michael Stefanos, MD
University of Toronto, 2000

PGY4 Level

Peter Ballyk, MD
University of Toronto, 1999
Carrie Betel, MD
University of Toronto, 1999
Anita Chae, MD
University of Western Ontario, 1999
Zdenko Filakovic, MD
Ontario International Medical Program, 1999
Angela Ho, MD
University of Toronto, 1999
Zeinab Layton, MD
University of Western Ontario, 1999
Selina Lem, MD
Queen's University, 1999
Bonnie O'Hayon, MD
University of Toronto, 1999
Markian Shulakewych, MD
University of Manitoba, 1994
Steven Singer, MD
University of Ottawa, 1998

Sameh Tadros, MB, BCh
Ontario International Medical Program, 1999
Lana Wilkinson, MD
McMaster University, 1999

PGY5 Level

Frederick Lan, MD
University of Toronto, 1998
Erika Mann, MD
Queen's University, 1998
Marc Ossip, MD
University of Toronto, 1998
Jillian Pugh, MD
Dalhousie University, 1998
Tarang Sheth, MD
University of Toronto, 1998
Vincent Shin, MD
University of Ottawa, 1998
Robert Yu, MD
University of Toronto, 1998

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 weekly or biweekly teaching rounds for both radiology and nuclear medicine residents at these hospitals. Also, there are city-wide nuclear medicine rounds held every Friday morning at the Hospital for Sick Children. The residents acquire skills by participating in daily clinical work. Didactic instruction is supplemented by teaching files at each hospital. In addition, there are monthly teaching rounds during the academic year at Mount Sinai Hospital. These rounds are given by internationally renowned guest speakers, who also present evening lectures on current topics in nuclear medicine at the Toronto Nuclear Medicine Society Meeting.

The Nuclear Medicine Program is actively involved in clinical and basic science research including functional neuroimaging with SPECT and PET, cardiac, oncologic, and pediatric nuclear medicine, and radiochemistry. Residents are encouraged to participate in these research activities.

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 epidemiologist who is 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 15th annual Department of Medical Imaging Research Day was cancelled due to the SARS outbreak. Individual resident research projects were presented on September 23, 2003 and evaluated by a small group of department members. The presentations included:

| | |
|---------------------|---|
| Peter Ballyk | Increased Intramural Stress May Promote Post-Angioplasty Restenosis |
| Cara Betel | Ultrasound Diagnosis of Gestational Trophoblastic Disease |
| Richard Bitar | Chest X-ray Manifestations of Severe Acute Respiratory Syndrome in Health Care Workers: The Toronto Experience |
| Anita Chae | The Impact of ATECO MRA of the Neck Vessels at TWH |
| Zdenko Filakovic | Evaluation of the “Steeple” Sign in Children with Croup |
| Angela Ho | Size Range of Abdominal Lymph Nodes in Normal Patients on CT |
| Anish Kirpalani | Utilization and Outcomes of Unenhanced Helical CT for Emergency Investigation of Renal Colic: A Comparison of 1998 and 2002 |
| Zeinab Layton | Ultrasound Assessment of the Dorsal Scapholunate Ligament with Arthroscopic Correlation |
| Selina Lem | Toronto Hepatic Arterial Embolization Study |
| Erika Mann | Peritonitis in the First 30 Days Following Image Guided Gastrostomy Tube Insertion: Evaluation of Patient Profile, Management and Outcome in a Pediatric Population |
| Andrea Milic | Retrievable Inferior Vena Cava Filter Removal in the Presence of Trapped Thrombus |
| Bonnie O’Hayon | Tetralogy of Fallot with Absent pulmonary valve |
| Steven Singer | Dynamic Breast MRI: Importance of High Temporal Resolution |
| Markian Shulakewych | Bronchial Artery Embolization |
| Sameh Tadros | Chest CT Manifestations of Amiodarone Toxicity |
| Lana Wilkinson | Correlation of Perfusion MRI with Patient Symptoms following Percutaneous Radiofrequency Ablation of Osteoid Osteoma |

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, 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 2002-2003 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.

2002–2003 Department of Medical Imaging Fellows

Abdominal Imaging Fellows

- Paul Burn
- Ajay Manohar Chauhan
- Kavita Dhamanaskar
- Sangeet Ghai
- Anat Kornecki
- Richard Levine
- Sharad Maheshwari
- Michael Patlas
- Niall Power
- Sngela Riddell
- Suzanne Ryan

Cardiac Imaging Fellow

- Eliahu Konen

Cross-sectional Imaging Fellows

- Hilarie Broom
- Ryan Rebello

Magnetic Resonance Imaging Fellow

- Marie Smerdely

Musculoskeletal Imaging Fellows

- Lincoln Gillam
- Jonathan Harris
- Richard Turner

Neuroradiology (diagnostic) Fellows

- Ronit Agid
- Jeffery Illman
- Dipanka Sarma
- James Scott
- Eugene Yu

Neuroradiology (interventional) Fellows

- Charles Haw

Thoracic Imaging Fellows

- Colm Boylan
- Anuradha Rao

Vascular/Interventional Radiology Fellows

- Peter Brown
- Elizabeth David
- Teresa Loucks-Gray
- Jaikishan Mordani
- Mohammed Al-Muaikeel

Women's Imaging Fellow

- Sandeep Ghai

Pediatric Imaging Fellows

- Joao Amaral
- Margôt Brannigan
- Andrea Doria
- Monica Epelman
- Ricardo Faingold
- Lucia Fontalvo
- Salwa Haidar
- Christine Huslage
- Anna Illner
- Christian Kellenberger
- Tracy Kilborn
- Osnat Konen

- Ashley Robinson
- Eilish Twomey
- Sheldon Wiebe

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. Ten lecturers gave a total of 24 hours of interactive seminars to the first year medical class using this new curriculum. 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. TaeBong Chung, Dr. Wayne Dietel, Dr. Tim Dowdell, Dr. Nasir Jaffer, Dr. John Kachura, Dr. Walter Kucharczyk, Dr. Walter Montanera, Dr. Narinder Paul, Dr. Dawn Pearce and Dr. William Weiser.

Full Class Lecture - Medical Imaging Modalities

This one hour lecture was given for the first time this year by Dr. Nasir Jaffer. It outlines the basic technical aspects of the major medical imaging modalities including X-ray, CT, MRI, ultrasound and nuclear medicine.

Full Class Lecture - Imaging of the Lungs

Dr. Daniel Rappaport delivered this one-hour lecture to the first year medical class.

Full Class Lecture - Imaging of the Bones and Muscles

Dr. Joel Rubinstein delivered this one-hour lecture to the first year medical class.

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.

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. In the near future, this case material will be presented to students in a web-based format.

Seminar in Chest Imaging

Dr. Jane Crossin 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 was introduced for the first time this year. It emphasized the role medical imaging plays in the staging and follow-up of neoplastic disease. Dr. Marin O'Malley and Dr. Tanya Chawla each gave this 2 hour seminar to half of the year 2 class.

Foundation of Medical Practice Course

This 21-week course teaches core clinical subjects such as medicine and surgery.

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

Radiology departments from each of the Medical Academies of the University of Toronto provided a multi-disciplinary, 2 hour, interactive seminar that reviewed Imaging in Obstetrics and Gynecology. This was supervised by Dr Jane Wall.

The chest imaging seminar, previously given through the academies was standardized this year. The seminar series was supervised by Dr. TaeBong Chung. This 2 hour seminar was given to 4 groups of 50 students at the Medical Sciences Building by four radiologists. Dr. TaeBong Chung, Dr. Tim Dowdell, Dr. William Weiser and Dr. Harry Schulman participated in this seminar series.

Full Class Lecture in Trauma Radiology

The trauma imaging seminar, previously given through the academies was standardized this year into a full class lecture.

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. Lynn Noël de Tilly, Dr. William Weiser, Dr. Paul Hamilton and Dr. Tim Dowdell.

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

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 2002-2003 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.

The popularity of the elective program continues to increase. This is evidenced by a very significantly increase in the number of fourth year electives taken in radiology in this past year as compared to the prior academic year.

University of Toronto Electives

Eighty one University of Toronto students took radiology electives in their fourth year at the various teaching hospitals during the 2002-2003 academic year.

Visiting Elective Students

Seventy six non-University of Toronto students, many of these overseas foreign students in their senior undergraduate year, took part in visiting electives during the 2002–2003 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) Genitourinary and Musculoskeletal Radiology – Dr. Louis Wu
- ii) Chest Radiology – Dr. TaeBong Chung
- iii) Gastrointestinal Radiology – Dr. Nasir Jaffer
- iv) Neuroradiology

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 Dr. Nasir Jaffer, Dr. TaeBong Chung and Dr. David Salonen.

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

The Department of Medical Imaging hosts an internet web site on which various program descriptions are posted. Plans are being made to expand the role of the Internet in the delivery of and evaluation of undergraduate Medical Imaging teaching programs.

The Future Direction of the Medical Imaging Undergraduate Teaching Program

Efforts are currently 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. Much of this work has been completed. This approach will be ongoing and promises to further optimize the efficiency, scope and value of the undergraduate teaching program in Medical Imaging.

CONTINUING EDUCATION PROGRAM

Organ Imaging Review September 29-October 3, 2002

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

Armstrong, Derek, M.B., B.S., Assistant Professor
Asch, Murray, M.D., Assistant Professor
Atri, Mostafa, M.D., Associate Professor
Babyn, Paul, M.D., Associate Professor
Bleakney, Robert, M.D., Clinical Fellow
Bret, Patrice, M.D., Professor
Bukhanov, Karina, M.D., Assistant Professor
Causer, Petrina, M.D., Lecturer
Christakis, Monique, M.D., Assistant Professor
Chung, Tae-Bong, M.D., Lecturer
Cooper, Perry, M.D., Assistant Professor
Crossin, Jane, M.B., BCh, Assistant Professor
Dhamanaskar, Kavita, M.D., Clinical Fellow
Fong, Katherine, M.D., Associate Professor
Gray, Bruce, M.D., Assistant Professor
Hamilton, Paul, M.D., Assistant Professor
Ibach, Deborah, M.D., Locum
Jaffer, Nasir, M.D., Associate Professor
Keller, Anne, M.D., Assistant Professor
Khalili, Korosh, M.D., Assistant Professor
Kucharczyk, Walter, M.D., Professor and Chair
Kulkarni, Supriya, M.D., Clinical Fellow
Laughlin, Suzanne, M.D., Assistant Professor
Lax, Matthew, M.D., Assistant Professor
Merchant, Naeem, M.D., Assistant Professor
Montanera, Walter, M.D., Associate Professor

Moore, Lori, M.D., Lecturer
Muradali, Derek, M.D., Assistant Professor
Oudjhane, Kamaldine, M.D., Associate Professor
O'Malley, Martin, M.D., Assistant Professor
Paul, Narinder, M.D., Assistant Professor
Pearce, Dawn, M.D., Lecturer
Marilyn Ranson, M.D., Assistant Professor
Rappaport, Daniel, M.D., Associate Professor
Rubenstein, Joel, M.D., Associate Professor
Salem, Shia, M.D., Associate Professor
Salonen, David, M.D., Assistant Professor
Shroff, Manohar, M.D., Assistant Professor
Temple, Michael, M.D., Lecturer
TerBrugge, Karel, M.D., Professor
Weisbrod, Gordon, M.D., Professor
White, Lawrence, M.D., Assistant Professor
Wilson, Christine, M.D., Assistant Professor
Wright, Barbara, M.D., Assistant Professor
Zelovitsky, Leon, M.D., Assistant Professor

Guest Faculty

Easson, alexandra., M.D.
Associate Professor
Department of Surgery
University of Toronto
Toronto, Ontario

Frush, Donald, M.D.
Associate Professor
Department of Radiology
Duke University Medical Center
Durham, North Carolina

Levy, Angela, M.D.
Associate Chairperson
Department of Radiologic Pathology
Armed Forces Institute of Pathology
Washington, DC

Obstetric Ultrasound: Setting the Standard for 2003

February 21-23, 2003

Co-sponsored by Departments of Medical Imaging and Obstetrics and Gynaecology

Course Description

This 2 1/2 day course will provide participants with up-to-date practice standards in obstetric ultrasound. It will emphasize the integration of ultrasound into current clinical management and will explore the latest technological and clinical advances. Participants will learn the state-of-the-art applications of ultrasound to the practice of obstetrics; be able to perform a system-based fetal evaluation (ultrasound) according to up-to-date national/international standards and will better understand how to integrate the findings with clinical managements.

Directors: Phyllis Glanc M.D., Shia Salem M.D., Department of Medical Imaging
Jo-Ann Johnson M.D., Greg Ryan M.D., Department of Obstetrics and Gynaecology

University of Toronto Medical Imaging Faculty

Fong, Katherine M.D., Associate Professor
Glanc, Phyllis M.D., Assistant Professor
McGregor, Caitlin M.D., Fellow
Pantazi, Sophie M.D., Lecturer
Salem, Shia M.D., Associate Professor
Toi, Ants M.D., Associate Professor
Yoo, Shi-Joon M.D., Professor

Guest Faculty

Benoit, Bernard, M.D.
Centre Femme Mere Infant
Hopital de L'Archet 2
Nice, France
Chef de Service Adjoint
Ultrasound Department et Maternite
Hospital Princess Grace, Monaco

Harman, Christopher, M.D.
Professor and Vice Chair
Department of Obstetrics, Gynecology and Reproductive Services
University of Maryland
Baltimore, Maryland

Mohide, Patrick, M.D.
Professor and Chair
Department of Obstetrics and Gynecology
McMaster University
Hamilton, Ontario

INVITED LECTURERS AND VISITING PROFESSORS

September 23-24, 2002

Dr. Mary Keogan
Department of Radiology
Harvard Medical School
Beth Israel Deaconess Medical Center

“Acute abdominal Inflammation: Advances in CT Imaging”

“Pancreatic Carcinoma: Imaging Advances and Challenges”

“Solid and Cystic Renal Lesions: Evaluation with CT and MRI”

October 7-8, 2002

Dr. William Brant
Department of Radiology
University of Virginia Health System

“Endovaginal US of the 1st Trimester”

“Fetal Life Support - Placenta, Membranes, Cord, Cervix”

“CT of Abdominal Trauma”

November 4-5, 2002

Dr. King Li
Radiology and Imaging Sciences
National Institutes of Health
Warren Grant Magnuson Clinical Center

“Use of Pulsed High Intensity Focused Ultrasound for Drug Delivery”

“Biomedical Imaging in the Postgenomic Era: Opportunities and Challenges”

“Noninvasive Diagnosis of Mesenteric Ischemia using MRI”

January 13-14, 2003

Dr. Kenneth Buckwalter
Department of Radiology
Indiana University Hospital

“Muscle Tears, Strains, and Pains”

“Orthopedic Applications of Multidetector CT”

“Why Should We Use MDCT When We Have MR?”

February 24-25, 2003

Dr. Robert Zimmerman
Department of Radiology
Children's Hospital of Philadelphia

“Perinatal Brain Injury”

“Fetal MRI Brain Imaging: Hydrocephalus and Other Diseases”

“Pediatric Brain Tumors: Imaging, Diffusion and Proton Spectroscopy”