

**Robert A. deKemp, PhD, PEng, PPhys**  
University of Ottawa Heart Institute  
H1 – Cardiac PET Centre  
40 Ruskin Street, OTTAWA, ON, K1Y 4W7  
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E-mail: [RAdeKemp@ottawaheart.ca](mailto:RAdeKemp@ottawaheart.ca)

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Department/School: Medicine (Cardiology)

1996 - date

**CURRICULUM VITAE**

a) **NAME:** rank, status (tenured, contract, Member of SGSR, Graduate Faculty, core member, etc.) **EMPLOYEE NO.**

**DEKEMP, Robert**

#95055

Associate Professor, Medical Scientist, Faculty of Medicine, University of Ottawa  
Head Imaging Physicist, Cardiac Imaging, University of Ottawa Heart Institute  
Member, Faculty of Graduate Studies and Research, Carleton University  
Member, Faculty of Graduate and Postdoctoral Studies, University of Ottawa

b) **DEGREES:** designation, institution, department, year

1989	B.A.Sc., Systems Design Engineering, University of Waterloo
1992	M.Sc., Medical Physics, McMaster University
1995	Ph.D., Electrical and Computer Engineering, McMaster University

**CERTIFICATION:**

1994	P.Eng., Professional Engineer
2003	P.Phys., Professional Physicist

**Licensure:**

1994-Date	Licensed by the Association of Professional Engineers of Ontario (#90354721)
2003-Date	Licensed by the Canadian Association of Physicists (#142)

c) **EMPLOYMENT HISTORY:** dates, rank/position, department, institution/firm, current full-time position and link to the program under review

**Undergraduate (Co-op)**

Jan-Apr 1985	Systems Design Engineer, Product Development & Planning IBM Canada Ltd. Laboratory, Markham
Sep-Dec 1985	Systems Design Engineer, Financial Systems Support Group IBM Canada Ltd., Markham
May-Aug 1986	Software Engineer, Satellite Division, Canada Centre for Remote Sensing Department of Energy, Mines and Resources, Ottawa
May-Aug 1988	Scientific Staff, Computer Aided Design and Manufacturing

Sep-Dec 1988 Bell Northern Research, Ottawa  
Jan-Apr 1987

### **Previous Positions**

1989-1990 Research Engineer, Research and Development  
TYDAC Technologies Inc., Ottawa

1990-1991 Systems Design Engineer, Department of Radiology and Nuclear Medicine  
McMaster University, Hamilton

1991-1995 Graduate Student, M.Sc., Ph.D.  
McMaster University, Hamilton

1994-1995 Research Associate, Department of Medicine (Cardiology)  
Faculty of Medicine, University of Ottawa

1995-1997 Physicist, Cardiac PET Centre  
University of Ottawa Heart Institute, Ottawa

1996-2004 Assistant Professor, Department of Medicine (Cardiology)  
Faculty of Medicine, University of Ottawa

1997-2006 Head of PET Physics, National Cardiac PET Centre  
University of Ottawa Heart Institute

2000-2004 Adjunct Professor, Department of Medical Physics  
Faculty of Science, McMaster University

2001-2005 Director, Ottawa Medical Physics Institute, Department of Physics  
Ottawa-Carleton Institute for Physics, University of Ottawa and Carleton  
University

### **Current Positions**

2000-Date Adjunct Professor, Department of Physics, Faculty of Science, Carleton University

2000-Date Member, Faculty of Graduate Studies and Research, Carleton University

2001-Date Active Scientific Research Staff, Department of Medicine  
Division of Cardiology and Division of Nuclear Medicine (Cross-Appointment)  
The Ottawa Hospital.

2004-Date Associate Professor, Department of Medicine (Cardiology)  
Faculty of Medicine, University of Ottawa

2004-Date Member, Faculty of Graduate and Postdoctoral Studies, University of Ottawa

2004-Date Cross-Appointment, School of Information Technology and Engineering  
Faculty of Engineering, University of Ottawa

- 2005-Date Past-director, Ottawa Medical Physics Institute, Department of Physics  
Ottawa-Carleton Institute for Physics, University of Ottawa and Carleton  
University
- 2005-Date Director, Animal P.E.T. Research Imaging Laboratory (APRIL)  
National Cardiac PET Centre, University of Ottawa Heart Institute
- 2006-Date Head Imaging Physicist, Cardiac Imaging  
The Ottawa Hospital, University of Ottawa Heart Institute
- 2008-Date Principal Investigator, Ottawa Heart Institute Research Corporation

d) HONOURS: (F.R.S., F.R.S.C., Governor Generals Award, honorary degree, etc...)

- 1986 – 1989 Dean’s Honour List, University of Waterloo
- 1991 – 1994 Centennial Scholarships (graduate tuition), McMaster University
- 1991 Natural Sciences and Engineering Research Council  
NSERC PGS A (Two Years)
- Accepted for MSc & PhD graduate studies
- 1991 Radiological Society of North America (RSNS)
- Certificate of Merit, Scientific Exhibit
  - Automated Quantification of Emphysema with CT
- 1993 Natural Sciences and Engineering Research Council
- NSERC PGS B (Two Years)
  - Accepted for completion of PhD Graduate Studies
- 1993 Canadian Institutes for Health Research (formerly Medical Research Council)
- MRC Studentship (Declined in Favour of NSERC Award)
- 1996 Polk Research Award, Best Clinical Science Paper – University of Ottawa Heart  
Institute Research Day
- C. Johnson, Co-Supervised with T. Ruddy
- 1997 International Council of Nuclear Cardiology Award
- with T. Ruddy
- 1998 PSI Foundation Resident Research Prize
- L. Beauchesne, Co-Supervised with T. Ruddy
- 1999 Canadian Institutes for Health Research (formerly MRC) Resident Research  
Award, Canadian Society of Clinical Investigation
- L. Beauchesne, Co-Supervised with T. Ruddy
- 2000 Finalist - Polk Research Award, Best Clinical Science Paper, University of  
Ottawa Heart Institute Research Day
- C. Johnson, Co-Supervised with T. Ruddy

- 2000-2005 Ontario Graduate Scholarship, \$15,000/year
  - R.Wassenaar, Supervisor: R. de Kemp
  
- 2000 Polk Research Award, Best Clinical Science Paper, University of Ottawa Heart Institute Research Day (with N. Sekar and R. Beanlands)
  - N. Sekar, Co-Supervised with R. Beanlands
  
- 2001 1<sup>st</sup> Prize Award, University of Ottawa Internal Medicine Research Day
  - M. Ling, Co-Supervised with R. Beanlands
  
- 2001 1<sup>st</sup> Prize Award, HSF Clinical Update Research Award
  - With L. Garrard and R. Beanlands
  
- 2000 Finalist - Polk Research Award , Best Clinical Science Paper, University of Ottawa Heart Institute Research Day
  - M. Ling, Co-Supervised with R. Beanlands
  
- 2002 Student Presentation Award, Canadian Cardiovascular Congress (CCC) - Edmonton, AB
  - G. Saab, Co-Supervised with R. Beanlands
  
- 2002 Finalist - Student Presentation Award, Canadian Cardiovascular Congress (CCC) Edmonton, AB
  - H. Ukkonen, Co-Supervised with R. Beanlands
  
- 2002 Polk Research Award, Best Clinical Science Paper, University of Ottawa Heart Institute Research Day
  - R. Seth, Co-Supervised with R. Beanlands
  
- 2002-2003 Ontario Graduate Scholarship in Science & Technology (\$5,000-\$10,000)
  - C. Larsson, Supervisor: R. de Kemp
  
- 2003 HSFO Summer Studentship (\$2,250), “*FDG PET Viability Assessment Methods*”
  - R. Davies, Supervisor: R. de Kemp
  
- 2003 Finalist - Polk Research Award, Best Clinical Science Paper, University of Ottawa Heart Institute Research Day
  - with K.Ananth and T. Ruddy
  
- 2003 Finalist - Polk Research Award, Best Clinical Science Paper, University of Ottawa Heart Institute Research Day
  - with B.Chow and T. Ruddy
  
- 2004 HSFO Science Student Scholarship (\$4,000), “*Myocardial Flow Reserve with Perfusion PET Imaging*”
  - R. Davies, Supervisor: R. de Kemp
  
- 2004 NSERC Summer Student Scholarship (\$4,000), “*Serial Perfusion PET Imaging*”
  - J. Cieniak, Supervisor: R. de Kemp

- 2004-2005 NSERC PGS (\$17,300)
  - R. Klein, MSc co-supervisors: R. de Kemp, A. Adler
- 2005-2008 NSERC CGS - PhD Award (\$35,000/year)
  - R. Klein, PhD Supervisor: R. de Kemp
- 2005-2007 Ontario Graduate Scholarship (\$15,000/year)
  - T. Dumouchel, MSc Supervisor: R. de Kemp
- 2006-2008 NSERC PGS (\$18,000/year)
  - M.Lamoureux, MSc Supervisor: R. de Kemp
- 2006-2008 HSFO MSc Graduate Student Scholarship (\$18,000/year)
  - J. Renaud, MSc Supervisor: R. de Kemp
- 2007-2008 CIHR CGS – Master’s Award (\$17,500/year)
  - M. Lalonde, MSc co-supervisors: R. Wassenaar, R. de Kemp
- 2008-2011 NSERC PGS (\$17,300)
  - T. Dumouchel, PhD Supervisor: R. de Kemp
- 2008-2011 NSERC CGS - PhD Award (\$35,000/year)
  - M.Lamoureux, PhD Supervisor: R. de Kemp
- 2008-2010 HSFO PhD Graduate Student Scholarship (\$21,000/year)
  - R. Klein, PhD Supervisor: R. de Kemp
- 2008 NSERC – Japan summer studentship (\$amount)
  - R. Klein, PhD Supervisor: R. de Kemp

e) **SCHOLARLY AND PROFESSIONAL ACTIVITIES:** past 7 years only (eg. executive and editorial positions but not memberships in societies; invited presentations at national or international conferences. Do not list manuscript and grant application reviews)

**Reviewer**

- 1997- Date IEEE Transactions on Medical Imaging (TMI)
- 1997-Date Canadian Institutes for Health Research (formerly MRC)  
Biomedical Engineering Committee  
Medical Physics and Imaging Committee
- 2001-Date American Journal of Cardiology
- 2002-Date Journal of Nuclear Cardiology
- 2005-date European Journal of Nuclear Medicine and Molecular Imaging
- 2005-date Journal of Nuclear Medicine

2008-date IAEA, Industrial Applications and Chemistry Section  
Division of Physical and Chemical Sciences

**Session Moderator**

2001 Session Chair, “*Imaging Myocardial Viability*”, Imaging Network Ontario Annual Symposium, Toronto

2002 Workshop Chair, “*Myocardial blood flow and viability imaging*”, PET/CT Imaging Symposium and Workshop, Lawson Health Research Institute, London

2001 Session Chair, “*Imaging for Intervention*”, Imaging Network Ontario Annual Symposium, Toronto

2003 Chair, “*Advanced Imaging Techniques*”, International Cardiac Metabolism & Cellular Function Imaging Symposium, Ottawa

2003 Judge, University of Ottawa Heart Institute Research Day, Ottawa

**Invited Consultation (academic and industry)**

1997-1999 CTI PET Systems, Knoxville, TN.  
• Alpha and Beta Testing of Singles Attenuation Correction and ECAT Software Release 7.2

2000 CTI PET Systems, Knoxville, TN.  
• Beta Testing of ECG-gating on the ECAT ART scanner

2002-2004 Emory University, Atlanta, GA.  
• Beta Testing of Emory Cardiac Toolbox for PET

2002-2004 Ontario Ministry of Health & Long-Term Care PET Steering Committee Quality Assurance Sub-Committee, ON  
• Standards for Oncology PET Imaging in Ontario

2003 Ministère de la Santé et des Services sociaux, Direction générale des affaires médicales et universitaires, PQ  
• PET Standards for Oncology Imaging

2003 Institute for Clinical Evaluative Sciences (ICES), Toronto, ON.  
• Advisory Committee for the Evaluation of cardiac PET Health Technology

2003 CTI PET Systems, Knoxville, TN.  
• Beta Testing of ECAT Software Release 7.3

2004 St. Joseph’s Healthcare, Hamilton, ON.  
• Technical evaluation of ‘P39’ LSO panel detector PET system.

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|------|--|
| 2004 | State University of New York at Buffalo, Buffalo, NY.<br>Cardiovascular Research Center <ul style="list-style-type: none"> <li>• Analysis methods for dynamic PET imaging research.</li> </ul>   |
| 2006 | Institute for Nuclear Research, Moscow, Russia <ul style="list-style-type: none"> <li>• Strontium/Rubidium Generators for cardiac PET imaging</li> </ul>   |
| 2006 | PMOD Technologies Inc, Geneva, Switzerland. <ul style="list-style-type: none"> <li>• Design and validation of Cardiac PET analysis software</li> </ul>   |
| 2006 | Advanced Molecular Imaging, Sherbrooke, QC <ul style="list-style-type: none"> <li>• First Beta evaluation of LabPET animal imaging system</li> </ul>   |
| 2007 | Central Research Institute for Roentgenology and Radiology, St. Petersburg, Russia <ul style="list-style-type: none"> <li>• Rubidium Elution system for cardiac PET perfusion imaging</li> </ul> |
| 2008 | Kettering Medical Center, Dayton, OH <ul style="list-style-type: none"> <li>• Coronary Flow Reserve clinical research methods</li> </ul>   |
| 2008 | General Electric Healthcare, Waukesha, WI <ul style="list-style-type: none"> <li>• Collaborative Research Agreement in Diagnostic Imaging</li> </ul>   |
| 2008 | Siemens Preclinical PET Systems, Knoxville, TN. <ul style="list-style-type: none"> <li>• Beta Testing of IAW software 1.2</li> </ul>   |

**Scientific Review Committees**

- |           |  |
|-----------|--|
| 2004      | Ryerson University, Faculty of Applied Science and Engineering, Department of Mathematics, Physics and Computer Science, Toronto, ON. <ul style="list-style-type: none"> <li>• Peer Review of proposed Bachelor of Science Program in Medical Physics</li> </ul> |
| 2006      | Carleton University, Faculty of Science, Physics Department <ul style="list-style-type: none"> <li>• New Faculty interview &amp; selection committee, OMPI rep</li> </ul>  |
| 2006-date | Heart and Stroke Foundation of Canada, Ottawa, ON <ul style="list-style-type: none"> <li>• Scientific Review Committee II – ‘Integrative Studies: genetic manipulations / imaging / bioengineering’</li> </ul>   |

**Administrative Committees**

- |           |   |
|-----------|---|
| 2001-Date | Occupational Health & Safety Committee, University of Ottawa<br>Heart Institute |
| 2001      | Radiation Safety Committee, The Ottawa Hospital                                 |

2002-2004	PET Scanner Technical Evaluation and selection Committee, The Ottawa Hospital, General Campus
2003-2007	Undergraduate Medical Admissions Committee, Faculty of Medicine, University of Ottawa
2004 - Date	Quality Assurance subcommittee – Ontario Clinical Oncology Group (OCO) PET imaging clinical trials co-chair with K.Gulenchyn
2006	Cardiac PET/CT Scanner Technical Evaluation and Selection University of Ottawa Heart Institute, Department of Cardiac Imaging, Chair
2007	Small Animal PET Scanner Technical Evaluation and Selection University of Ottawa Heart Institute, Department of Cardiac Imaging, Chair
2007	Canadian Institutes of Health Research Medical Physics and Imaging Committee Selection Panel
2007-Date	CADRE – Ontario FDG PET Registry Quality Assurance Officer
2007-date	Research Positron Emission Radiopharmaceuticals Committee (PERC), University of Ottawa Heart Institute, Cardiac PET Centre Chair

### **Executive Committees**

2001-2005	Director, Ottawa Medical Physics Institute
2005-Date	Past-director, Ottawa Medical Physics Institute
2001-2007	Ontario Consortium for Cardiac Imaging (OCCI) \$45M project funded by the ORDCF UOHI Site-Representative on Executive Board.
2008-date	Imaging for Cardiovascular Therapeutics (ICT) \$43.5M project funded by the ORF UOHI Site-Representative on Executive Board.

f) **GRADUATE SUPERVISIONS:** career numbers; masters, doctoral, postdoctoral - completed/in progress; please distinguish between supervisor, co-supervisor and supervisory committee member

Completed: 6 MSc, 2 PhD, 4 PDF  
In progress: 1 MSc, 3 PhD, 1 PDF



NAME OF STUDENTS supervised within the past seven years, title of thesis or project (specify), year of first registration and year of completion:

**Graduate Supervision**

2000–2003	Erin Niven, PhD, Medical Physics, McMaster University <i>“Radiation Dosimetry for FDG PET Imaging”</i> Co-Supervisor with C.Nahmias
1999-2005	Richard Wassenaar, PhD, Medical Physics, Carleton University <i>“Partial Volume Corrections for Cardiac PET Imaging”</i> Supervisor
2002–2004	Carey Larsson, PhD, Medical Physics, Carleton University (withdrew to accept position in industry) <i>“Quantification of Myocardial Blood Flow with Rubidium-82 Dynamic PET Imaging”</i> Supervisor
2003-2005	Ran Klein, MSc, Computer and Software Engineering, SITE, University of Ottawa <i>“Feedback Control of Rubidium-82 Elution System for Cardiac PET Imaging”</i> Co-Supervisor with A.Adler <b>U.S., Canadian, and International Patents Pending</b>
2003-2005	Geoff Green, MSc, Sys and Comp Engineering, Carleton University <i>“Wavelet Denoising of Cardiac PET Images”</i> Co-Supervisor with A.Cuhadar
2005-2007	Tyler Dumouchel, MSc, Medical Physics, Carleton University <i>“Attenuation and Scatter Correction for microPET”</i> Supervisor
2005-Date	Ran Klein, PhD, Computer and Software Engineering, SITE, University of Ottawa <i>“Quantitative Molecular Imaging in Mice with microPET”</i> Co-supervisor with A.Adler
2006-Date	Jennifer Renaud, MSc, Medical Physics, Carleton University Supervisor
2006-Date	Marc Lamoureux, MSc, Medical Physics, Carleton University Supervisor
2006-Date	Michel Lalonde, MSc, Medical Physics, Carleton University Co-supervisor with R.Wassenaar
2007-Date	Tyler Dumouchel, PhD, Medical Physics, Carleton University <i>“Partial Volume Corrections for microPET mouse imaging”</i> Supervisor

- 2007-Date Stephanie Thorn, PhD, Cellular and Molecular Medicine, University of Ottawa  
 “Pathophysiologic Mechanism of the Human Arg302Gln-PRKAG2 Mutation-Induced Metabolic Cardiomyopathy using PET Metabolic Tracers”  
 Co-supervisors: J.DaSilva, M.Gollob  
 Committee Member
- 2008-Date Chad Hunter, MSc, Medical Physics, Carleton University  
 Supervisor

### **Graduate Thesis Examination**

- 2002 Vitali Selivanov, PhD, Departement de Medicine nucleaire et de radiobiologie, Faculty de medicine, Universite de Sherbrooke.  
 “*Topics in Image Reconstruction for High Resolution PET*”  
 Supervisor: R.Lecomte

### **Post-Graduate Supervision**

- 1998–1999 Tanya Hewitt, Research Associate, Cardiac PET Physics, University of Ottawa Heart Institute  
 “*Statistical Parametric Imaging for Serial Perfusion Analysis*”  
 Supervisor
- 2000–2002 Ahmed Benelfassi, Postdoctoral Research Associate, University of Ottawa Heart Institute  
 “*Rubidium-82 Elution System for Cardiac PET*”  
 Supervisor
- 2002-2007 Kevin Sprague, Postdoctoral Research Associate, Ottawa Heart Institute Research Corporation  
 “*3D Coronary X-ray Angiography Reconstruction*”  
 Supervisor
- 2003-2008 Mireille Lortie, Postdoctoral Associate (PDA), University of Ottawa  
 “*Tracer Kinetic Modeling for Cardiac PET*”  
 Supervisor
- 2004-2006 Katie Lekx, Postdoctoral Fellow, Lawson Research Institute and University of Ottawa Heart Institute  
 “*Rubidium-82 PET imaging in a canine models of chronic ischemia*”  
 Co-supervisor with F.Prato and R.Beanlands
- 2008-Date Ryan Mailloux, PDF, Molecular Function and Imaging Program, University of Ottawa Heart Institute  
 Co-supervisor with Mary-Ellen Harper, University of Ottawa

### **Undergraduate Medical and Co-op Students**

1995	V. Gunter, Medical Student, University of Ottawa Co-Supervisor with R. Beanlands
1995-1996	C. Johnson, Medical Student, University of Ottawa Co-Supervisor with T. Ruddy
1996	B. Safa, Medical Student, University of Ottawa Co-Supervisor with T. Ruddy
1996-1997	G. Vitale, Medical Student, University of Ottawa Co-Supervisor with R. Beanlands
1997	Lyanne Golanowski, co-op student, Math and Stats, University of Ottawa <i>*Awarded best work-term report</i>
1998-2001	Robert Hart, co-op student, Math and Stats, University of Ottawa
2000	Agis Kitsikis, co-op student, Physics, University of Ottawa
2001	Emily Poon, co-op student, Computer Science, University of Ottawa
2001	Natalie Chamoun, co-op student, Comp Science, University of Ottawa
2001	Neil Epstein, co-op student, Mechanical Eng, University of Ottawa
2001-Date	Ran Klein, co-op student, Computer Eng, University of Ottawa
2001-2003	Damianne President, co-op student, Math and Stats, University of Ottawa
2002-2003	Viet Dao, co-op student, Computer Eng, University of Ottawa
2002	Eric Sabondjian, co-op student, Electrical Eng, University of Ottawa
2002	Yogesh Thakur, co-op student, Electrical Eng, University of Ottawa
2002	Mohammed Salah, co-op student, Electrical Eng, University of Ottawa
2002	Mathieu Mallet, co-op student, Computer Eng, University of Ottawa
2002	Charles Nadeau, co-op student, Electrical Eng, University of Ottawa
2003	Velnamby Ambalavanar, co-op student, Comp Eng, University of Ottawa
2003	Jennifer Renaud, co-op student, Physics, Carleton University
2003	Robbie Davies, high-school student, Ottawa Heart Institute
2001-2002	George Saab, Medical Research Student, University of Ottawa
2002-2003	J. Gaudette, Chemical Engineering, University of Ottawa

Co-Supervisor with G. Firnau and J. DaSilva

2004 Jakub Cieniak, co-op student, Physics, University of Ottawa

2004-2005 Jennifer Renaud, co-op student, Physics, Carleton University

2005 Ashley Burke, summer student, Physics, Carleton University

2008 Andrew Scullion, summer student, Physics, Carleton University  
Co-Supervisor with B.Chow

**Medical Students, Residents and Fellows**

1995-1996 Beth Abramson, Cardiology Resident  
University of Ottawa Heart Institute (Supervisor: R. Beanlands)

1997-2000 Nandita Sekar (Scott), Cardiology Resident  
University of Ottawa Heart Institute (Supervisor: R. Beanlands)

1997-2000 Luc Beaudesne, Cardiology Resident  
University of Ottawa Heart Institute (Supervisor: T. Ruddy and R. Beanlands)

1999-2002 Ratika Seth, Cardiology Resident  
University of Ottawa Heart Institute (Supervisor: R. Beanlands)

2000-2002 Bassam Gholoum, Cardiology Resident,  
University of Ottawa Heart Institute (Supervisor: T. Ruddy)

2000-2002 Masoud Mohammed, Nuclear Cardiology/PET Fellow  
University of Ottawa Heart Institute (Supervisor: T. Ruddy)

2000-2003 Ben Chow, Cardiology Resident,  
University of Ottawa Heart Institute (Supervisor: T. Ruddy and R. Beanlands)

2001-2003 Heikki Ukkonen, Nuclear Cardiology/PET Research Fellow  
University of Ottawa Heart Institute (Supervisor: R. Beanlands)

2001-2003 Karthik Ananth, Nuclear Cardiology/PET Fellow  
University of Ottawa Heart Institute (Supervisor: T. Ruddy)

2001-2004 Michael Ling, Cardiology Resident  
University of Ottawa Heart Institute (Supervisor: R. Beanlands)

2001-2004 Derek So, Cardiology Resident  
University of Ottawa Heart Institute (Supervisor: R. Beanlands)

2003-2007 Keiichiro Yoshinaga, Nuclear Cardiology/PET Research Fellow  
University of Ottawa Heart Institute (Supervisor: R. Beanlands)

2003-2007 Hatem Nasr, Nuclear Cardiology/PET Fellow

University of Ottawa Heart Institute (Supervisor: T. Ruddy)

2003-2004 Alex Szeto, PET Research Fellow  
University of Ottawa Heart Institute (Supervisor: R.Beanlands)

2007-2008 Paul Galiwango, Cardiology Resident  
University of Ottawa Heart Institute (Supervisor: B.Chow)

2008-Date Cecilia Ziadi, PET Research Fellow  
University of Ottawa Heart Institute (Supervisor: R.Beanlands)

g) **GRADUATE COURSES:** past 7 years, by year

1995–Date Radiology Resident Instruction, The Ottawa Hospital – Civic Campus

- Interactions of X-rays and Matter
- X-ray Production
- Modulation Transfer Function
- Physics of Positron Emission Tomography

2000–Date Phys 75.524 Physics of Medical Imaging, Carleton University

- Nuclear Medicine Lectures (PET and SPECT)

2003–Date Phys 75.529 Medical Physics Practicum, Carleton University

- Noise Equivalent Count Rates in PET

2007–Date Nuclear Cardiology Imaging Physics Lectures, University of Ottawa Heart Institute

- Tracer Kinetic Modelling
- Quantification of Myocardial Blood Flow with PET imaging

h) **EXTERNAL RESEARCH FUNDING:** past 7 years only, by year, indicating source (granting councils, industry, government, foundations, other); amount; principal investigator; purpose (operating, equipment, travel, publications, etc...) (Include information on principal- or co-investigator)

**Principal Investigator**

<b>YEAR</b>	<b>SOURCE</b>	<b>AMOUNT</b>
1995	Siemens Canada / CTI PET Systems Inc. Physicist, Cardiac PET Program (Salary Support)	\$25,000 US
1997	CTI PET Systems Inc, Knoxville, TN (equipment) “Singles Transmission Imaging on the ECAT ART”	\$50,000 US
1997-2000	Canadian Institutes for Health Research (Formerly MRC) “Evaluating new treatments for heart disease using dynamic positron emission tomography”	\$114,888
2000	CTI PET Systems Inc, Knoxville, TN (equipment)	\$75,000 US

	“ECG-gated Imaging on the ECAT ART”	
2000-2003	Canadian Institutes of Health Research “Serial evaluation of myocardial perfusion using gated SPECT imaging”	\$188,786
2003-2005	J.P. Bickell Foundation “Quantification of myocardial blood flow using Rb-82 positron emission tomography”	\$63,000
2006-2009	Canadian Institutes of Health Research “Quantitative molecular PET imaging in mouse models of heart disease”	\$90,000 /year

### Co-Investigator

YEAR	SOURCE	AMOUNT
1998 – 2000	Heart and Stroke Foundation of Ontario “Metoprolol and Ischemic Myocardium” P.I.: T. Ruddy	\$70,200
1999 - 2002	Canadian Foundation for Innovation (CFI) and Ontario Research and Development Challenge Fund (ORDCF) “Radionuclide production for cardiac PET” P.I.: R. Beanlands	\$4,200,000
2001 – 2003	Canadian Institutes for Health Research “PET and Recovery Following Revascularization (PARR 2)” P.I.: R. Beanlands	\$208,450
2001 – 2003	Heart and Stroke Foundation of Ontario “Outcome and cost-effectiveness of FDG PET (PARR 2) – 2 <sup>nd</sup> Year Follow-up	\$65,605 /year
2003 – 2006	Renewal P.I.: R. Beanlands	\$238,163
2001- 2007	Ontario Research and Development Challenge Fund (ORDCF) “Ontario Consortium for Cardiac Imaging” P.I.: G. Wright, F.Prato <b>R. deKemp - UOHI Site P.I. “Molecular Imaging”</b>	\$15,300,000 <b>\$1,613,000</b>
1999-2004	Canadian Institutes of Health Research “PET and recovery following revascularization (PARR): Evaluation of outcome and cost-effectiveness (Phase 2)” P.I.: R. Beanlands	\$247,608 /year

2003-2006	Canadian Institutes of Health Research <i>“Imaging Cardiac cAMP-Specific Phosphodiesterase-4 with R-[C-11]Rolipram and PET: A New Window on Neurotransmitter Function of the Human Heart”</i> P.I.: J. DaSilva	\$108,000 /year
2004-2006	Heart and Stroke Foundation of Ontario <i>“Respiratory Gated Attenuation Correction for Cardiac PET/CT”</i> P.I.: R.G.Wells, Lawson Health Research Institute, London	\$60,837 /year
2004-2011	National Institutes of Health <i>“Hibernating myocardium and sudden cardiac death”</i> P.I.: J.Canty, J.Fallavollita, University at Buffalo, MI	\$3,563,287 US
2003-2006	Heart and Stroke Foundation of Ontario <i>“Endothelial Modulation with L-Arginine in Patients Undergoing Angiogenic Therapy”</i> P.I. - M. Ruel	\$225,000
2004-2005	Natural Sciences and Engineering Research Council RTI 1 - <i>“Equipment for Electrical Impedance Tomography”</i> P.I. – A.Adler	\$50,000
2005-2009	Heart and Stroke Foundation of Ontario <i>“Effects of CPAP on myocardial energetics and sympathetic nerve function in patients with heart failure and OSA”</i> P.I. – R. Beanlands	\$703,000
2005-2009	Canadian Institutes of Health Research <i>Stem Cell mobilization with GCSF post-MI</i> P.I. – C. Glover	\$400,000
2006-2009	Canadian Institutes of Health Research <i>New ATI radiologands for PET</i> P.I. – J. Dasilva	\$137,000 /year
2006-2010	Canadian Institutes of Health Research <i>Quantitative microPET imaging in mouse models of heart disease</i> P.I. – R.deKemp	\$90,000 /year
2008- 2013	Ontario Research Fund (ORF) <i>“Imaging for Cardiovascular Therapeutics”</i> P.I.: G. Wright <b>R. deKemp - UOHI Site P.I. “Molecular Imaging”</b>	\$14,500,000 <b>\$1,500,000</b>

INTERNAL RESEARCH FUNDING : past 7 years only, by year (university funds, SSHRC minor grants awarded through the university, etc.)

YEAR	SOURCE	AMOUNT
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1996	University of Ottawa Heart Institute	\$25,000 (Start-up Funds)
2003	CIHR/Carleton University <ul style="list-style-type: none"> <li>• <i>Wavelet denoising</i> with A. Cuhadar</li> </ul>	\$10,000
2000-date	University of Ottawa Heart Institute <ul style="list-style-type: none"> <li>• <i>Graduate student travel awards</i></li> </ul>	\$10,000 (approx)

j) **PUBLICATIONS:** The Publications should be listed in the categories shown below and include the following information: books authored, books edited (a list of the chapters contributed by the editor must follow each title), chapters in books (other than those listed in the above category), papers in refereed journals, papers in refereed conference proceedings, major invited contributions and/or technical reports, abstracts and/or papers read, and others. Please give full citation, including page numbers for books, chapters and journal articles and names of authors in the order in which they appear on the publication. Publications submitted, but not yet accepted, must be listed separately within the various categories.

1) Life-time summary (count) according to the following categories:

- Chapters in books .....	6
- Papers in <u>refereed</u> journals .....	54 (+2 submitted)
- Conference proceedings. ....	30 (+0 submitted)
- Major invited contributions and/or technical reports .....	12
- Abstracts and/or papers read.....	124



### **Published Book Chapters**

1. **deKemp RA**, Jones WF, Beanlands RS, Nahmias C. Design and Performance of 3D Single Photon Transmission Measurement on a Positron Tomograph with Continuously Rotating Detectors, in “Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine”. Grangeat P, Amans J-L (eds), Kluwer Academic Publishers, Dordrecht, 1996, p.245-254.
2. Tamaki N, Ruddy TD, **deKemp R**, Beanlands RS. Myocardial Perfusion Imaging, in “Principles and Practice of Positron Emission Tomography”. Wahl R (ed), Lippincott Williams & Wilkins 2002.
3. Wassenaar R, Beanlands RS, Ruddy TD, **deKemp RA**. 3D Cardiac PET Imaging, in “Research Advances in Nuclear Medicine”. R.Mohan (ed), Global Research Network, 2002, p.51-60.
4. Yoshinaga, Tamaki N, Ruddy TD, **deKemp R**, Beanlands RS. Myocardial Perfusion Imaging, in “Principles and Practice of Positron Emission Tomography” 2<sup>nd</sup> Edition. Wahl R (ed), Lippincott Williams & Wilkins 2008, chapter 11.2
5. Wells RG, **deKemp RA**, Beanlands RSB. Positron Emission Tomography, in “Nuclear Cardiology Technical Applications” Heller, Mann, Hendel (eds), 2008 (In press).
6. Ziadi, deKemp, Beanlands. Cardiac PET Imaging, in “Nuclear Cardiology” Zaret, Beller (eds), 2008 (in press).

### **Published Refereed Papers**

1. D.C.Archer,C.L.Coblentz,**R.A.deKemp**,C.Nahmias,G.Norman,Automated In-Vivo Quantification of Emphysema. Radiology 1993; 18:835-838.
2. **R.deKemp**,C.Nahmias. Attenuation Correction in PET using Single Photon Transmission Measurement. Medical Physics 1994; 21:771-778.
3. **R.A.deKemp**,C.Nahmias. Automated Determination of the Myocardial Long Axis in Cardiac Positron Emission Tomography. Physiol. Meas. 1996; 17:95-108.
4. R.S.B. Beanlands, T.D.Ruddy, E.Harmsen, **R.A.deKemp**, J.Veinot, N.G. Hartman. Myocardial kinetics of technetium-99m teboroxime in the presence of postischemic injury, necrosis and low flow reperfusion. J.Am.Coll.Cardiol. 1996;28:487-494.
5. C.C.Watson, D.Newport, M.E.Casey, **R.A.deKemp**, R.S.Beanlands, Evaluation of Simulation-Based Scatter Correction for 3-D PET Cardiac Imaging. IEEE Trans.Nucl.Sci 1997;44:90-97.
6. R.S.B.Beanlands, **R.A.deKemp**, A.Scheffel, C.Nahmias, E.S.Garnett, G.Coates, E.Fallen. Can N-13-ammonia kinetic modeling define myocardial viability independent of F-18 fluorodeoxyglucose? J.Am Coll.Cardiol. 1997;29(3):537-543.
7. R.S.B.Beanlands, **R.A.deKemp**, S.Smith, H.Johansen, T.D.Ruddy. F-18- Fluorodeoxyglucose PET Imaging Alters Clinical Decision Making in Patients with Impaired Ventricular Function. Am.J.Cardiol. 1997;79:1092-1095.
8. Beanlands RSB, Hendry PJ, Masters RG, **deKemp RA**, Woodend K, Ruddy TD. Delay in revascularization is associated with increased mortality rate in patients with severe LV dysfunction and viable myocardium on <sup>18</sup>FDG PET imaging. Circulation 1998;98:II51-56.
9. Alvarez-Diez TM, **deKemp R**, Beanlands R, Vincent J. Manufacture of strontium-82/rubidium-82 generators and quality control of rubidium-82 chloride for myocardial perfusion imaging in patients using positron emission tomography. Appl.Radiat.Isot. 1999;50:1015-1023.
10. Ruddy TD, **deKemp RA**, Beanlands RSB. (Review) Evaluation of Myocardial Perfusion and Metabolism with Positron Emission Tomography. CMAJ 1999;161:1131.
11. Abramson BL, Ruddy TD, **deKemp RA**, Laramée L, Marquis JF, Aubrey B, Aung M, Beanlands RS. Stress FDG PET as a new approach to the diagnosis of coronary disease in women.

- J.Nucl.Cardiol. 2000;7:205-212.
12. **deKemp RA**, Ruddy TD, Hewitt T, Dalipaj MM, Aung MT, Beanlands RSB. Detection of Serial Changes in Absolute Myocardial Perfusion with <sup>82</sup>Rb PET. J.Nucl.Med. 2000;41:1426-35.
  13. Beanlands R, Nahmias C, Gordon E, Coates G, **deKemp R**, Firnau G, Fallen E. The effects of beta-blockade on oxidative metabolism and the metabolic cost of ventricular work in patients with LV dysfunction. A double-blind placebo-controlled PET study. Circulation 2000;102:2070-75.
  14. Scott NS, Le May M, Ruddy TD, **deKemp R**, Beanlands RS. Primary stent implantation for acute MI achieves greater myocardial perfusion measured by Rb-82 PET than rt-PA. Am.J.Cardiol. 2001;88:886-889.
  15. Vitale G, **deKemp R**, Ruddy TD, Beanlands RS. Myocardial glucose utilization and the optimization of F-18-FDG PET imaging in patients with NIDDM, CAD and LV dysfunction. J.Nucl.Med 2001;42:1730-36.
  16. **deKemp R**, Lecomte R. (Review) Positron Emission Tomography for Molecular Imaging in Heart Disease. Physics in Canada 2002;58(2):103-107.
  17. Beanlands RSB, Nichol G, **deKemp R**, Ruddy TD, Iwanochko et al. PET and recovery following revascularization (PARR-1): The importance of scar and the development of a prediction rule for the degree of recovery of LV function. J.Am.Coll.Cardiol. 2002;40(10):1735-43.
  18. Ukkonen H, Beanlands RS, Burwash IG, **de Kemp RA**, Nahmias C, Fallen E, Hill MR, Tang AS, Effect of cardiac resynchronization on myocardial efficiency and regional oxidative metabolism. Circulation 2003;107(1):28-31,  
and Ukkonen H, Beanlands RSB, Burwash I, **deKemp RA**, Nahmias C, Fallen E, Hill MRS, Tang ASL. Cardiac resynchronization and myocardial oxidative metabolism – Response to Editorial. Circulation 2003;107:220e.
  19. Saab, **deKemp RA**, Ukkonen, Ruddy TD, Germano G, Beanlands RSB. Gated 18-FDG PET: Determination of global and regional LV function and myocardial tissue characterization. J.Nucl.Cardiol. 2003;10:297-303.
  20. Beauchesne L, **deKemp RA**, Chan KL, Burwash IG. Temporal variations in effective orifice area during ejection in patients with valvular aortic stenosis. J.Am.Soc.Echocardiogr. 2003;16(9):958-964.
  21. Beanlands R, Nichol G, Ruddy TD, **deKemp RA**, Hendry P, Humen D, Racine N, Ross H, Benard F, Coates G, Iwanochko R, Fallen E, Wells G, and the PARR-2 Investigators. Design and Rationale of a Clinical Trial to Evaluate Outcome and Cost-Effectiveness of an FDG PET-Guided Approach to Management of Patients with Coronary Disease and Severe LV Dysfunction. (PARR Phase 2). Controlled Clinical Trials 2003;24:776-794.
  22. Wassenaar R, Beanlands RSB, **deKemp RA**. Phantom Studies Investigating Extravascular Density Imaging for Partial Volume Correction of 3D PET <sup>18</sup>FDG Studies. IEEE Trans.Nucl.Sci. 2004;51:68-71.
  23. Epstein N, Benelfassi A, Beanlands R, **deKemp R**. A rubidium-82 infusion system for quantitative perfusion imaging with 3D PET. Appl.Radiat.Isot. 2004;60:921-27.
  24. Seth R, **deKemp RA**, Ruddy TD, Kitsikis A, Hart R, Beauschene L, Williams K, Davies RA, Labinaz M, Beanlands RSB. Potential utility of perfusion quantification using rubidium-82 PET in patients with three-vessel coronary artery disease measured using rubidium-82 PET. J.Nucl.Cardiol. 2004;11:440-449.
  25. Westerman E, Aubrey B, Gauthier D, Aung M, **deKemp RA**, Ruddy TD, Davies RA, Beanlands RSB. Positron Emission Tomography: A study of PET test-related anxiety. J Cardiovasc Nursing 2004;14:42-48.
  26. Ananthasubramaniam K, Chow BJW, **deKemp RA**, Davies RA, Ruddy TD, Beanlands RSB.

- Does Electrocardiographic Q Wave Burden Predict the Extent of Scar or Hibernating Myocardium as Quantified by Positron Emission Tomography? Can J Cardiol 2005;21(1):51-56.
27. Yoshinaga K, Chow B, **deKemp RA**, Thorn S, Davies R, Ruddy T, DaSilva J, Beanlands R. Application of Cardiac Molecular Imaging Using PET in Evaluation of Drug and Therapeutics for Cardiovascular Disorders. Curr Pharm Design. 2005;11(7):903-32. Review.
  28. Mielniczuk L., **deKemp R**, Dennie C, Yoshinaga K, Burwash I, Benard F, Haddad H, Beanlands DS, Beanlands RSB. FDG PET in the Diagnosis and Management of a Patient with Aortitis with Pulmonary Involvement. Circulation 2005;111(22):e375-6.
  29. Chow BJW, Ruddy TD, Ananthasubramiam K, **deKemp RA**, Dalipaj M, Beanlands RSB. Comparison of Treadmill Exercise Versus Dipyridamole Stress with <sup>82</sup>Rb PET Myocardial Perfusion Imaging. J.Am.Coll.Cardiol. 2005;45(8):1227-34.
  30. Ling M, Ukkonen H, Ruddy T, **de Kemp R**, Duchesne L, Higginson L, Williams KP, McPherson R, Beanlands R. Early Improvement in Myocardial Perfusion and Flow-Mediated Dilatation with Simvastatin in Patients with Coronary Artery Disease. Am Heart J. 2005 Jun;149(6):1137
  31. Chow BJ, Wong JW, Yoshinaga K, Ruddy TD, Williams K, **deKemp RA**, DaSilva J, Beanlands RS. Prognostic significance of dipyridamole-induced ST depression in patients with normal <sup>82</sup>Rb PET myocardial perfusion imaging. J Nucl Med. 2005;46(7):1095-101.
  32. Luisi AJ Jr, Suzuki G, **dekemp R**, Haka MS, Toorongian SA, Canty JM Jr, Fallavollita JA. Regional <sup>11</sup>C-Hydroxyephedrine Retention in Hibernating Myocardium: Chronic Inhomogeneity of Sympathetic Innervation in the Absence of Infarction. J Nucl Med. 2005;46(8):1368-74.
  33. Wassenaar R, **deKemp RA**. A Novel Method for Detector Quality Assurance on the ECAT ART Partial-Ring PET scanner. IEEE Trans.Nucl.Sci 2006;53(1):108-112.
  34. Wassenaar R, **deKemp RA**. Characterization of PET Partial Volume Corrections for Variable Myocardial Wall Thicknesses. IEEE Trans.Nucl.Sci 2006;53(1):175-180.
  35. Sprague K, Drangova M, Lehmann G, Slomka P, Levine D, Chow B, **deKemp RA**. Coronary x-ray angiographic reconstruction and image orientation. Medical Physics 2006;33(3):707-718.
  36. Fallavollita JA, Luisi AJ Jr, Michalek SM, Valverde AM, **deKemp RA**, Haka MS, Hutson AD, Canty JM Jr. Prediction of Arrhythmic Events with Positron Emission Tomography: PAREPET study design and methods. Contemp Clin Trials. 2006 Apr 27;
  37. Yoshinaga K, Beanlands RS, **deKemp RA**, Lortie M, Morin J, Aung M, McKelvie R, Davies RF. Effect of Exercise Training on Myocardial Blood Flow in Patients with stable Coronary Artery Disease. Am Heart J 2006 151(6):1324-28.
  38. Yoshinaga K, Chow BJW, **deKemp RA**, Williams K, Garrard L, Szeto ALT, Aung M, Davies RA, Ruddy TD, Beanlands R. What is the prognostic value with rubidium-82 perfusion positron emission tomography imaging? J Am Coll Cardiol 2006;48(5):1029-39.
  39. Chow B, Beanlands R, Lee A, DaSilva J, **deKemp R**, Alkahatani A, Ruddy T. Treadmill exercise produces larger perfusion defects than dipyridamole stress with N-13 Ammonia PET. J Am Coll Cardiol 2006;47(2):411-16.
  40. Thompson K, Saab G, Birnie D, Chow BJW, Ukkonen H, Ananthasubraminiam K, **deKemp RA**, Garrard L, Ruddy TD, DaSilva JN, Beanlands RS. Is Septal Glucose Metabolism Altered in Patients with Left Bundle Branch Block and Ischemic Cardiomyopathy? J Nucl Med 2006;47(11):1763-68.
  41. Yoshinaga K, Burwash IG, Leech JA, Haddad H, Johnson CB, **deKemp RA**, Garrard L, Chen L, K, DaSilva JN, Beanlands RS. Effect of Continuous Positive Airway Pressure on Myocardial in Patients with Heart Failure and Obstructive Sleep Apnea. J Am Coll Cardiol 2007;49(4):450-58.
  42. Mahmoud S, Beanlands RS, **deKemp R**, Chan K-W, Beauchesne LM, Native anomalous left coronary artery from the pulmonary artery in an adult: Evidence of impaired coronary flow reserve by rubidium-82 positron emission tomography quantification. Cdn J Cardiol 2006;22(12):1069-70.

43. Klein R, Adler A, Beanlands RS, **deKemp RA**. Precision Control of Eluted Activity from a Sr/Rb Generator for Cardiac Perfusion Imaging with 3D PET. *Phys Med Biol* 2007;52:659-673.
44. Kenk M, Greene M, **deKemp RA**, Lortie M, Thorn S, Beanlands RS, DaSilva JN. In vivo selective binding of (R)-[11C]rolipram to phosphodiesterase-4 provides the basis for studying intracellular cAMP signaling in the myocardium and other peripheral tissues. *Nuclear Medicine & Biology* 2007;34:71-77.
45. Chow BW, Dennie C, Hoffmann U, **deKemp R**, Ruddy T, Beanlands RS. Comparison of computed tomography angiography versus Rubidium-82 PET for the detection of patients with anatomical coronary artery disease. *Can J Cardiol* 2007;23(10):801-7.
46. **deKemp R**, Yoshinaga K, Beanlands RS. Will 3-dimensional PET enable routine quantification of myocardial blood flow. *J Nucl Cardiol* 2007;14(3):380-397.
47. Lortie M, Beanlands RSB, Yoshinaga K, Klein R, DaSilva JN, **deKemp RA**. Quantification of Myocardial Blood Flow with <sup>82</sup>Rb Dynamic PET Imaging. *Eur J Nucl Med Molec Imag* 2007;34:1765-1774.
48. Johnson CB, Beanlands RS, Yoshinaga K, Haddad J, Leech J, **deKemp R**, Burwash IG. Acute and chronic effects of continuous positive airway pressure therapy on left ventricular systolic and diastolic function in patients with obstructive sleep apnea and congestive heart failure. *Can J Cardiol* 2007.
49. Ruel M, Beanlands R, Lortie M, Chan V, **deKemp R**, Suuronen E, Rubens FD, DaSilva J, Sellke FW, Stewart DJ, Mesana TG. Concomitant treatment with oral L-arginine improves the efficacy of surgical angiogenesis in patients with severe diffuse coronary artery disease: The endothelial modulation in angiogenic therapy (EMAT) randomized controlled trial. *J Thorac Cardiovasc Surg* 2008 (in press).
50. Beanlands RSB, Nichol G, Huszti E, Humen D, Racine N, Freeman M, Gulenchyn KY, Garrard L, **deKemp R**, Gao A, Ruddy TD, Benard F, Lamy A, Iwanochko RM, and the PARR2 investigators. F-18-fluorodeoxyglucose PET imaging assisted management of patients with severe LV dysfunction and suspected CAD. A randomized controlled trial (PARR-2). *J Am Coll Cardiol* 2007;50(20):2002-12.
51. Kenk M, Greene M, Lortie M, **deKemp RA**, Beanlands RS, DaSilva JN. Use of a column-switching high-performance liquid chromatography method to assess the presence of specific binding of (R)- and (S)-[(11)C]rolipram and their labeled metabolites to the phosphodiesterase-4 enzyme in rat plasma and tissues. *Nucl Med Biol*. 2008 May;35(4):515-21.
52. Zhang Y, Ruel M, Beanlands RS, **deKemp RA**, Suuronen EJ, DaSilva JN. Tracking Stem Cell Therapy in the Myocardium: Applications of Positron Emission Tomography. *Current Pharmaceutical Design* 2008;14(36):3835-53
53. Burwash I. G., Lortie M, Pibarot P, **deKemp R**, Graf S, Mundigler G, Khorsand A, Blais C, Baumgartner H, Dumesnil J. G, Hachicha Z, DaSilva J, and Beanlands R. Myocardial Blood Flow in Patients with Low Flow, Low Gradient Aortic Stenosis: Differences Between True and Pseudo-Severe Aortic Stenosis. *Heart* 2008; 94(12):1627-33
54. Ukkonen H, Burwash I, **deKemp RA**, Haddad H, Dafoe W, Yoshinaga K, Davies RA, DaSilva JN, Beanlands RS. In Ventilatory Efficiency (VE/VCO<sub>2</sub> Slope) with Exercise Associated with Right Ventricular Oxidative Metabolism in Patients with Congestive Heart Failure. Submitted to *Eur J Heart Failure* 2008; Nov;10(11):1117-22
55. Zhang Y, Thorn S, DaSilva JN, Lamoureux M, **deKemp RA**, Beanlands RS, Ruel M, Suuronen EJ. Collagen-Based Matrices Improve the Delivery of Transplanted Circulating Progenitor Cells: Development and Demonstration by Ex Vivo Radionuclide Cell Labeling and In Vivo Tracking With Positron-Emission Tomography. *Circ Cardiovasc Imaging*. 2008;1:197-204
56. Manabe O, Yoshinaga K, Katoh C, Naya M, **deKemp RA**, Tamaki N. Repeatability of rest and

- hyperemic myocardial blood flow measurements with  $^{82}\text{Rb}$  dynamic PET. *J Nucl Med.* 2009 Jan;50(1):68-71
57. Chow B, Al-Shammeri OM, Beanlands R, Chen L, **deKemp RA**, DaSilva J, Ruddy T. Prognostic Value of Treadmill Exercise and Dobutamine Stress Positron Emission Tomography *Can J Cardiol.* 2009 (in press)
  58. D'Egidio G, Nichol G, Williams K, Guo A, Garrard L, **deKemp R**, Ruddy TD, DaSilva J, Humen D, Gulenchyn K, Freeman M, Racine N, Benard F, Hendry P, Beanlands R; Identification of High Risk Patients with Ischemic Cardiomyopathy: Increasing Benefit from Revascularization is Associated with Increasing Amounts of Hibernating Myocardium. A substudy of the PARR 2 trial. *JACC Imaging* 2009 (in press)
  59. Ziadi M, **deKemp R**, Beanlands R. Quantification of Myocardial Perfusion: What Will It Take to Make It Prime time? *Current Cardiovascular Imaging Reports.* 2009 (in press)
  60. JA Fallavollita, MD Banas, G Suzuki, **RA deKemp**, M Sajjad, MS Haka, JM Canty.  $^{11}\text{C}$ -meta-Hydroxyephedrine Defects Persist Despite Functional Improvement in Hibernating Myocardium. *J.Nucl.Med* 2009 (in press).

### Manuscripts Submitted

61. Ha A, Renaud J, Abraham A, DaSilva J, Beanlands RS, Gollob M. Glucose uptake is reduced in PRKAG2 mutation metabolic cardiomyopathy. *Circulation* 2008.
62. Abraham A, deKemp R, Beanlands RS, Chow BJ. RV-LV uptake ratio.

### Manuscripts in Preparation

63. Wassenaar RW, Beanlands RSB, Ruddy TD, DaSilva JN, Ascah KJ, **deKemp RA**. Extravascular Density Imaging with Endocardial Polar map Sampling for Regional Partial Volume Correction in FDG PET Viability Imaging – A Canine Reproducibility Study.
64. **deKemp RA**, Klein R, Beauchesne L, Ruddy TD, Beanlands RSB. Direct Paired Comparison of Serial Myocardial Perfusion Images to Monitor Therapy in Humans.
65. Beauchesne L, **deKemp RA**, Hewitt TA, Beanlands RS, Ruddy TD. Reproducibility of Measurements of Myocardial Perfusion with Positron Emission Tomography and Rubidium-82.
66. Renaud J, Lortie M, Wassenaar R, Klein R, DaSilva JN, Beanlands RS, **deKemp RA**. Quantifying the Normal Range of Myocardial Blood Flow with Rb-82 and N-13-Ammonia PET.
67. Wassenaar R, **deKemp RA**. Computer Simulations of the Extravascular Density Model for 3D Cardiac PET Partial Volume Correction.

### Conference Proceedings

1. **R.deKemp**, C.Nahmias. Deadtime Correction for Non-paralyzable Block Detectors in PET. *IEEE Engineering in Medicine and Biology Conference* 1992;5:1825-26.
2. **R.A.deKemp**, C.Nahmias, W.F.Jones. 'Singles' Attenuation Correction in Positron Tomography. *IEEE Nuclear Science Symposium and Medical Imaging Conference* 1994;4:1491-92.
3. **R.A.deKemp**, W.F.Jones, C.Nahmias, R.S.Beanlands. Design and Performance of 3D Single Photon Transmission Measurement on a Positron Tomograph with Continuously Rotating Detectors. *Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine* 1995:51-54.
4. C.C.Watson, D.Newport, M.E.Casey, **R.A.deKemp**, R.S.Beanlands, M.Schmand. Evaluation of Simulation Based Scatter Correction for 3D PET Cardiac Imaging. *IEEE Nuclear Science Symposium and Medical Imaging Conference* 1995;2:1373-77.

5. **R.A.deKemp**, R.S.Beanlands. Postinjection Attenuation Correction using Singles Transmission on a Positron Tomograph Without Interplane Septa. IEEE Nuclear Science Symposium and Medical Imaging Conference 1997;2:1695-96.
6. Golanowski L, **deKemp RA**, Beanlands RS, Ruddy TD. Variance and Covariance of  $^{82}\text{Rb}$  Kinetic Model Parameters: Computer Simulations and Dynamic PET Studies. IEEE Engineering in Medicine and Biology Society Conference 2000;2:23-28.
7. Hart R, Ruddy TD, Beanlands RS, **deKemp RA**. Sinusoidal eccentric thickening model for ECG-gated SPECT perfusion imaging. SPIE Regional Meeting on Optoelectronics, Photonics, and Imaging 2002;TD01:370-372.
8. Hart R, Ruddy TD, Beanlands RS, **deKemp RA**. Statistical parametric imaging of heart function with ECG-gated perfusion scans. SPIE Regional Meeting on Optoelectronics, Photonics, and Imaging 2002;TD01:379-382.
9. Wassenaar R, **deKemp RA**. Characterization of transmission images for use in Resolution recovery of cardiac PET imaging. SPIE Regional Meeting on Optoelectronics, Photonics, and Imaging 2002;TD01:383-385.
10. Wassenaar R, Ruddy TD, Beanlands RS, **deKemp RA**. Resolution recovery with 3D PET extravascular density imaging. SPIE Regional Meeting on Optoelectronics, Photonics, and Imaging 2002;TD01:386-389.
11. Wassenaar R, Beanlands RSB, **deKemp RA**. Phantom Studies Investigating Extravascular Density Imaging in 3D. IEEE Nuclear Science Symposium and Medical Imaging Conference 2002;2:821-824.
12. Green G, Cuhadar A, **deKemp RA**. Spatially Adaptive Wavelet Thresholding of Rubidium-82 Cardiac PET Images. IEEE Engineering in Medicine and Biology Conference 2004.
13. Klein R, Adler A, Beanlands RS, **deKemp RA**. Precision Control of Eluted Activity from a Sr/Rb Generator for Cardiac Positron Emission Tomography. IEEE Engineering in Medicine and Biology Conference 2004.
14. Wassenaar R, **deKemp RA**. A Novel Method for Detector Quality Assurance on the ECAT ART Partial-Ring PET scanner. IEEE Nuclear Science Symposium and Medical Imaging Conference 2004.
15. Wassenaar R, **deKemp RA**. Characterization of PET Partial Volume Corrections for Variable Myocardial Wall Thicknesses IEEE Nuclear Science Symposium and Medical Imaging Conference 2004.
16. Wassenaar R, **deKemp RA**. Extravascular Density Model for PET Partial Volume Correction. IEEE Nuclear Science Symposium and Medical Imaging Conference 2005.
17. Davies RW, Beanlands RS, **deKemp RA**. Quantification of Myocardial Blood Flow with N-13-Ammonia and Rb-82 PET – OSEM vs. FBP Reconstruction. IEEE Nuclear Science Symposium and Medical Imaging Conference 2005.
18. Renaud J, Lortie M, DaSilva JN, Beanlands RS, **deKemp RA**. Quantifying the Normal Range of Myocardial Blood Flow with N-13-Ammonia PET and Tracer Kinetic Modeling. IEEE Nuclear Science Symposium and Medical Imaging Conference 2005.
19. Lecomte R, **deKemp R**, Klein R, Cadorette J, Lepage MD, Robert G, Selivanov V, Bélanger F, Semmaoui H, Tétrault M-A, Viscogliosi N, Bergeron M, Lemieux F, Lemonde M-A, Fontaine R. LabPET™: A Second-Generation APD-Based Digital Scanner for High-Resolution Small Animal PET Imaging. Med Phys 2006.
20. Lecomte R, **deKemp R**, Dumouchel T, Thorn S, Cadorette J, Lapointe D, Lepage MD, Pinet M, Robert G, Selivanov V, Bélanger F, Lemieux F, Semmaoui H, Tétrault M-A, Viscogliosi N, Bergeron M, Fontaine R. Initial Results with LabPET, a Second-Generation APD-Based Digital PET Scanner for High-Performance Pre-Clinical Molecular Imaging. IEEE NSS&MIC 2006

21. Lortie M, Kenk M, Thorn S, Beanlands R, DaSilva J, **deKemp R**. Kinetics of (R)-[11C]rolipram and (S)-[11C]rolipram in the dog heart: Investigation of four compartment models. IEEE NSS&MIC 2006
22. Klein R, Lortie M, Beanlands RS, **deKemp RA**. Fully automated software for polar-map registration and sampling from PET images. IEEE NSS&MIC 2006.
23. Dumouchel T, Selivanov V, Cadorette J, Lecomte R, **deKemp RA**. MLEM Reconstructed Image Resolution from the LabPET Animal Scanner. IEEE NSS&MIC 2006;6:3388-3391.
24. **deKemp RA**, Klein R, Lortie M, Renaud J, Beanlands RS. Constant-activity-rate slow bolus infusions for improved quantification of myocardial blood flow with 82-Rb and 3D PET. IEEE NSS&MIC 2006
25. Renaud J, Lortie M, DaSilva J, Beanlands RS, **deKemp RA**. Quantification of the Normal Range of Myocardial Blood Flow and Flow Reserve with <sup>82</sup>Rubidium Versus <sup>13</sup>N-Ammonia PET. IEEE NSS&MIC 2007
26. Klein R, Bentourkia M, Beanlands RS, Adler A, **deKemp RA**. A Minimal Factor Overlap Method for Resolving Ambiguity in Factor Analysis of Dynamic Cardiac PET. IEEE NSS&MIC 2007
27. Bergeron M, Cadorette J, Lepage MD, Robert G, Selivanov V, Tétrault M-A, Viscogliosi N, Fontaine R, Dumouchel T, Thorn S, DaSilva J, **deKemp R**, Lecomte R. Performance Evaluation of the LabPET™ APD-based Digital PET Scanner. IEEE NSS&MIC 2007.
28. Shkvorets M, **deKemp RA**, Wells RG. Respiratory-Motion Errors in Quantitative Myocardial Perfusion with PET/CT. IEEE NSS&MIC 2007
29. Klein R, Beanlands RS, Adler A, deKemp R. Model-Based Factor Analysis of Dynamic Sequences of Cardiac Positron Emission Tomography. IEEE NSS&MIC 2008.
30. deKemp RA, Klein R, Renaud J, Alghamdi A, Lortie M, DaSilva J, Beanlands RS. 3D Listmode Cardiac PET for Simultaneous Quantification of Myocardial Blood Flow and Ventricular Function. IEEE NSS&MIC 2008.

### Conference Papers Submitted

### Invited Contributions and Technical Reports

1. Alvarez-Diez T, Ruddy TD, **deKemp RA**. <sup>82</sup>RbCl – Radiodiagnostic Agent, Report to Radiation Safety Committee, Ottawa Civic Hospital, 1997.
2. **deKemp RA**. <sup>82</sup>RbCl – Infusion System, Report to Medical Devices Committee, University of Ottawa Heart Institute, 1997.
5. **deKemp RA**. Cardiac Positron Emission Tomography. Canadian Medical Physics Newsletter. Interactions 2000;46(4):135.
3. **deKemp RA**. ECG-Gating on the ECAT ART, Report to CTI PET Systems, Knoxville, TN, 2000.
4. **deKemp RA**. Standards for Oncology PET Imaging in Ontario, Report to the Medical Secretariat, Ontario Ministry of Health and Long-term Care, 2003.
5. **deKemp RA**. Oncology PET Scanner Technical Evaluations, Report to Division of Nuclear Medicine, Department of Medicine, The Ottawa Hospital, 2003.
6. **deKemp RA**. MyoPc© – Dynamic PET Processing/Analysis Software and Tutorials. University of Ottawa Heart Institute, National Cardiac PET Centre, 2003.
7. Klein R, **deKemp RA**. RbES© – Rb-82 Elution System: User Manual. University of Ottawa Heart Institute, National Cardiac PET Centre, 2003

8. Firnau G, **deKemp RA**. Chemistry and Manufacturing of [<sup>82</sup>Rb]Rubidium Chloride Injection. Quality Information Summary: Positron Emitting Radiopharmaceuticals. Part2 in each of 13 Clinical Trial Applications (CTA) registered with Biologics and Genetic Therapies Directorate, Health Canada. 2003.
9. **deKemp RA**. PET Imaging Standards for OCOG Clinical Trials. Adopted by Clinical Trials Methodology Group, Ontario Clinical Oncology Group, Hamilton, ON, 2004.
10. **deKemp RA**. Performance Testing of the ECAT ART+ (P39 Vision 3000) at St. Joseph's Healthcare, Hamilton, ON, 2004.
11. Klein R, **deKemp RA**. RbES© – Rb-82 Elution System: Hardware Manual. University of Ottawa Heart Institute, National Cardiac PET Centre, 2005
12. Klein R, **deKemp RA**. RbES© – Rb-82 Elution System: Software Manual. University of Ottawa Heart Institute, National Cardiac PET Centre, 2005
13. Renaud J, deKemp RA, FlowQuant user manual and tutorial. University of Ottawa Heart Institute, National Cardiac PET Centre, 2009.

### **Technology Transfer, Copyrights and Patents**

1. **deKemp RA**. “Rb-82 Elution System” sale to General Electric Medical Systems Canada, Mississauga, ON, 2002.
2. **deKemp RA**, Klein R, Epstein N. “RbES© – Rb-82 Elution System”. Canadian Intellectual Property Office, Copyright 2003.
3. **deKemp RA**. “MyoPC© – Image Analysis Software for Dynamic Cardiac Positron Emission Tomography (PET)”. Canadian Intellectual Property Office, Copyright 2004.
4. **deKemp RA**, Wells RG. “82Sr/82Rb (rubidium) Generator Technology”, Ottawa Heart Institute Research Corporation, St. Joseph's Health Care London, and Lawson Health Research Institute, London, ON, Technical Transfer Agreement 2004.
5. **deKemp RA**. “FlowTrace-Rb™ Rubidium-82 Generator for PET perfusion imaging”. Trademark applications in Canada, U.S. and Europe. 2005.
6. **deKemp RA**. “A Rubidium Generator for Cardiac Perfusion Imaging and Method of Making and Maintaining Same”. Patent and PCT applications filed 2005.  
\* *Patents pending in U.S., Canada, and 31 PCT countries, 2008.*  
\* *Exclusive license agreement with DRAXIMAGE specialty pharmaceuticals, Montreal, QC, Nov 2007*
7. **deKemp RA**, Klein R. “Rubidium Elution System Control”. Patent and PCT applications filed 2006.  
\* *Patents pending in U.S., Canada, and 31 PCT countries, 2008.*  
\* *Exclusive license agreement with DRAXIMAGE specialty pharmaceuticals, Montreal, QC, Nov 2007*
8. **deKemp RA**, Klein R, Renaud J, Lortie M. “FlowQuant© – Image Analysis Software for Cardiac Positron Emission Tomography (PET)”. Canadian Intellectual Property Office, Copyright 2008.  
\* *Distribution agreement with HERMES Medical Solutions, Montreal, QC, June 2008*

### **Abstracts**

1. D.Archer,**R.deKemp**,C.Nahmias,C.L.Coblentz. Automated Quantification of Emphysema in CT Studies of the Lung. Canadian Assoc of Radiologists Annual Meeting, Scientific Paper, June



- 1991.
2. C.Nahmias, **R.deKemp**, D.B.Kenyon. Interplane Septa in Positron Tomography. Canadian Organization of Medical Physicists, Radiation Protection Symposium and Joint Conference, Scientific Presentation, June 1991.
  3. B.Archer, C.Nahmias, **R.deKemp**, C.L.Coblentz, PC Physics Tutor, Radiological Society of North America, 77th Scientific Assembly and Annual Meeting, InfoRAD Exhibit, Dec 1991. Radiology v181(P) p.369.
  4. D.Archer,**R.deKemp**,C.L.Coblentz,C.Nahmias, Automated Quantification of Emphysema in CT Studies of the Lung. Radiology 1991; v181(P) p.181.
  5. **R.deKemp**, C.Nahmias, D.Archer, C.L.Coblentz, Automated Quantification of Emphysema in CT Studies of the Lung, Radiological Society of North America, 77<sup>th</sup> Scientific Assembly and Annual Meeting, Scientific Exhibit, Dec 1991. Radiology v181(P) p.334.  
\*Awarded RSNA Certificate of Merit.
  6. D.B.Kenyon, **R.deKemp**, C.Coblentz, G.W.Stevenson, C.Nahmias, The MUMC Workstation: An inexpensive image display and manipulation workstation for the Department of Radiology. Canadian Association of Radiologists Annual Meeting, 1992.
  7. **R.deKemp**,C.Nahmias, A Novel Transmission Measurement Technique for PET. American Association of Physicists in Medicine, 34th Annual Meeting and Technical Exhibition, Aug 1992. Medical Physics v19 n3 p.845.
  8. C.Nahmias, T.R.Fenton,G.W.Stevenson,S.A.Miller,D.B.Kenyon, **R.A.deKemp**. Implementation of an Image Data Management and Communication System in Diagnostic Imaging. Radiological Society of North America, 78th Scientific Assembly and Annual Meeting, Scientific Presentation, Dec 1991. Radiology v185(P).
  9. R.S. Beanlands **R.deKemp**,A.Scheffel, C.Nahmias, O.Muzik, E.S.Garnett, G.Coates, E.Fallen, Myocardial Viability Determination Using N-13 Ammonia Kinetics and PET. Circulation 1993;88(4)Part 2:1061.
  10. R. Beanlands, **R.deKemp**,A.Scheffel, C.Nahmias, O.Muzik, E.S.Garnett, G.Coates, E.Fallen. Can N-13 Ammonia Kinetic Modelling Define Myocardial Viability Independent of F-18 Fluorodeoxyglucose? Can J Cardiology 1993;9(SupplE):100E.
  11. Beanlands R, Keon W, Beanlands DS, Marcel Y, Gulenchyn K, Ruddy T, Davies RA, Chamberlain M, Hartman N, McKee B, Smith S, McPherson R, Davies RF, Hendry P, Masters R, Fallen E, Nahmias C, Coates G, **deKemp R**, Firnau G, Culbert P, Garnet ES, Smith Ian. Applications of Cardiac PET in Canada. University of Ottawa Heart Institute in collaboration with the National Research Council of Canada and McMaster University Medical Centre. Ottawa life Sciences Meeting, October 1994.
  12. R.S.Beanlands,G.Coates,A.Scheffel,**R.deKemp**,C.Nahmias, E.Fallen, Is N-13-Ammonia/F-18-Fluorodeoxyglucose PET a Reproducible Approach for Defining Myocardial Viability? Can J Cardiol 1994;10 Suppl C:102C.
  13. **R.A.deKemp**, C. Nahmias,W.Digby, R.S.Beanlands, Performance Characteristics of a Continuous Rotational Positron Tomograph for Cardiac Imaging. J.Nucl.Med. 1995,36:174P.
  14. R.S.B.Beanlands,**R.A.deKemp**,P.Culbert,S.Smith,P.Hendry,R.A.Davies, P.Bedard, C.Nahmias, G.Fimau, B.Bowen, G.Coates, R.Chirakal, E.Fallen,T.D.Ruddy, Myocardial Glucose Metabolism in Severe Ischemic Left Ventricular Dysfunction. Can J Cardiol 1995,11:104E.
  15. Ruddy TD, **deKemp RA**, Dalipaj MM, Aung MT, Vincent JS, Beanlands RS. Quantification of myocardial perfusion with Rb-82 and PET in myocardial infarction. Can.J.Cardiol. 1996,12:155E
  16. Chauhan VS, Ruddy TD, **deKemp R**, Aung M, Aubrey R, Beanlands RS. Prediction of ventricular function recovery after revascularization in patients with glucose intolerance using FDG PET imaging. Can. J. Cardiol. 1996,12:116E
  17. Abramson B, Ruddy TD, **deKemp RA**, Laramée L, Aubrey B, Aung M, Beanlands RS. Stress

- FDG PET Imaging as a new approach to the diagnosis of CAD in women. Can.J.Cardiol. 1996,12:156E and J Am Coll Cardiol 1997;29(2) Suppl A:800-1.
18. V.I.Gunther, **R.deKemp**, T.R.Ruddy, M.T.Aung, B.A.Aubrey, P.A.Culbert,R.S.Beanlands, Quantitative FDG PET Detects Ischemia in Myocardium with Normal Relative Perfusion but Significant Coronary Stenosis, J.Nucl.Med. 1996,37P. and Can.J.Cardiol. 1996,12:117E
  19. R.S.B.Beanlands, **R.A.deKemp**, S.Smith, M.T.Aung, B.A.Aubrey, H.Johansen, T.D.Ruddy. FDG PET Alters Clinical Decision Making in Patients with Ventricular Dysfunction. Can.J.Cardiol. 1996,12:100E
  20. Ruddy TD, **deKemp RA**, Dalipaj MM, Aung MT, Vincent JS, Beanlands RS. Effect of Reperfusion following myocardial infarction on measurement of myocardial perfusion with Rb-82 and PET Imaging. J Nucl Cardiol 1997;4:64.5;S68.
  21. Beanlands RS, **deKemp RA**, Smith S, Aung M, Aubrey B, Davies RA, Ruddy TD. Directing therapy in patients with severe ventricular dysfunction using FDG PET. J Nucl Cardiol 1997;4:12.4;S18.
  22. **deKemp RA**, Watson CC, Jones WF, Beanlands RS. Clinical Validation of Singles Transmission for Attenuation Correction in PET. J.Nucl.Med. 1997,38P.
  23. Johnson CB, Ruddy TD, **deKemp RA**, Dalipaj MM, Aubrey BA, Smith SJ, Woodend AK, Beanlands RS. Heterogeneous effects of nitrates on perfusion and function in patients with severe LV dysfunction evaluated with sestamibi imaging. J Nucl Med 1997;38:75P.
  24. Beanlands RS, Hendry P, Masters R, **deKemp RA**, Aubrey BA, Aung MT, Ruddy TD. Delay in revascularization is associated with increased mortality in patients with severe LV dysfunction and viable myocardium on FDG PET imaging. Can J Cardiol 1997;13:116C and Circulation 1997;96:I-2425.
  25. Beanlands RSB, Nichol G, Visentin DE, Smith S, **deKemp RA**, Hendry P, Masters R, Davies RA, Aung MT, Aubrey BA, Ruddy TD. Potential for cost savings with FDG PET imaging in patients being considered for cardiac transplantation. Can J Cardiol 1997;13:99C and Circulation 1997;96:I-71.
  26. Ruddy TD, **deKemp RA**, Dalipaj MM, Aung MT, Golanowski LN, Beanlands RSB. Detection of reperfusion using quantitative measurement of myocardial perfusion with PET Rb-82 imaging. Circulation 1997;96(8):I-3491 and Can J Cardiol 1997; Vol 13;Suppl C:95-95C.
  27. Johnson CB, Ruddy TD, **deKemp RA**, Smith SJ, Dalipaj MM, Aung MT, Aubrey BA, Beanlands RSB. Improved metabolism and function in viable ischemic myocardium with nitrate therapy. Can J Cardiol 1997; Vol 13;Suppl C:93-95C.
  28. Alvarez-Diez T, **deKemp R**, Ruddy T, Vincent J, Aung M, Beanlands R. Manufacturing of Sr-82/Rb-82 Generators for Myocardial Imaging. Conjoint National Scientific Meeting, CANM/SNMC/CARS Nov 1997.
  29. **deKemp RA**, Ruddy TD, Safa B, Dalipaj MM, Alvarez-Diez T, Beanlands RS. Paired Comparison of myocardial perfusion images to evaluate the treatment or progression of disease. Eur J Nucl Med 1998;25(8):938.
  30. Vitale G, Ruddy TD, **deKemp RA**, Golanowski LN, Aung MT, Aubrey BA, Beanlands RSB. Myocardial glucose utilization and the optimization of F-18-FDG PET imaging in patients with NIDDM, CAD and LV dysfunction. J Am Coll Cardiol 1998.
  31. Beanlands RSB, Nahmias C, Gordon E, Coates G, Woodcock G, Thompson M, Aubrey B, **deKemp R**, Fallen E. Does the patient with severe LV dysfunction have impaired cardiac efficiency? Circulation 1998;98:I-279 and Can J Cardiol 1998;14:106F.

32. Vitale G, Ruddy TD, **deKemp RA**, Golanowski LN, Aung MT, Aubrey BA, Beanlands RSB. Myocardial glucose utilization and the optimization of F-18 FDG PET imaging in patients with NIDDM, CAD and LV dysfunction. Can J Cardiol 1998;14:125F.
33. Sekar N, LeMay MR, Ruddy TD, **deKemp RA**, Labinaz M, Higginson LAJ, Marquis J-F, Aung MT, Vickers TK, Levesque N, Kearns SA, Beanlands RS. The effect of primary stenting in acute myocardial infarction on myocardial perfusion reserve measured by Rb-82 PET. Can J Cardiol 1998;14:135F.
34. Beauchesne LM, Ruddy TD, **deKemp RA**, Aung MT, Levesque N, Alvarez-Diez T, Vickers TK, Aubrey BA, Beanlands RSB. Reproducibility of Myocardial Perfusion Measurements with Rubidium-82 PET Imaging. Circulation 1998;98:I-222. and Can J Cardiol 1998;14:135F.
35. **deKemp RA**, Ruddy TD, Beanlands RSB. Cardiac PET and SPECT – Clinical Practice and Research Applications. COMP/CCPM/APBIQ Conference Symposium Med Phys 1999.
36. **deKemp RA**, Ruddy TD, Hewitt T, Dalipaj M, Aung M, Hart R, Beanlands RS. Monitoring the Response to Therapy using Direct Paired Comparisons of Serial Myocardial Perfusion Images. J Nucl Med 1999;40:161P.
37. **deKemp RA**, Ruddy TD, Aung MT, Levesque N, Beanlands RS. Clinical evaluation of post-injection singles transmission for cardiac FDG PET. J.Nucl.Med. 2000;41:88P.
38. **deKemp RA**, Van Kriekinge SD, Germano G, Aung MT, Ruddy TD, Beanlands RS. LV ejection fraction with gated FDG studies on a partial-ring rotating PET scanner. J.Nucl.Med. 2000;41:88P.
39. Beanlands RSB, **deKemp R**, Ruddy TD, Nichol G, Iwanochko RM, Coates G, Aubrey B, Garrard L, Blackburn J, Aung M, Hendry P, Masters R, Burns R, Nahmias C, Freeman M, Lamy A, Kostuk W, Fallen E and the PARR Investigators. A Quantitative Method of defining Scar with F-18-FDG PET Predicts the Degree of Recovery of LV Dysfunction Post-Revascularization. Can J Cardiol 2000;16; Suppl F:508-225F and Circulation 2000;102(18);Suppl II-724-3500.
40. Beanlands RS, Ruddy TD, **deKemp R**, Hendry P, Masters RG, Coates G, Burns RJ, Iwanochko RM, Nichol G, Nahmias C, Freeman M, Mickleborough L, Lamy A, Kostuk W. The Extent of Ischemic and Non-Ischemic Viable Tissue Predicts the Degree of Recovery of LV Dysfunction Post-Revascularization. J Am Coll Cardiol 2000; 35(2);1079-31.
41. Johnson CB, **deKemp R**, Dalipaj MM, Aung MT, Aubrey BA, Beanlands RS, Ruddy TD. Reduced Myocardial Glucose Utilization with Nitroglycerin in Patients with Coronary Artery Disease and Left Ventricular Dysfunction. Can J Cardiol 2000;16; Suppl F:509-225F and Circulation 2000;102(18)Suppl II-578-;2801
42. Gholoum B, **deKemp R**, Dalipaj M, Ascah KJ, Beanlands RS, Aung MT, Levesque N, Gauthier D, Westerman E, Ruddy TD. The Effect of a High Fat Meal on Triglyceride Levels, Endothelial Function and Myocardial Blood Flow. Can J Cardiol 2000;16; Suppl F: 510-225F and Circulation 2000;102(18);Suppl II-770-3719.
43. Sekar N, LeMay M, Ruddy T, **deKemp R**, Aung M, Levesque N, Gauthier D, Westerman E, Beanlands R. Evaluation of Myocardial Perfusion Post Infarction in Patients Receiving Primary Stent Implantation or t-PA. Can J Cardiol 2000;16; Suppl F:511-225F.
44. **RA dekemp**, R Hart, LM Beauchesne, TD Ruddy, RS Beanlands, Serial PET Imaging of Absolute Myocardial Perfusion Response to Therapy in Humans. J.Nucl.Med. 2001
45. AD Kitsikis, **RA dekemp**, R. Seth, LM Beauchesne, R Hart, TD Ruddy, RS Beanlands. Stress <sup>82</sup>Rb PET Normal Database for CAD Diagnosis: Development and Initial Validation. J.Nucl.Med. 2001
46. Seth R, **de Kemp RA**, Ruddy TD, Hart R, Kitsikis A, Aung M, Levesque N, Gauthier D, Westerman E, Beanlands RS. Absolute myocardial perfusion in multi-vessel disease. J Am Coll Cardiol 2001.
47. Wassenaar R, Beanlands RS, Ruddy TD, **deKemp RA**. Partial Volume Correction in PET. Can J Cardiol 2001.
48. Tang ASL, Burwash IG, Nahmias C, **deKemp RA**, Fallen EL, Beanlands RSB. Effect of cardiac

- resynchronization on oxidative metabolism in patients with advanced heart failure and conduction abnormality. *Can J Cardiol* 2001;17(suppl C):224-154C.
49. Seth R, *deKemp R*, Ruddy T, Hart R, Kitsikis A, Aung M Levesque N, Gauthier D, Westerman E, Beanlands R. Potential utility of quantitative analysis of Rb-82 PET in 3-vessel coronary artery disease. *J Nucl Cardiol* 2001; 8(1):13.50-S90, and *Can J Cardiol* 2001;17 (suppl C):119-123C
  50. Saab G, *deKemp RA*, Ukkonen H, Ruddy TD, Beanlands RS. Does gated FDG PET accurately define cardiac function and better characterize myocardial tissue? *J Am Coll Cardiol* 2002;39(5),suppl A;393-1213.
  51. Ukkonen H, Beanlands RSB, Burwash IG, *deKemp RA*, Nahmias C, Fallen EL, Hill MRS, Tang ASL. The Effect of cardiac resynchronization on cardiac efficiency and regional oxidative metabolism in patients with advanced congestive heart failure and conduction abnormality. *Can J Cardiol* 2002
  52. Saab G, *deKemp RA*, Ukkonen H, Ruddy TD, Beanlands RS. Gated FDG PET: Determination of global and regional LV function and myocardial tissue characterization. *Can J Cardiol* 2002; 18:278-187B.
  53. Ling M, Ukkonen H, Ruddy TD, *deKemp RA*, Duchesne L, Garrard L, Aung M, Dalipaj M, Aubrey B, Higginson L, McPherson R, Beanlands RS. Early improvement of myocardial perfusion using statin therapy in patients with CAD. *Can J Cardiol* 2002;18:259-181B and *Circulation* 2002;196:II-477-2361.
  54. Ukkonen H, Beanlands R, Burwash I, *deKemp R*, Niven E, Nahmias C, Fallen E, Hill M, Tang A. The Effect of Cardiac Resynchronization on Myocardial Efficiency and Regional Myocardial Oxidative Metabolism in Patients with Advanced Congestive Heart Failure and Conduction Abnormality. *Can J Cardiol* 2002;18:277-187B.
  55. Wassenaar R, Ruddy TD, Beanlands RS, *deKemp RA*. Computer Simulations of Extravascular Density Imaging to Correct for Partial Volume Effects in Myocardial PET. Imaging Network Ontario Annual Symposium: Ontario Consortium for Cardiac Imaging. Oct 2001.
  56. Ukkonen H, *de Kemp R*, Ruddy TD, Davies RA, Garrard L, Aung M, Firnau G, Hendry P, Beanlands RS. The Right to Left Ventricular Glucose Uptake Ratio Predicts Left Ventricular Function Recovery After Revascularization in Heart Failure. *J Am Coll Cardiol* 2003;41:1093-41-429A, and *Can J Cardiol* 2003;19:633-195A.
  57. Chow BJ, Ruddy TD, Dalipaj M, *deKemp RA*, Nadeau C, Ukkonen H, Ananthasubramaniam K, Beanlands RS. Feasibility of exercise rubidium-82 PET myocardial perfusion imaging. *J Nucl Cardiol* 2003;10(1):S22-4.7 and *J Am Coll Cardiol* 2003;41(Suppl A):1093-38-428A.
  58. Ananthasubramaniam K, Ruddy TD, *deKemp RA*, Golanowski L, Dalipaj M, Beanlands RS. Rubidium-82 clearance kinetics for viability imaging. *J Nucl Cardiol* 2003;10(1):S79-11:17.
  59. K. Sprague, M. Drangova, G. Lehmann, B. Chow, *R. deKemp*, Sparse X-Ray Angiographic Reconstruction. COMP/CCPM: Proceedings of the 49th Annual Scientific Meeting, 2003:184-186 and *Med Phys* 2003;30(7):1951.
  60. Firnau G, Gaudette J, DaSilva J, McKay I, Babcock V, Hartman NG, *deKemp RA*, Ruddy TD, Beanlands R. Carbon-11 tracers at the Cardiac PET Centre at the University of Ottawa Heart Institute. CSNM 2003.
  61. McKay I, Firnau G, Babcock V, Hartman NG, DaSilva J, *deKemp RA*, Ruddy TD, Beanlands R. Automatic Production of [<sup>18</sup>F]FDG at the University of Ottawa Heart Institute. CSNM 2003.
  62. *deKemp RA*, Hart R, Klein R, Byck C, Berry M, Beanlands RS, Ruddy TD. Serial Changes in Perfusion and wall-thickening with gated stress SPECT and Direct Paired Comparison (DPC) Analysis. *J Nucl Med* 2003;44:53P.
  63. Ananthasubramaniam K, Ruddy TD, Golanowski L, Dalipaj M, *deKemp RA*, Beanlands RSB. Identification of Hibernating Myocardium Using Rubidium-82 Kinetics and Dynamic Tomography. *Can J Cardiol* 2003;1 (Suppl A):631-194A.
  64. Chow BJW, Ruddy TD, Ananthasubramaniam K, *deKemp RA*, Dalipaj M, Beanlands RSB. Comparison of Treadmill Exercise Versus Dipyridamole Stress with Rb-82 PET Myocardial

- Perfusion Imaging. *Can J Cardiol* 2003; 19 (Suppl A):630-194A.
65. Glover CA, Beanlands RS, **deKemp RA**, Mostert K, Garrard L, Atkins H. Stem Cell Induction in Post Myocardial Infarction (MI) Patients to Promote Cardiomyocyte Repopulation. *Circulation* 2003;108(Suppl IV):502-2289.
  66. Sadek M, Goloum B, **deKemp RA**, Dalipaj MM, Beanlands RS, Ruddy TD. Altered Myocardial Perfusion with Fatty Meal Ingestion in Normal Volunteers. *J Am Coll Cardiol* 2004;43(Suppl A):338A-1094-158.
  67. Yoshinaga K, Chow B, **deKemp R**, Williams K, Garrard L, Aung M, Mostert K, Gauthier D, Davies RA, Ruddy T, Beanlands R. Prognostic value of rubidium-82 perfusion positron emission tomography: Preliminary results from the consecutive 153 patients. *J Am Coll Cardiol* 2004;43(Suppl A):338A-1094-159 and *Can J Cardiol* 2004.
  68. Ukkonen H, **deKemp R**, Davies R, Dafoe W, Burwash I, Haddad H, Mostert K, Aung M, Ruddy T, Beanlands R. The relationship between minute ventilation and the rate of CO<sub>2</sub> elimination reflects the right ventricular oxidative metabolism in heart failure. *J Am Coll Cardiol* 2004;43(Suppl A):332A-804-4.
  69. Davies R, Beanlands RS, Ruddy TD, Davies RA, Faber TL, Santana CA, **deKemp RA**. Standards for evaluation of myocardial viability with FDG PET - Comparison of two quantitative methods. *J Am Coll Cardiol* 2004;43(Suppl A):423A-854-1.
  70. Wong J, Beanlands R, Ruddy TD, **deKemp RA**, Yoshinaga K, Chow BJW. Prognostic Significance of Dipyridamole Induced ST-Segment Depression in Patients with Normal Rb-82 Positron Emission Tomography Perfusion Images. *J Am Coll Cardiol* 2004;43(Suppl A):338A-1094-160.
  71. Klein R, Beauchesne LM, Ruddy TD, Beanlands RS, **deKemp RA**. Direct Paired Comparison of Serial Myocardial Perfusion Scans in Normal Volunteers and Coronary Disease Patients. *J Nucl Med* 2004;5.
  72. Wassenaar R, Wells RG, **deKemp RA**. Clinical Evaluation of CT versus Ge-68 Attenuation Correction in Cardiac PET Imaging. *J Nucl Med* 2004;5.
  73. Yoshinaga K, Beanlands R, **deKemp R**, Lortie M, Morin J, Aung M. Effect of Exercise Training on Myocardial Blood Flow in Patients with Stable Coronary Artery Disease. *Circulation* 2004.
  74. Yoshinaga K, Beanlands R, **deKemp R**, Morin J, Aung M. Effects of Amlodipine and Atenolol on Myocardial Perfusion Assessed by Positron Emission Tomography Imaging. *Can J Cardiol* 2004.
  75. **deKemp RA**, Lortie M, Pibarot P, Blais C, Dumesnil JG, Laforest I, Renaud J, Macaulay K, Garrard L, Beanlands RSB, Burwash I. Coronary Flow Reserve is Impaired in Patients with Aortic Stenosis. *Can J Cardiol* 2004;20:144D
  76. Lortie M, Renaud J, Mostert K, Garrard L, Aung M, Gardner K, DaSilva J, Davies R, Chow B, Ruddy TD, Beanlands RSB, **deKemp RA**. Myocardial Blood Flow Quantification with Rb-82 and N-13-Ammonia PET in Healthy Volunteers. *Can J Cardiol* 2004;20:154D.
  77. Gollob M, Beanlands R, Tang ASL, Green M, Sidhu J, Marion AJ, Khoury D, Carling D, **deKemp RA**, DaSilva JN, Roberts R. Absence of Myocardial AMPK Activity in Transgenic Mice and Decreased Myocardial Glucose Uptake in Affected Patients Indicates Loss of Function of AMPK is Responsible for Familial WPW Syndrome. *Can J Cardiol* 2004.
  78. Mahmoud S, Nasr H, Dalipaj MM, Golanowski L, **deKemp RA**, Chow B, Beanlands RS, Ruddy TD. Transient Ischemic Dilation with Dipyridamole Rb-82 PET Imaging for Detection of Multivessel Coronary Artery Disease in Patients with Normal Perfusion, Scar or Ischemia. *Can J Cardiol* 2004.
  79. Chow BJW, Dalipaj MM, **deKemp RA**, DaSilva JN, Beanlands RS, Ruddy TD. Feasibility of Exercise N-13 Ammonia PET Myocardial Perfusion Imaging. *Can J Cardiol* 2004.
  80. Lortie M, DaSilva J, Beanlands RS, **deKemp RA**. Quantification of Myocardial Blood Flow with Rubidium-82 Dynamic PET. *J Nucl Med*. 2005;46(5):60P.
  81. Kenk M, Thorn S, **deKemp R**, Beanlands RS, DaSilva JN. In vivo evaluation of (R)- and (S)-[<sup>11</sup>C]rolipram for selective imaging of PDE4 in cardiac tissues. *J Nucl Med*. 2005;46(5):260P.

82. Green G, Cuhadar A, deKemp R. Wavelet-based denoising for Rb-82 cardiac PET imaging. *J Nucl Med*. 2005;46(5):466P.
83. Wassenaar R, DaSilva J, Beanlands R, deKemp RA. A canine model of 3D PET extravascular density imaging for regional myocardial resolution recovery. *J Nucl Med*. 2005;46(5):472P.
84. Chung D, Sprague K, Radau P, **deKemp R**. A graphical tool for coronary X-ray angiographic reconstruction. *Radiology* 2005.
85. Yoshinaga K, Ukkonen H, Burwash I, **deKemp R**, Dafoe W, Davies RA, Haddad H, Ruddy TD, DaSilva JN, Beanlands R. Myocardial Efficiency Reserve Predicts the Deterioration in Exercise Capacity Over Time in Patients with Heart Failure. *J Nucl Cardiol* 2005;12(2):S42-7.8 and *J Am Coll Cardiol* 2005; Vol 45 No 3:268A-1055-91.
86. Yoshinaga K, Chow B, **deKemp R**, Williams K, Garrard L, Szeto A, Aung M, Davies R, Beanlands R. Prognostic value of Rubidium-82 Perfusion Positron Emission Tomography in Patients Referred SPECT Imaging. *J Nucl Cardiol* 2005;12(2):S43-7.9 and *Can J Cardiol* 2005;21(SupplC):188C-579.
87. Yoshinaga K, Beanlands R, Leech J, Burwash IG, Elabassi W, Johnson C, **deKemp R**, Chow JW, DaSilva JN, Haddad H. Acute and Chronic Effect of Continuous Positive Airway Pressure on Myocardial Energetics in Patients with Obstructive Sleep Apnea and Heart Failure. *Circulation* 2005;Vol 112 No 17(Suppl II):II-593-2805 and *Can J Cardiol* 2005;21(Suppl C):191C-594.
88. Thompson K, Saab G, Chow B, **deKemp RA**, Ananthasubramaniam K, Garrard L, DaSilva J, Davies RA, Gauthier D, Dalipaj M, Ruddy TD, Beanlands RS. Reduced septal glucose metabolism in patients with left bundle branch block. *Can J Cardiol* 2005;21(Suppl C):140C-397
89. Kenk M, Thorn S, Greene M, Thackeray J, **deKemp R**, Beanlands RS, DaSilva JN. Elevating Noradrenaline Synaptic Levels Increases (R)-[11C]Rolipram Specific Binding to Phosphodiesterase-4 in Rat Myocardial Regions. *Can J Cardiol* 2005;21(Suppl C):208C-655.
90. Yoshinaga K, Ukkonen H, Burwash I, **deKemp R**, Dafoe W, Daview RA, Haddad H, Williams K, Chen LRuddy TD, DaSilva JN, Beanlands RS. Myocardial Efficiency Reserve Predicts the Change Exercise Capacity Over Time in Patients with Heart Failure. *CJC* 2005;Vol 21(Suppl C):224C-717.
91. Johnson CB, Yoshinaga K, Haddad H, Leech J, Elabassi W, **deKemp R**, DaSilva JN, Beanlands RS, Burwash IG. Effect of Acute and Chronic CPCP Therapy on Left Ventricular Systolic and Diastolic Function in Patients with Congestive Heart Failure. *Can J Cardiol* 2005;21(Suppl C):140C-399.
92. Burwash IG, **deKemp RA**, Pibarot P, Lortie M, Mundigler G, Khorsand A, Blais C, Baumgartner H, Dumesnil JG, Hachicha Z, Beanlands RS. Myocardial Blood Flow in Patients with Low Flow Low Gradient Aortic Stenosis: Differences Between True and Pseudo Severe Aortic Stenosis. Results from the Multicenter TOPAS Study. *Circulation* 2005;Vol 112 No 17(Suppl II):II-718-3355, and *Can J Cardiol* 2006;22(supplD):182D.
93. Yoshinaga K, Chow BJW, Williams K, Chen L, **deKemp RA**, Garrard L, Szeto A L-T, Davies RA, Ruddy TD, Beanlands RS. Prognostic Value of Rubidium-82 Perfusion Positron Emission Tomography in Patients with Obesity. *J Am Coll Cardiol*. 2006;Vol 47 No 4(Suppl A):115-812-7 and *Can J Cardiol* 2006;22(supplD):106D.
94. Renaud J, Lortie M, Wassenaar R, DaSilva JN, Beanlands RS, **deKemp RA**. Quantifying the Range of Myocardial Blood Flow with 13N-Ammonia and 82Rb Dynamic PET Imaging. *J Nucl Med* 2006;47(5):67P.
95. Lecomte R, **deKemp RA**, Klein R, Cadorette J, Bergeron M, Lepage MD, Selivanov V, Tetrault M, Viscogliosi N, fontaine R. LabPET™: A high performance APD-based digital PET scanner for small animal imaging. *J Nucl Med* 2006;47(5):194P.
96. **deKemp RA**, Caldwell CB, Farncombe TH, McKee BT, Wassenaar RW, Wells RG, Wilson DM, Gulenchyn KY. PET imaging standards and quality assurance for the multi-centre trials of the Ontario Clinical Oncology Group (OCOG). *J Nucl Med* 2006;47(5):365P.

97. Kenk M., Greene M., Thackeray J., Thorn S., Lortie M., **deKemp R.**, Beanlands R.S., DaSilva J.N. Imaging myocardial phosphodiesterase-4 using (R)-[11C] Rolipram and positron emission tomography (PET). Gordon Research Conference on Cyclic Nucleotide Phosphodiesterase, 2006.
98. Kenk M, Lortie M, Thorn S, Davis D, Birnie D, Labinaz M, Tang A, **deKemp R**, Beanlands RS, JN. Imaging myocardial cAMP-specific phosphodiesterase-4 activity in canine models. Can J Cardiol 2006;22(supplD):107D.
99. Chow BJW, Dennie C, Hoffmann U, So D, **deKemp RA**, Ruddy TD, Beanlands RS. Comparison of CT angiography versus Rb-82 positron emission tomography for the detection of coronary artery disease. Can J Cardiol. 2006;22(supplD).
100. Beanlands R, Nichol G, Huszti E, Garrard L, Humen D, Racine N, Freeman M, Gulenchyn K, F, **deKemp R** and the PARR Investigators. FDG PET-Guided Therapy Versus Standard Care in Severe LV Dysfunction. The PARR-2 Trial (PET and Recovery Following Revascularization) Can J Cardiol 2006;22(supplD);230D, and J Am Coll Cardiol 2007;49(9)suppA:100-101A.
101. Lortie M, Beanlands RS, DaSilva JN, **deKemp RA**. Quantification of myocardial blood flow in subjects with coronary artery disease with <sup>82</sup>Rb dynamic PET imaging. J Nucl Med 2007;48:219-220P.
102. Klein R, Bentourkia M, Adler A, DaSilva JN, Wassenaar R, Beanlands RS, **deKemp RA**. Anatomical accuracy & variability in factor analysis of dynamic structures (FADS) with cardiac <sup>18</sup>FDG PET imaging. J Nucl Med 2007;48:408P. and MFI symposium on cardiac metabolism 2008.
103. Dumouchel T, Bergeron M, Cadorette J, Lepage M, Selivanov V, Lapointe D, Dasilva J, Lecomte R, **deKemp RA**. Initial Performance assessment of the LabPET APD-based digital PET scanner. J Nucl Med 2007;48:39P. and MFI symposium on cardiac metabolism 2008.
104. Richard Wassenaar, Michel Lalonde, Barbora Dej, Brian Marvin, **Robert deKemp**, David Birnie, Terry Ruddy. Quantifying LV Dyssynchrony for CRT Selection using Radionuclide Angiography Phase Analysis Parameters. J Nucl Med 2007;
105. C. Gergley, R Beanlands, **R. deKemp**, J. Leech, H. Haddad, A. Klug, I. Burwash, O. Walter, A. Guo, J. DaSilva, J. Floras, L. Mielniczuk; Chronic Kidney Disease and myocardial Sympathetic Nerve Function in Patients with Chronic Heart Failure, Can J Cardiol 2007;23(suppl).
106. Y Zhang, E Suuronen, S Thorn, R Beanlands, **R deKemp**, J DaSilva and M Ruel. Cell labeling with <sup>18</sup>F-FDG for trafficking endothelial progenitor cells delivered by polymer matrices in a rat ischemic model using PET. Can J Cardiol 2007;23(suppl).
107. Chow B, Al-Shammeri OM, Beanlands R, Chen L, **deKemp RA**, DaSilva J, Ruddy T. Prognostic Value of Treadmill Exercise and Dobutamine Stress Positron Emission Tomography Can J Cardiol 2007;23(suppl). and Circulation 2007 (suppl)
108. A. C. Ha, J. Renaud, S. Thorn, **R. deKemp**, K. Yoshinaga, L. Garrard, J DaSilva, R Beanlands, M Gollob; Altered Myocardial Glucose Uptake in Patients with the PRKAG2 Cardiac Syndrome. Circulation 2007 (suppl)
109. *G. D'Egidio*, G. Nichol, K. Williams, A. Guo, L. Garrard, **R. deKemp**, J. DaSilva, D. Humen, K. Gulenchyn, M. Freeman, N. Racine, R. Beanlands; Hibernating Myocardium Identifies High Risk Patients with Ischemic Cardiomyopathy. (Substudy of the PARR-2 Trial Circulation 2007 (suppl).
110. Rob S.B. Beanlands, Graham Nichol, Ella Huszti, Dennis Humen, Normand Racine, Michael Freeman, Karen Y. Gulenchyn, Linda Garrard, **Robert deKemp**, Ann Guo, Terence D. Ruddy, Francois Benard, Andre Lamy, Robert M. Iwanochko the PARR-2 Investigators; F-18-Fluorodeoxyglucose Positron Emission Tomography Imaging-Assisted Management of Patients With Severe Left Ventricular Dysfunction and Suspected Coronary Disease: A Randomized, Controlled Trial (PARR-2) J Am Coll Cardiol 2007 (late breaking clinical trials).
111. Luisi AJ, Heavey BM, Cauty JM, **deKemp RA**, Fallavollita JA. Estimation of perfusion with <sup>13</sup>N-ammonia underestimates the frequency and extent of hibernating myocardium when compared to quantification of absolute myocardial blood flow. Circulation 2007.

112. **deKemp RA**, Renaud J, Klein R, Lortie M, Beanlands RS. Listmode dynamic-static-gated imaging of myocardial flow reserve, perfusion uniformity, and ejection fraction reserve with Rb-82 PET. *J Nucl Med* 2008.
113. **R.deKemp**, R.Beanlands. Revised Effective Dose Estimate for the PET perfusion tracer Rb-82. *J Nucl Med* 2008.
114. Renaud JM, Lortie M, DaSilva J, Beanlands RSB, **deKemp RA**. Net retention of <sup>82</sup>Rb versus <sup>13</sup>N-ammonia with dynamic PET imaging. *J Nucl Med* 2008. and MFI symposium on cardiac metabolism 2008.
115. M. Lamoureux\*, S. Thorn, R. Klein, M. Lortie, J. Renaud, R.S.B. Beanlands, J.N. DaSilva, **R.A. deKemp**. Quantification of myocardial blood flow in rat myocardium with N-13-ammonia and a new microPET scanner. *J Nucl Med* 2008. and MFI symposium on cardiac metabolism 2008.
116. Mohammad MH, Chow BJ, Dalipaj MM, **dekemp RA**, Ali I, Wells RG, Davies RA, Beanlands RS, Ruddy TD. Extent OF DIPYRIDAMOLE INDUCED HYPOPERFUSION WITH <sup>99m</sup>Tc TETROFOSMIN AND SESTAMIBI SPECT IMAGING COMPARED TO <sup>82</sup>Rb PET IMAGING. *J Nucl Med* 2008.
117. Yoshinaga K, Manabe O, Katoh C, Naya M deKemp RA, Tamaki N. Measurement of coronary endothelial function with Rubidium-82 PET – Comparison with oxygen-15-labelled water PET. *J Nucl Med* 2008.
118. Dumouchel T, deKemp RA. Count rate performance of the Inveon small animal PET scanner. *J Nucl Med* 2008.
119. Osamu Manabe, Keiichiro Yoshinaga, Chietsugu Katoh, Masanao Naya, **Robert A deKemp**, Nagara Tamak. Repeatability of Rest and Hyperemic Myocardial Blood Flow Measurements with Rubidium-82 PET. *J Nucl Med* 2008
120. M. Lalonde, D.Birnie, T.Ruddy, **R. deKemp**, R G Wells, R. Wassenaar. Can phase analysis of SPECT blood pool images diagnose mechanical dyssynchrony?. *J Nucl Med* 2008.
121. Zhang Y, Thorn S, DaSilva JN, Lamoureux M, deKemp RA, Beanlands RS, Ruel M, Suuronen E. Collagen-based Matrices Improve the Delivery of Transplanted Circulating Progenitor Cells: Development and Demonstration by ex vivo Radionuclide Cell Labeling and in vivo Tracking with Positron Emission Tomography. *Circ* 2008.
122. Birnie, Tang, Gollob, Lemery, Green, Guo, DaSilva, **deKemp**, Beanlands. Lateral wall scar burden predicts response to cardiac resynchronization therapy. *Can J Cardiol* 2008
123. Renaud JM, Lortie M, DaSilva JN, Beanlands RSB, **deKemp RA**. Normal population databases of absolute myocardial blood flow using a net retention model of <sup>82</sup>Rb versus <sup>13</sup>N-ammonia dynamic PET imaging. *Can J Cardiol* 2008.
124. Renaud JM, Boodhwani M, Thorn S, Suuronen E, DaSilva J, Beanlands RSB, Ruel M, **deKemp RA**. Impaired flow reserve and perfusion-metabolic mismatch demonstrated in a porcine model of myocardial hibernation. *Can J Cardiol* 2008.
125. Thorn SL, Lamoureux MP, **deKemp RA**, Klein R, Renaud JM, Ha AH, Beanlands RS, DaSilva JN, Gollob M. Reduced Myocardial Uptake and Function in ARG302GLN PRKAG2 Mutant Mice as Measured by FDG PET and Echocardiography. *Can J Cardiol* 2008:24 Suppl E, p.291E
126. Anselm AH, Beanlands RS, Atkins H, Le May M, Davies RF, Burwash IG, **deKemp RA**, DaSilva JN, Kelly C, Guo A, Williams K, Glover C. Alterations in Glucose Metabolism in Revascularized Myocardium. *Can J Cardiol* 2008:24 Suppl E, p.292E
127. Esmaili M, Iwanochko RM, Nichol G, Williams K, Guo A, Garrard L, Humen D, Racine N, Freeman M, Gulenchyn KY, **deKemp RA**, Ruddy TD, DaSilva JN, Beanlands RS. Predictors of LV Function Recovery in Patients with Ischemic Cardiomyopathy: Substudy of the PARR2 Trial. *Can J Cardiol* 2008:24 Suppl E, p.230E
128. Zhang Y, Thorn S, DaSilva JN, Lamoureux MP, **deKemp RA**, Beanlands RS, Chan V, Price J, Suuronen EJ, Ruel M. Collagen-based Matrices Improve Early Retention and Subsequent Engraftment of Transplanted Progenitor Cells. *Can J Cardiol* 2008:24 Suppl E, p114E



129. Maria C. Ziadi, **Robert A. deKemp**, Benjamin Chow, Terrence Ruddy, Renee Hessian, Ross A. Davies, Ann Guo, Kathryn Williams, Judy Etele, Linda Garrard, Rob SB Beanlands. Clinical Variables Related To Abnormal Myocardial Flow Reserve Quantified With Positron Emission Tomography Myocardial Perfusion Imaging. American College of Cardiology, Orlando, Florida (Abstract Accepted)
130. A. Abraham, G. Nichol, K. Williams, **R. deKemp**, TD. Ruddy, RA. Davies, BJW. Chow, RS. Beanlands. Ottawa FIVE - FDG PET May Prevent Cardiovascular Events in Patients with Ischemic Cardiomyopathy at an Experienced Center with Ready Access to FDG: A PARR2 sub-study. American College of Cardiology, Orlando, Florida (Abstract Accepted)
131. A. Abraham, G. Nichol, K. Williams, **R. deKemp**, TD. Ruddy, RA. Davies, BJW. Chow, RS. Beanlands. Ottawa FIVE - FDG PET May Prevent Cardiovascular Events in Patients with Ischemic Cardiomyopathy at an Experienced Center with Ready Access to FDG: A PARR2 sub-study. International Congress of Nuclear Cardiology, Barcelona, Spain, May 2009. (Abstract Accepted)
132. Yoshinaga K, Manabe O, Katoh C, Naya M, **deKemp RA**, Tamaki N. Development of Coronary Endothelial Function Measurements with Generator Produced Rubidium-82 PET - Comparison with Oxygen 15-Labeled Water PET. JCS 2008

### Newspaper Articles

1. David Stonehouse "*The master of machines: Rob deKemp*". The Researchers series - Ottawa Citizen Newspaper, 26 Aug 2002.

### Invited Presentations

1. '*Medical Imaging*', Undergraduate Physics Lecture Series, McMaster University, Hamilton, Ontario. 1994.
2. '*Positron Emission Tomography: Instrumentation and Applications*', Research Seminar Series, Medical Physics Organised Research Unit, Carleton University, Ottawa, Ontario. March 1996.
3. 'PET: Providing Access to a Valuable Clinical Tool: Instrumentation for PET', Conjoint National Scientific Meeting, CANM/SNMC/CARS. Ottawa, Ontario Nov 1997.
4. '*Development of <sup>82</sup>Sr/Rb Generators for Human Use in Canada*', LS-18 Final Report to TRIUMF Life Sciences Program Evaluation Committee. Vancouver, British Columbia. Jan 1998.
5. '*The ART of Quantitative PET*', University of Ottawa Heart Institute Research Seminar. Ottawa, Ontario. May 1998.
6. "*Measuring Serial Changes in Myocardial Perfusion with Positron Tomography*". University of Ottawa Heart Institute Research Seminar. Ottawa, Ontario. May 1999.
7. "*Cardiac PET and SPECT – Clinical Practice and Research Applications*", COMP/CCPM/APBIQ Conference Symposium, Sherbrooke, Quebec. June 1999.
8. "*Detecting Serial Changes in Myocardial Perfusion with PET and SPECT*", Research Seminar Series, Ottawa Medical Physics Institute, Carleton University, Ottawa, Ontario. Oct 1999.
9. "*Quantitative Positron Tomography in Ischemic Heart Disease*", Departmental Seminar, Physics Department, Carleton University, Ottawa, Ontario. Nov 1999.
10. "*Quantitative Functional Imaging with Positron Tomography*", Ottawa Hospital, Nuclear Medicine Rounds. Ottawa, Ontario. May 2000.
11. "*Evaluating Revascularization Therapies – A new SPIN on myocardial perfusion imaging*", University of Ottawa Heart Institute Research Seminar. Ottawa, Ontario. May 2001.
12. "*New Radiotracers for Nuclear Cardiology: PET and Nuclear Cardiology*" Technologist Continuing Education Seminar, Society of Nuclear Medicine Annual Meeting. Toronto, Ontario,

June 2001.

13. "SPINNER", Ottawa Hospital, Nuclear Medicine Rounds. Ottawa, Ontario. Dec 2001.
14. "A new SPIN on ECG-gated SPECT Imaging ", Research Seminar Series, Ottawa Medical Physics Institute, Carleton University, Ottawa, Ontario. Apr 2002.
15. "Myocardial blood flow imaging with Rb-82 PET", PET/CT Imaging Symposium, Lawson Health Research Institute, London, Ontario. June 2002.
16. Standards for Oncology PET Imaging in Ontario – PET Operations Subcommittee, Ontario Ministry of Health Medical Advisory Secretariat. Ottawa, May 2002.
17. Standards for Oncology PET Imaging – Quebec Ministere de la Sante et des Services Sociaux, Ottawa, December 2002.
18. "Cardiac PET Imaging – technical aspects" Technologist Continuing Education Seminar, Society of Nuclear Medicine Annual Meeting. New Orleans, LA. June 2003
19. "Absolute and Relative Blood Flow Imaging with PET", Canadian Association of Physicists, Charlottetown, 2003.
20. "PET perfusion imaging in Obesity - Attenuation Correction substudy", ICES Advisory Committee for the Evaluation of cardiac PET Health Technology, Toronto. 2003
21. "PET quantitative flow imaging in multi-vessel disease", ICES Advisory Committee for the Evaluation of cardiac PET Health Technology, Toronto. 2003
22. "Research Applications of Cardiac PET/CT", CTI PET Systems, Knoxville, TN, April 2003
23. "Serial Perfusion Imaging – Tools for research and patient management", SUNY University at Buffalo, NY, October 2003
24. "OCOG PET Imaging Standards", Clinical Trials Management Group, Toronto, ON, October 2003
25. "Serial PET Imaging and CAD – computer assisted diagnosis ?", University of Ottawa Heart Institute, ON, Jan 2004
26. "Attenuation Correction in PET and SPECT", Nuclear Medicine Technologists Symposium, Ottawa, ON, April 2004
27. "Micro-PET Molecular Imaging in Cancer and Cardiovascular Research", Ottawa Medical Physics Institute, The Ottawa Hospital Regional Cancer Centre, Ottawa, ON, October 2004.
28. "OCOG PET Imaging Standards", Ontario Clinical Oncology Group – ELPET and PETSTART launch, The Ottawa Hospital Regional Cancer Centre, Ottawa, ON, Feb 2005.
29. "Micro-PET Molecular Imaging for Cardiovascular Research", Imaging Network Ontario, Ontario Consortium for Cardiac Imaging. Toronto, ON, March 2005.
30. "PET Imaging Standards and Quality Assurance", Ontario Clinical Oncology Group – PET PREVENT trial launch, The Ottawa Hospital Regional Cancer Centre, Ottawa, ON, Apr 2005.
31. "Imaging Molecular Function with (milli-)micro-PET", Research Conference, University of Ottawa Heart Institute, Ottawa, ON, June 2005.
32. "Attenuation Correction for PET", Nuclear Medicine Technologists Symposium, Ottawa, ON, Sept 2005.
33. "microPET Molecular Imaging for Cardiac Research", Department of Physics Seminar Series, Carleton University, Ottawa, ON, Sept 2005.
34. "PET Imaging Standards – Quality Assurance subcommittee report", Ontario Clinical Oncology Group – PET trials retreat, Toronto, ON, Nov 2005.
35. "PET Imaging Standards and Quality Assurance", Ontario Clinical Oncology Group – PET PREDICT trial launch, The Ottawa Hospital Regional Cancer Centre, Ottawa, ON, Apr 2006.
36. "Quantification of Myocardial Physiology and Molecular Function with Cardiac PET", PMOD training workshop, Heidelberg, Germany. April 2006.
37. "FlowTrace-Rb™ Rb-82 generator production, tracer delivery and modeling", (joint with R.Klein), CSNM annual meeting, Quebec, PQ. April 2006.
38. "Rubidium PET Perfusion Imaging: past, present and future". Multidisciplinary Research Conference, University of Ottawa Heart Institute, Ottawa, ON, April 2007.
39. "Metabolic Alterations in Human Disease and Animal Models". Heart and Stroke Foundation

- Ontario Program Grant site visit. Ottawa, ON, April 2007.
40. "Rubidium PET perfusion imaging". Central Research Institute of Roentgenology and Radiology, St. Petersburg, Russia, Sept 2007.
  41. "Rubidium MPI", Kettering Medical Center, Dayton, OH, Feb 2008.
  42. "Rubidium Elution system", Kettering Feb 2008.
  43. "PET/CT imaging standard and Quality Assurance: Experience of the Ontario Multi-centre Trials in Oncology and Cardiology", CSNM annual meeting, Toronto, ON, April 2008.
  44. "cardiac microPET imaging", Small animal imaging symposium, University of Ottawa Heart Institute, Ottawa, ON, June 2008.
  45. "Automated Detection of Serial Changes in Myocardial Perfusion", Advanced Imaging Track - ASNC annual meeting, Boston, MA, Sept 2008
  46. "Cardiac Applications of microPET", CT/MRI Imaging Symposium, Siemens Medical Solutions, Ottawa, ON, Sept 2008.
  47. "Applications of Rubidium PET imaging in Clinical Research", Munich PET Centre, Germany, Oct 2008.
  48. "Standardization and Quality Assurance in Advanced Clinical Imaging", Imaging for Cardiovascular Therapeutics Workshop – "Imaging in Heart Failure". Toronto, Ontario, Canada. December 2008.
  49. "microPET molecular imaging", University of Ottawa Heart Institute Research Retreat, Ottawa, November 2008.
  50. "Quantification of Molecular Function in the Thorax", Groningen Molecular Imaging Symposium, Netherlands, April 2009.
  51. "microPET imaging in mouse models of heart disease", NIH Cardiovascular Imaging Symposium, Baltimore, MD, April 2009.