

# PROGRAM

## 6<sup>TH</sup> INTERNATIONAL SYMPOSIUM ON RADIOHALOGENS

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**Saturday, September 6, 2008**

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18:00-20:00      **Registration and Reception**

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**Sunday, September 7, 2008**

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08:30              *Welcome*  
Michael Adam, TRIUMF/UBC, Vancouver, B.C., Canada

**SESSION I: ISOTOPE PRODUCTION**  
Chairperson: M. Adam

08:45              **Invited Talk (IS1)**  
**Production, Use and Application of the PET Radiohalogens**  
**<sup>76</sup>Br and <sup>124</sup>I.**  
Jason S. Lewis, PhD

### **Contributed Talks**

09:30              CS1 **New Cross Section Measurements for**  
**Production of the PET- Nuclides <sup>75</sup>Br and <sup>76</sup>Br via**  
**Intermediate Energy Induced Reactions**  
I. Spahn<sup>1</sup>, G.F. Steyn<sup>2</sup>, C. Vermeulen<sup>2</sup>, Z. Kovács<sup>3</sup>, F.  
Szelecsényi<sup>3</sup>, H.H. Coenen<sup>1</sup>, S.M. Qaim<sup>1</sup>  
<sup>1</sup>Institut für Neurowissenschaften und Biophysik (INB 4):  
Nuklearchemie, Forschungszentrum Jülich GmbH, D-  
52425 Jülich, Germany  
<sup>2</sup>Radionuclide Production, iThemba LABS, Somerset  
West 7129, South Africa  
<sup>3</sup>Cyclotron Department, Institute of Nuclear Research of  
the Hungarian Academy of Sciences (ATOMKI),  
Debrecen H-4026, Hungary

09:45 CS2 **Automation of a method for  $^{124}\text{I}$  production irradiating  $\text{Al}_2\text{Te}_3$  on 16-18MeV cyclotrons; prospective for the production of other halogens**  
P. Bedeschi<sup>1</sup>, J.A. Nye<sup>2</sup>, M.A. Rodriguez<sup>3</sup>, D.W. Dick<sup>4</sup>, S. Bosi<sup>1</sup>, M. Montroni<sup>1</sup>, D. Ragazzini<sup>1</sup>, T.E. Barnhart<sup>5</sup>, J.W. Engle<sup>5</sup>, R.J. Nickles<sup>5</sup>  
<sup>1</sup>Comecer, Castel Bolognese, Italy  
<sup>2</sup>Emory University, Atlanta GA  
<sup>3</sup>Turku University, Turku, Finland  
<sup>4</sup>Stanford University, Palo Alto, CA  
<sup>5</sup>Department of Medical Physics, University of Wisconsin, Madison, WI, USA

10:00 **Discussion**

10:15 *Break*

**SESSION II: FLUORINE / BASIC CHEMISTRY**

Chairperson: M. Adam

10:30 **Invited Talk (IS2)**  
**Application of transition metals for the synthesis of  $^{18}\text{F}$ -labeled radiotracers**  
Frank Wuest, Division of Oncologic Imaging, Department of Oncology, Cross Cancer Institute, University of Alberta, Canada

**Contributed Talks**

11:15 CS3 **Alpha Selective Epoxide Opening to Introduce  $^{18}\text{F}^-$  into Organic Molecules**  
Ralf Schirmmacher\*, Carmen Waengler and Esther Schirmmacher<sup>1</sup>  
McConnel Brain Imaging Centre, Montreal Neurological Institute, McGill University, Quebec, Canada  
<sup>1</sup>Lady Davis Institute for Medical Research, Jewish General Hospital, McGill University, Quebec Canada

11:30 CS4 **Synthesis, Radiofluorination and First Evaluation of ( $\pm$ ) [ $^{18}\text{F}$ ]MDL 100907 as a Serotonin 5-HT<sub>2A</sub> Receptor Antagonist for PET**  
Ute Mühlhausen\*, Johannes Ermert, Heinz H. Coenen  
Institute of Neurosciences and Biophysics (INB-4): Nuclear Chemistry, Research Center Jülich, Germany

- 11:45 CS5 **Radiosynthesis and bioconjugation of [18F]FPy5yne, a prosthetic group for the labeling of bioactive peptides.**  
James A. H. Inkster<sup>1</sup>, Brigitte Guérin<sup>2</sup>, Thomas J. Ruth<sup>1</sup>, and Michael J. Adam<sup>1</sup>  
<sup>1</sup>TRIUMF, 4004 Wesbrook Mall, Vancouver, BC, Canada V6T 2A3  
<sup>2</sup>Université de Sherbrooke, Département de Médecine Nucléaire et Radiobiologie, 3001 12<sup>ième</sup>
- 12:00 CS6 **New [<sup>18</sup>F]Fluorobenzoylation Reagents via Isotope Exchange of Trifluoroarylborates**  
Rosalie D. Moorlag<sup>†</sup>, Thomas J. Ruth<sup>‡</sup>, Mike J. Adam<sup>‡</sup> and James A.H. Inkster<sup>‡\*</sup> and David M. Perrin<sup>\*\*</sup>  
<sup>†</sup>University of Groningen, Department of Pharmacy and Pharmaceutical Sciences, Antonius Deusinglaan 1, 9713 AV, Groningen, The Netherlands; <sup>‡</sup>TRIUMF, 4004 Wesbrook Mall, Vancouver, BC, Canada V6T 2A3; <sup>\*</sup>UBC Department of Chemistry, Vancouver, BC, V6T 1Z3.
- 12:15 CS7 **“Click” Radiochemistry for Rapid <sup>18</sup>F-Labeling of Proteins**  
N. Lazarova<sup>\*1</sup>, K.A. Stephenson<sup>1</sup>, and J.F. Vallaint<sup>1</sup>  
<sup>1</sup>The McMaster Institute of Applied Radiation Sciences, McMaster University, Hamilton, ON, Canada L8S 4M1

12:30 *Lunch Break*

### SESSION III: FLUORINE / APPLICATIONS

Chairperson: M. Adam

- 13:30 **Invited Talk (IS3)**  
**Synthesis of Fluorine-18 Labeled Imaging Agents**  
M.M. Goodman\*, N. Jarkas, J. Mun, E. Seo, J. S. Stehouwer, R. J. Voll, W. Yu and F. Zeng  
Department of Radiology, Psychiatry and Behavioral Sciences, Hematology and Oncology, Emory University School of Medicine, Atlanta GA USA 30322.

#### Contributed Talks

- 14:15 CS8 **New approach to the nucleophilic synthesis of 6-[<sup>18</sup>F]fluoro-L-DOPA**  
F. M. Wagner, J. Ermert, H. H. Coenen\*  
Institute of Neurosciences and Biophysics (INB-4): Nuclear Chemistry, Forschungszentrum Jülich, Germany

- 14:30 CS9 **Synthesis and biological evaluation of (1S2S, 1R2R)-anti-2-[<sup>18</sup>F]FACBC for brain tumor imaging with PET**  
Weipeing Yu<sup>1</sup>, Larry Williams<sup>1</sup>, Vernon M. Camp<sup>1</sup>, Eugene Malveaux<sup>1</sup>, Zhaobin Zhang, Mark M. Goodman<sup>1</sup>  
<sup>1</sup>Department of Radiology,  
<sup>2</sup>Department of Neurosurgery School of Medicine, Emory University, Atlanta, GA 30322 USA
- 14:45 CS10 **Targeting the Membrane-Type Serine Protease with <sup>18</sup>F-Labeled Antibody Fragments**  
S. E. Lapi\*<sup>1</sup>, M. R. Darragh<sup>2</sup>, C. C. Craik<sup>3</sup>, H. F. VanBrocklin<sup>1</sup>  
<sup>1</sup>Department of Radiology and Biomedical Imaging, University of California  
<sup>2</sup>Graduate Group in Biophysics, University of California, San Francisco  
<sup>3</sup>Department of Pharmaceutical Chemistry, University of California, San Francisco
- 15:00 CS11 **Automated Radiosynthesis of Hexadecyl-4-[<sup>18</sup>F]fluorobenzoate ([<sup>18</sup>F]HFB) Using the Explora Radio-synthesizer and a Solid-Phase Extraction/HPLC Procedure**  
M. Jahan, T. Hadizad\*, S. Mason, J. Collins, Y. Zhang, M. Ruel, R.S. Beanlands, E.J. Suuronen, and J.N. DaSilva  
National Cardiac PET Centre, University of Ottawa Heart Institute, Ottawa, Ontario, Canada, K1Y 4W7
- 15:15 CS12 **<sup>18</sup>F Radiochemistry at Bristol-Myers Squibb**  
Douglas Dischino, David Donnelly, Daniel Batalla, Walter Ruediger, James Mongillo, Edward Kuspiel, Bala Krishnan, Chris Bernard, Jeff Guss and Robert Ruediger  
Bristol-Myers Squibb, Lawrenceville, NJ

15:30 **Discussion**

15:45 *Mid- Afternoon Break*

**SESSION IV: BROMINE CHEMISTRY / APPLICATIONS**

Chairperson: M. Adam

- 16:00 **Invited Talk (IS4)**  
**Radiopharmaceuticals Labeled with Bromine Radionuclides**  
Robert H. Mach, PhD. And Michael J. Welch, PhD.  
Washington University School of Medicine, St. Louis, MO 63110  
USA

### Contributed Talks

- 16:45      **CS13 Synthesis and stability of [<sup>77</sup>Br]-*m*-  
Bromobenzylguanidine (<sup>77</sup>Br-MBBG)**  
S. Watanabe<sup>\*,1</sup>, N. S. Ishioka<sup>1</sup>, J. X. Liang<sup>1</sup>, H. Hanaoka<sup>2</sup>, T.  
Iida<sup>2,3</sup>, and K. Endo<sup>3,4</sup>  
<sup>1</sup>Plant Positron Imaging Group, Qunatun Meam Science  
Directorate, Japan Atomic Energy Agency (JAEA), Takasaki,  
Gunma, Japan. (E-mail; watanabe.shigeki@jaea.go.jp)  
<sup>2</sup>Bioimaging Information Analysis, Gunma University Graduate  
School of Medicine, Mebashi, Gunma, Japan  
<sup>3</sup>21<sup>st</sup> century COE program, Gunma University Graduate  
School of Medicine, Maebashi, Gunma, Japan  
<sup>4</sup>Diagnostic Radiology and Nuclear Medicine, Gunma  
University Graduate School of Medicine, Maebashi, Gunma,  
Japan
- 17:00      **Discussion**
- 17:15      *Session Ends*

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## Monday, September 8, 2008

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### SESSION V:      IODINE CHEMISTRY

Chairperson:      H. Coenen

- 08:30      **Invited Talk (IS5)**  
**Phospholipid Based Targeting Approaches to Cancer Detection  
and Radiotherapy.**  
Jamey Weichert  
Radiology, Medical Physics and Pharmaceutics, University of  
Wisconsin-Madison, Madison, WI
- 09:15      **Invited Talk (IS6)**  
**Recent Studies Relating to Boron-Based, No-Carrier-Added  
Radiohalogenations**  
G. W. Kabalka  
Department of Chemistry, University of Tennessee, Knoxville, TN

10:00 **Discussion**

10:15 *Break*

**Contributed Talks**

- 10:30 **CS14 Synthesis of Radioiodinated Alkyl Phosphocholine Analogs and Structurally Related Compounds by Boron-Iodine Exchange Reaction.**  
Anatoly N. Pinchuk\*<sup>1,2,a</sup>, Maria Banach<sup>2</sup>, Nathan J. Fleck<sup>2</sup>  
Marc A. Longino<sup>1,2,a</sup> and Jamey P Weichert<sup>1,2,a</sup>  
<sup>1</sup>Department of Radiology, University of Wisconsin, 600 Highland Ave, Madison, WI 53792-3252, USA  
<sup>2</sup>Cellectar, 3301 Agriculture Dr, Madison, WI 53716, USA.
- 10:45 **CS15 Study of the role of the acidity and redox properties of the reaction medium on the Cu<sup>+</sup>-assisted radioiodination**  
J.L.H. Eersels<sup>1</sup>, J. Mertens<sup>2</sup>, J.D.M. Herscheid<sup>1</sup>  
<sup>1</sup>VU University Medical Center, Department of Nuclear Medicine & PET Research, Location Radionuclide Center de Boelelaan 1085c, 1081 HV Amsterdam, The Netherlands  
<sup>2</sup>Department of Radiochemistry, BEFY, Vrije Universiteit Brussel, Laarbeeklaan 103, 1090 Brussel, Belgium
- 11:00 **CS16 A Convenient Method for the Preparation of Highly Fluorinated Tin Derivatives for use with the Fluorous Labeling Strategy**  
Chitra Sundararajan\*<sup>1</sup>-Jason W. McIntee<sup>1</sup>, Michael S. Kovacs<sup>2</sup>, Alfredo Capretta<sup>1</sup>, and John F. Valliant<sup>1,3</sup>  
<sup>1</sup>Department of Chemistry, McMaster University, Hamilton, Ontario, Canada L8S 4M1;  
<sup>2</sup>Lawson Health Research Institute, University of Western Ontario, London, Ontario, Canada;  
<sup>3</sup>McMaster Institute of Applied Radiation Sciences (McIARS), McMaster University, Hamilton, Ontario, Canada
- 11:15 **CS17 Soluble Supports and the Preparation of Radiolabeled Bioconjugates in High Effective Specific Activity**  
A. C. Donovan<sup>1</sup>, and J. F. Valliant<sup>1,2</sup>  
<sup>1</sup>Department of Chemistry and the  
<sup>2</sup>McMaster Institute of Applied Radiation Sciences (McIARS), McMaster University, Hamilton, Ontario, Canada
- 11:30 **Discussion**

## SESSION VI: IODINE APPLICATIONS

Chairperson: B. Abeysekera

11:45 **Invited Talk (IS7)**  
**I-123 labeled small molecule for molecular imaging prostate cancer**

John W. Babich

Development Department, Molecular Insight Pharmaceuticals,  
Cambridge, MA, USA

12:30 *Lunch Break*

### Contributed Talks

13:30 CS18 **Towards the Development of Novel  $\beta$ -Amyloid Targeting I-123 Radiopharmaceuticals**

N. C. Lim<sup>1</sup>, S. -R. Choi<sup>1</sup>, W. Qu<sup>2</sup>, W. Zhang<sup>1</sup>, G. M. Golding<sup>1</sup>,  
T. E. Benedum<sup>1</sup>, Z. Zhuang<sup>1</sup>, A.D. Joshi<sup>1</sup>, R. Manchada<sup>1</sup>, M. J.  
Pontecorvo<sup>1</sup>, H. F. Kung<sup>2</sup> and D. M. Skovronsky<sup>1</sup>

<sup>1</sup>Avid Radiopharmaceuticals, 3624 Market St. Philadelphia, PA  
19104

<sup>2</sup>Department of Radiology, UPENN, 3700 Market St.  
Philadelphia, PA 19104

13:45 CS19 **[<sup>124</sup>I]-  $\beta$ -CIT, new tracer for Parkinson's disease.**

Panichelli Paola\*, Castignani Lorenzo, Colonna Mery, Dignani  
Simone, Fantuzi Mauro, Martini Domenico, Valentini Gianluca  
ACOM (ADVANCED CENTER ONCOLOGY MACERATA)  
S.p.A, Montecosaro, 62010, (MC) Italia.

14:00 CS20 **Radioiodination of Pyridinones for *in vivo* Investigation as Potential Therapeutics for Alzheimer's Disease**

Meryn L. Bowen\*, Michael Merkel, Michael J. Adam and  
Chris Orvig

Department of Chemistry, University of British Columbia, 2036  
Main Mall, Vancouver, BC, V6T 1Z1, Canada and TRIUMF,  
4004 Wesbrook Mall, Vancouver, BC, V6T 2A3, Canada

14:15 CS21 **Synthesis and characterization of <sup>131</sup>I-MIP-1145 a novel therapeutic agent for the treatment of melanin-positive malignant melanoma**

J. Chen<sup>1</sup>, J.F. Kronauge<sup>1</sup>, M Friebe<sup>2</sup>, and J.W. Babich<sup>1</sup>

<sup>1</sup>Development Department, Molecular Insight Pharmaceuticals,  
Cambridge, MA, USA, and <sup>2</sup>Molecular Imaging Research,  
Bayer Healthcare, Berlin, Germany

14:30 **Discussion**

14:45 *Mid-Afternoon Break*

## **SESSION VII: DRUG DEVELOPMENT / COMMERCIAL ISSUES**

Chairperson: H. Coenen

- 15:00 **Invited Talk (IS8)**  
**Use of exploratory IND for Early phase clinical trials using PET or SPECT imaging**  
Gilles Tamagnan  
Molecular NeuroImaging LLC &  
Institute for Neurodegenerative Disorders, New Haven, 06510, CT
- 15:45 **Invited Talk (IS9)**  
**To Be Announced** Brian Abeysekera  
Development Department, Molecular Insight Pharmaceuticals,  
Cambridge, MA, USA
- 16:30 **Invited Talk (IS10)**  
**Radiohalogen Molecular Imaging And Therapy Agents At MDS-Nordion**  
Dennis Wester  
MDS-Nordion, Vancouver Operations, TRIUMF, Vancouver, V6T 2A3
- 17:15 **Discussion**

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**Tuesday, September 9, 2008**

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## **SESSION VIII: ASTATINE CHEMISTRY**

Chairperson: S. Wilbur

- 08:30 **Invited Talk (IS11)**  
**Studies in At-211 Conjugation Chemistry**  
Martin W. Brechbiel  
Radioimmune & Inorganic Chemistry Section, 2Molecular Imaging  
Program, CCR, NCI, NIH, Bethesda, MD 20892

- 09:15 **Invited Talk (IS12)**  
**An update of the use of boron cage molecules in pendant groups for  $^{211}\text{At}$ -labeling of biomolecules.**  
D. S. Wilbur, D. K. Hamlin, M.-K. Chyan and M. A. Perry  
Department of Radiation Oncology, University of Washington,  
Seattle, WA 98105
- 10:00 **Discussion**
- 10:15 *Break*
- Contributed Talks**
- 10:30 CS22 **Preparation and Identification of Astatinated Benzene Derivatives**  
G.-J. Meyer<sup>1</sup>, S.S. Sriyapureddy<sup>1</sup>, A. Hiller<sup>2</sup>, D. Krull<sup>1</sup>, J. Steinbach<sup>2</sup>, W.H. Knapp<sup>1</sup>  
<sup>1</sup>Nuclear Medicine, Medical School Hannover; <sup>2</sup>Inst. for Interdisziplinäre Isotope Research, Leipzig
- 10:45 CS23 **Synthesis, radiohalogenation and in vivo evaluation of decaborate(2-) derivatives for  $^{211}\text{At}$  labeling that contain different functional groups**  
D. S. Wilbur, D. K. Hamlin, M.-K. Chyan and M. A. Perry  
Department of Radiation Oncology, University of Washington,  
Seattle, WA 98105
- 11:00 CS24 **Hydrazone linkers as functional groups for decreasing of kidney retention of radiohalogenated decaborate(2-)-Fab' conjugates.**  
D. K. Hamlin, M.-K. Chyan, D. S. Wilbur  
Department of Radiation Oncology, University of Washington,  
Seattle, WA 98105
- 11:15 CS25 **Synthesis, radiohalogenation and in vivo distribution of biotin derivatives for use in cancer pretargeting protocols.**  
M.-K. Chyan, D. K. Hamlin, D. S. Wilbur  
Department of Radiation Oncology, University of Washington,  
Seattle, WA 98105
- 11:30 **Discussion**
- 12:45 **MEET AT GONDOLA FOR PICTURES**
- 13:15 **BBQ ON MOUNTAIN**

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## Wednesday, September 10, 2008

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**SESSION IX: THERAPY**

Chairperson: B. Abeysekera

- 08:30      **Invited Talk (IS13)**  
**Therapeutic Radiohalogens: Biophysical and Radiobiological Principals**  
Amin I. Kassis  
Harvard Medical School, Boston Massachusetts 02115, USA
- 09:15      **Invited Talk (IS14)**  
**Radiation Induced Biological Bystander Effect Elicited *in vitro* by Targeted Radiopharmaceuticals Labeled with  $\alpha$ -,  $\beta$ - and Auger Electron Emitting Radiohalogens**  
Robert J. Mairs and Marie Boyd  
Targeted Therapy Group, Division of Cancer Science and Molecular Pathology, Glasgow University, Cancer Research UK Beatson Laboratories, Glasgow, G61 1BD Scotland
- 10:00      **Discussion**
- 10:15      *Break*
- 10:30      **Invited Talk (IS15)**  
**Radiohalogenated nucleosides and nucleotides: molecular biology and imaging**  
Leonard I Wiebe  
PET Centre, Cross Cancer Institute, Edmonton, Canada
- 11:15      **Discussion**
- 11:30      *Closing Remarks*