

RUTH, Thomas J.

Publications to – 2013.

1. **TJ Ruth**, DS Brenner. Levels in ^{158}Dy as Populated from Decay of ^{158}Ho in equilibrium with 2.3 h ^{158}Er . *Phys Rev* 1975; **C11**:974-986.
2. JB Cumming, PE Haustein, **TJ Ruth**, GJ Virtes. Spallation of Copper by 80 GeV ^{40}Ar ions. *Phys Rev* 1978; **C17**:1632-1641.
3. PE Haustein, **TJ Ruth**. Spallation of Cu by 500- and 1570 MeV π^- . *Phys Rev* 1978; **C18**:2241-2251.
4. DR Christman, JL Atkins, HJ Bernstein, JS Fowler, BC Gallagher, T Ido, RM Lambrecht, RR MacGregor, M Reivich, **TJ Ruth**, P Som, AP Wolf. The Use of PET III at Brookhaven. *J Comput Assist Tomog* 1978; **2**:641.
5. DJ Schyler, **TJ Ruth**, AP Wolf. Oxygen Content of Selected Coals as Determined by Charged Particle Activation Analysis. *Fuel* 1979; **5**:208-210.
6. DK Li, S Treves, S Heyman, JA Kirkpatrick Jr, RM Lambrecht, **TJ Ruth**, AP Wolf. Krypton 81-m: A Better Radiopharmaceutical for Assessment of Regional Lung Function in Children. *Radiology* 1979; **130**:741-747.
7. **Ruth TJ**, Lambrecht RM, Wolf AP, Thakur ML. Approach to the remote automated production and simultaneous loading of multiple Rb-81-Kr-81m generators for shipment to regional hospitals. *J Label Cpd Radiopharm.* (1979) **16**: 210-211
8. **TJ Ruth**, AP Wolf. Absolute Cross Sections for the Production of ^{18}F Via the $^{18}\text{O}(p,n)^{18}\text{F}$ Reaction. *Radiochim Acta* 1979;**26**:21-24. [Erratum: *Radiochim Acta* 1987;**42**:219.]
9. **TJ Ruth**, AP Wolf. "Small" Accelerator, Radionuclide and Radiopharmaceutical Production. *IEEE Trans Nucl Sci* 1979; **NS-26**:1710-1712.
10. **TJ Ruth**, RM Lambrecht, AP Wolf, ML Thakur. Cyclotron Isotopes and Radiopharmaceuticals. XXX: Aspects of Production, Elution and Automation of ^{81}Rb - $^{81\text{m}}\text{Kr}$ Generators, *I JARI* 1980; **31**:55-59.
11. V Casella, T Ido, JS Fowler, RR MacGregor, **TJ Ruth**, AP Wolf. Anhydrous ^{18}F - F_2 for Radiopharmaceutical Preparation. *J Nucl Med* 1980;**21**:750-757.
12. GT Bida, RL Ehrenkaufner, JS Fowler, RR MacGregor, **TJ Ruth**, AP Wolf. The Effect of Target Gas Purity on the Chemical Form of ^{18}F during ^{18}F - F_2 Production Using the Neon/Fluorine (Ne/F_2) Target. *J Nucl Med* 1980;**21**:758-762.
13. GT Bida, **TJ Ruth**, AP Wolf. Experimentally Determined Thick Target Yields for the $^{14}\text{N}(p,\alpha)^{11}\text{C}$ reaction. *Radiochim Acta* 1980;**27**:181-185.

14. C-Y Shiue, **TJ Ruth**, AP Wolf, GJ Meyer. Synthesis of Astatine Compounds by Melt Method. *J Labelled Cpds and Radiopharm* 1981;**18**:1039-1046.
15. BW Wieland, DJ Schlyer, **TJ Ruth**, AP Wolf. Deuteron beam penetration in a neon gas-target for producing F-18. *J Labelled Cpds and Radiopharm* . 18: 27-29 (1981).
16. JS Fowler, RR MacGregor, AP Wolf, AA Farrell, KI Karlstrom, **TJ Ruth**. A Shielded Synthesis System for Production of ^{18}F -2-deoxy-2-fluoro-D-glucose [^{18}F FDG]. *J Nucl Med* 1981;**22**:376-380.
17. WD Bloomer, WH McLaughlin, **TJ Ruth**, PF Gordon, RD Neirincx, SJ Adelstein, AP Wolf. Astatine-211 Radiocolloid Cures Experimental Malignant Ascites. *Science* 1981;**212**:340-341.
18. MJ Adam, BD Pate, **TJ Ruth**, JM Berry, LD Hall. Cleavage of Aryl-Tin Bonds with Elemental Fluorine: Rapid Synthesis of [^{18}F] Fluorobenzene. *J Chem Soc Chem Commun* 1981;733.
19. JL Clark, PE Haustein, **TJ Ruth**, J Hudis, AA Caretto. Inclusive Production with 200 MeV Protons: Radiochemical Study of the $^{209}\text{Bi}(p,\pi^-,xn)^{210-x}\text{At}$ Reactions. *Phys Rev* 1982;**C26**:2073-2083.
20. MJ Adam, **TJ Ruth**, BD Pate, LD Hall. Site-Specific Bromination of Aromatic Compounds: A Rapid Method for Radio-Bromine Labelling. 1982; *J of Chemical Society- Chemical Communications*: 25-26.
21. JL Clark, PE Haustein, **TJ Ruth**, J Hudis, AA Caretto. Energy Deposition Accompanying Pion Double Charge Exchange: A Radiochemical Study of the $^{209}\text{Bi}(\pi^+, \pi^- xn)^{210-x}\text{At}$ reactions. *Phys Rev* 1983; **C27**:1126-1133.
22. MJ Adam, JM Berry, LD Hall, BD Pate, **TJ Ruth**. The Cleavage of Aryl-Metal Bonds by Elemental Fluorine: Synthesis of Arylfluorides. *Can J Chem* 1983;**61**:658-660.
23. RE Ehrenkauf, RR MacGregor, AP Wolf, JS Fowler, **TJ Ruth**, DJ Schlyer, BW Wieland. Production of H^{18}F by Deuteron Irradiation of a Neon-hydrogen Gas Target. *Radiochim. Acta* 1983; **33**:49-56.
24. B Evans, R Harrop, D Heywood, J MacKintosh, RW Moore, BD Pate, JG Rogers, **TJ Ruth**, C Sayre, J Sprenger, N van Oers, XY Guang. Engineering Developments on the UBC-TRIUMF Modified PETT VI Positron Emission Tomograph. *IEEE* 1983;**NS-30**:707-710.
25. RJ Nickles, ME Daube, **TJ Ruth**. An $^{18}\text{O}_2$ Target for the Production of [^{18}F]F $_2$. *Int J Appl Rad Isot* 1984; **35**:117-122.
26. WRW Martin, JH Beckman, DB Calne, MJ Adam, R Harrop, JG Rogers, **TJ Ruth**, CI Sayre, BD Pate. Cerebral Glucose Metabolism in Parkinson's Disease. *Can J Neuro Sci* 1984; **11**:169-174.
27. MJ Adam, **TJ Ruth**, S Jivan, BD Pate. The Use of C-18 Sep-Pak Cartridges to Simplify Routine Production of 2-deoxy-2-[^{18}F]fluoro-D-glucose. *Int J Appl Radiat Isot* 1984;**35**:985-986.
28. MJ Adam, **TJ Ruth**, S Jivan, BD Pate. Fluorination of Aromatic Compounds with F $_2$ and

- Acetyl Hypofluorite: Synthesis of ^{18}F -aryl Fluorides by Cleavage of Aryl-tin Bonds. *J Fluorine Chem* 1984;**25**:329-337.
29. JR Grierson, MJ Adam, **TJ Ruth**, BD Pate, Solid phase synthesis of ^{11}C - compounds. *J Labelled Cpds and Radiopharm* 1984; **21**:1184-1185.
30. MJ Adam, BF Abeysekera, **TJ Ruth**, S Jivan, BD Pate. Fluorination of Aromatic Compounds by Cleavage of Aryl-tin Bonds with $(\text{F-18})\text{F}_2$ and CH_3COOF . *J Labelled Cpds and Radiopharm* 1984;**21**:1238-1239.
31. DS Wilbur, MJ Adam, **TJ Ruth**, SR Garcia. An Evaluation of the Introduction of Stable Nuclides of Bromine into High Specific Activity Radiobrominations. *J Labelled Cpds and Radiopharm* 1984;**21**:767-772.
32. JM D'Auria, M Dombisky, L Moritz, **TJ Ruth** et al. Activation Measurements of the $^7\text{Li}(p,n)^7\text{Be}$ Reaction from 60-480 MeV. *Phys Rev* 1984;**C30**:1999-2002.
33. MJ Adam, **TJ Ruth**, S Jivan, BD Pate. The use of C-18 SepPak cartridges to simplify routine production of 2-deoxy-2- ^{18}F Fluoro-D-glucose. *Int J Appl Radiat Isot* 1984;**35**:985-986.
34. **TJ Ruth**. The Sequential production of $^{18}\text{F-F}_2$ and $^{15}\text{O-O}_2$ in a Gas Target. *Int J Appl Radiat Isot* 1985;**36**:107-110.
35. PL McGeer, S Kamo, R Harrop, BD Pate, **TJ Ruth** et al. Positron Emission and Magnetic Resonance Imaging of Suspected Alzheimer Diseased Patients. *Can J Neurol Sci* 1985;**12**:6-10.
36. M Dombisky, JM D'Auria, I Kelson, AI Yavin, TE Ward, JL Clark, **TJ Ruth**, G Sheffer. Inclusive Measurement of (p,π^+xn) Double Charge Exchange Reactions on Bismuth from Threshold to 800 MeV. *Phys Rev* 1985;**C32**:253-263.
37. **TJ Ruth**, P Malmberg, V Leung. Extraction of ^{11}C from the TRIUMF 500 MeV Isotope Production Facility. *IEEE* 1985;**NS-32**:3333-3334.
38. MJ Adam, **TJ Ruth**, Y Homma, BD Pate. Radiobrominations of Aromatic Compounds by Cleavage of Aryl-tin Bonds. *Int. J Appl Radiat Isot* 1985;**36**:935-937.
39. **TJ Ruth**, MJ Adam, JJ Burgerjon, J Lenz, BD Pate. A Gas Target for Radionuclide Production with 500 MeV Protons. *Int J Appl Radiat Isot* 1985;**36**:931-933.
40. DB Calne, JW Langston, WRW Martin, AJ Stoessl, **TJ Ruth**, MJ Adam, BD Pate, M Schuyler. Positron Emission Tomography After MPTP: Observations Relating to the Cause of Parkinson's Disease. *Nature* 1985;**317**:246-248.
41. MJ Adam, **TJ Ruth**, JR Grierson, B Abeysekera, BD Pate. Routine Synthesis of ^{18}F 6-Fluorodopa with ^{18}F -Acetylhypofluorite. *J Nucl Med* 1986;**27**:1462-1466.
42. PL McGeer, H Kamo, R Harrop, DKB Li, **TJ Ruth** et al. Positron Emission Tomography in Patients with Clinically Diagnosed Alzheimer's Disease. *Can Med Assoc J* 1986;**134**:597-607.

43. **TJ Ruth**, MJ Adam, D Morris, S Jivan. Microprocessor controlled system for automatic and semiautomatic synthesis. *J Label. Comp. Radiopharm.* **23**: 1185-1186 (1986).
44. MJ Adam, JR Grierson, **TJ Ruth**, S Jivan. Reaction of ^{18}F -acetyl hypofluorite with Derivatives of Dihydroxyphenylalanine: Synthesis of L- ^{18}F 6-fluorodopa. *Int J Appl Radiat Isot* 1986; **37**:877-882.
45. **TJ Ruth**, MJ Adam, D Morris, S Jivan. Microprocessor controlled system for automatic and semiautomatic syntheses of radiopharmaceuticals. *J Label. Comp. Radiopharm.* **23**: 1185-1186 (1986).
46. BW Wieland, GO Hendry, DG Schmidt, G Bida, **TJ Ruth**. Efficient small-volume O-18 water targets for producing F-18 fluoride with low energy protons. *J Label. Comp. Radiopharm.* **23**: 1212-1214 (1986).
47. BW Wieland, GO Hendry, DG Schmidt, G Bida, **TJ Ruth**. Efficient economical production of oxygen-15 labeled tracers with low energy protons. *J Label. Comp. Radiopharm.* **23**: 1221-1223 (1986).
48. G Bida, BW Wieland, **TJ Ruth**, DG Schmidt, GO Hendry, RE Keen. An economical target for N-13 production by proton-bombardment of a slurry of C-13 powder in O-16 water. *J Label. Comp. Radiopharm.* **23**: 1217-1218 (1986).
49. AJ Stoessl, WRW Martin, MR Hayden, MJ Adam, **TJ Ruth**, A Rajput, BD Pate, DB Calne. Dopamine in Huntington Disease - Studies Using Positron Emission Tomography. *Neurology* 1986; **36**:310.
50. MR Hayden, WRW Martin, AJ Stoessl, CM Clark, **TJ Ruth** et al. Positron Emission Tomography in the Early Diagnosis of Huntington's Disease. *Neurology* 1986; **36**:888-894.
51. TR Sykes, **TJ Ruth**, MJ Adam. Synthesis and Murine Tissue Uptake of Sodium [^{18}F] Fluoroacetate. *Nucl Med Biol* 1986; **13**:497-500.
52. AJ Stoessl, WRW Martin, CM Clark, MJ Adam, W Ammann, JH Beckman, M Bergstrom, R Harrop, JG Rogers, **TJ Ruth**, CI Sayre, BD Pate, DB Calne. PET Studies of Cerebral Glucose Metabolism in Idiopathic Torticollis. *Neurology* 1986; **36**:653-657.
53. WRW Martin, AJ Stoessl, MJ Adam, W Ammann, M Bergstrom, R Harrop, A Laihinan, JG Rogers, **TJ Ruth**, CI Sayre, BD Pate, DB Calne. Positron Emission Tomography in Parkinson's Disease: Glucose and Dopa Metabolism. *Adv Neurol* 1986; **45**:95-98.
54. AI Kassis, CR Harris, SJ Adelstein, **TJ Ruth**, R Lambrecht, AP Wolf. The In Vitro Radiobiology of Astatine-211 Decay. *Radiat Res* 1986; **105**:27-36.
55. MJ Adam, JR Grierson, **TJ Ruth**, S Jivan. Reaction of ^{18}F -Acetyl Hypofluorite with Derivatives of Dihydroxyphenylalanine: Synthesis of L- ^{18}F 6-Fluorodopa. *Int J Appl Radiat Isot* 1986; **37**:887-892.
56. P Cumming, BE Boyes, WRW Martin, MJ Adam, JR Grierson, **TJ Ruth**, EG McGeer. The

- Metabolism of [^{18}F]-6-Fluoro-L-3,4-Dihydroxyphenylalanine in the Hooded Rat. *J Neurochem* 1987;**48**:601-608.
57. P Cumming, BE Boyes, WRW Martin, MJ Adam, **TJ Ruth**, EG McGeer. Altered Metabolism of [^{18}F]-6-Fluorodopa in the Hooded Rat Following Inhibition of Catechol-o-methyl-transferase with U-0521. *Biochem Pharm* 1987;**36**:2527-2531.
58. TR Sykes, JH Quastel, MJ Adam, **TJ Ruth**, AA Noujaim. The Disposition and Metabolism of [^{18}F]-Fluoroacetate in Mice. *Biochem Arch* 1987;**3**:317-324.
59. MJ Adam, JR Grierson, **TJ Ruth**, K Pedersen, BD Pate. Routine Synthesis of Carbon-11-carboxyl-labeled L-dopa. *J Nucl Med* 1987;**28**:1599-1603.
60. RD Fross, WRW Martin, D Li, AJ Stoessl, MJ Adam, **TJ Ruth**, BD Pate, K Burton, DB Calne. Lesions of the Putamen: Their Relevance to Dystonia. *Neurology* 1987;**37**:1125-1129.
61. WRW Martin, AJ Stoessl, MJ Adam, W Ammann, M Bergstrom, R Harrop, A Laihinen, JG Rogers, **TJ Ruth**, CI Sayre, BD Pate, DB Calne. Positron Emission Tomography in Parkinson's Disease: Glucose and Dopa Metabolism. In: Parkinson's Disease. M Yahr, S Bergmann (eds). *Advances in Neurology* 1987;**45**:95-98.
62. WRW Martin, AJ Stoessl, M Palmer, MJ Adam, **TJ Ruth**, JR Grierson, BD Pate, DB Calne. PET Scanning in Dystonia. *Advances in Neurology* 1988;**50**:223-236.
63. P Cumming, M Hausser, WRW Martin, JR Grierson, MJ Adam, **TJ Ruth**, EG McGeer. Kinetics of In Vitro Decarboxylation and the In Vivo Metabolism of 2- ^{18}F and 6- ^{18}F -Fluorodopa in the Hooded Rat. *Biochem Pharmacol* 1988;**37**:247-250.
64. M Guttman, VW Yong, SU Kim, DB Calne, WRW Martin, MJ Adam, **TJ Ruth**. Asymptomatic Striatal Dopamine Depletion: PET Scans in Unilateral MPTP Monkeys. *Synapse* 1988; **2**:469-473.
65. CM Clark, H Klonoff, JS Tyhurst, **TJ Ruth**, MJ Adam, JG Rogers, R Harrop, WRW Martin, BD Pate. Regional Cerebral Glucose Metabolism in Identical Twins. *Neuropsychologia* 1988;**26**: 615-621.
66. MY Siddiqi, ADM Glass, **TJ Ruth**, M Fernando. Studies of the Regulation of Nitrate Influx by Barley Seedlings Using $^{13}\text{NO}_3^-$. *Plant Physiol* **90**:806-813 (1989).
67. **TJ Ruth**, K Pedersen, C Morin, G Ryley and C Morrison. A Fully Automated $^{11}\text{CO}_2$ Production/Dispensing System: A Study in Control Strategies. *J Label Compds Radiopharm* 1989; **26**:460.
68. EC Wolters, C-C Huang, C Clark, RF Peppard, J Okada, N-S Chu, MJ Adam, **TJ Ruth**, D Li, DB Calne. Positron Emission Tomography in Manganese Intoxication. *Ann Neurol* 1989; **26**:647-651.
69. M Guttman, RS Burns, WRW Martin, RF Peppard, MJ Adam, **TJ Ruth**, G Allen, RA Parker, NB Tulipan, DB Calne. PET Studies of Parkinsonian Patients Treated with Autologous

- Adrenal Implants. *Can J Neurol Sci* 1989; **16**:305-309.
70. **TJ Ruth**, BD Pate, R Robertson, JK Porter. A Review of Radionuclide Production for the Biosciences. *Nucl Med and Biol* 1989; **16**:323-336.
71. MY Siddiqi, ADM Glass, **TJ Ruth**, T.W. Rufty. Studies of the Uptake of Nitrate in Barley .1. Kinetics of $^{13}\text{NO}_3^-$ -Influx. *Plant Physiology* 1990;**93**:1426-1432.
72. ADM Glass, MY Siddiqi, **TJ Ruth**, W Rufty. Studies of the Uptake of Nitrate in Barley .2. Energetics. *Plant Physiology* 1990;**93**:1585-1589.
73. A.U. Kafkafi, M.Y. Siddiqi, R.J. Ritchie, A.D.M. Glass, **T.J. Ruth**, Reduction of $^{13}\text{NO}_3^-$ influx and ^{13}N translocation by tomato and melon varieties after short exposure to Ca^{2+} and K^+ chloride salts. *J. Plant Nutrition* 15: 959-975, (1992).
74. BD Pate, BJ Snow, KA Hewitt, KS Morrison, **TJ Ruth**, DB Calne. The Reproducibility of Striatal Uptake Data Obtained with Positron Emission Tomography and [^{18}F] L-6-Fluorodopa Tracer in Non-human Primates. *J Nucl Med* 1991;**32**:1246-1251.
75. MH Bhatt, BJ Snow, WRW Martin, BD Pate, **TJ Ruth**, DB Calne. Positron Emission Tomography Suggests that the Rate of Progression for Idiopathic Parkinsonism Is Slow. *Ann Neurol* 1991;**29**: 673-677.
76. GL-Y Chan, KA Hewitt, BD Pate, CJ Schofield, MJ Adam, **TJ Ruth**. Routine Determination of [^{18}F]-L-6-Fluorodopa and its Metabolites in Blood Plasma is Essential for Accurate Positron Emission Tomography Studies. *Life Sciences* 1991; **50**:309-318.
77. TW Rufty Jr., MY Siddiqi, ADM Glass, **TJ Ruth**. Altered $^{13}\text{NO}_3^-$ Influx in Phosphorus Limited Plants. *Plant Science* 1991;**76**:43-48.
78. M.Y. Siddiqi, A.D.M. Glass, **T.J. Ruth**, Studies of the uptake of nitrate in barley III. Compartmentation of NO_3^- . *J. Exp. Bot.* **42**: 1455-1463 (1991).
79. MJ Adam, **TJ Ruth**. Production of Radionuclides for Clinical PET Applications. *Synth and Appl of Isot Lab Comp* 1991:165-170.
80. JL Hutter, **TJ Ruth**, PW Martin. Production of ^{77}Br for TDPAC Studies. *Appl Radiat Isot* 1992;**43**:1393-1398.
81. V Sossi, KR Buckley, BJ Snow, JE Holden, KS Morrison, BD Pate, **TJ Ruth**. Recovery of the Human Striatal Signal in a Slice Oriented PET Tomograph. *J Nucl Med* 34(3):481-7 (1993).
82. GL-Y Chan, KS Morrison, JE Holden, **TJ Ruth**. Plasma L- [^{18}F]6-Fluorodopa Input Function: A Simplified Method. *J Cerebral Blood Flow and Metabolism* 1992;**12**:881-884.
83. M Cordes, V Sossi, BJ Snow, **TJ Ruth**, DB Calne. Quantitative Measurements of the Striatal [^{18}F]-L-DOPA Rate Constant K_i and its Side-to Side Difference in Parkinsonism Plus Disorders using PET. *Med Tech* 1992;**3**:107-111.

84. JP Hammerstadt, BD Pate, KA Hewitt, GL-Y Chan, **TJ Ruth**, DB Calne. The Transport of L-6 Fluorodopa and its Metabolites from Blood to CSF and Brain. *Ann Neurol*. 1993; **34**:603-8.
85. BD Pate, EG McGeer, KA Hewitt, BJ Snow, **TJ Ruth**, DB Calne. Cell Counts vs. Fluorodopa Uptake in Monkeys. *Ann Neurol* (1993).
86. FJG Vingerhoets, BJ Snow, M Schulzer, S Morrison, **TJ Ruth**, JE Holden, S Cooper, DB Calne. Reproducibility of 18F-6-fluorodopa positron emission tomography in normal human subjects. *J Nucl Med* (1994) **35**:18-24.
87. M. Wang, M.Y. Siddiqi, **T.J. Ruth**, A.D.M. Glass, Ammonium uptake by rice roots. I. fluxes and subcellular distribution of $^{13}\text{NH}_4^+$. *Plant Physiol*. **103**:1249-1258 (1993).
88. M. Wang, M.Y. Siddiqi, **T.J. Ruth**, A.D.M. Glass, Ammonium uptakes by rice roots. II. Kinetics of $^{13}\text{NH}_4^+$ influx across the plasmalemma. *Plant Physiol*. **103**:1259-1267 (1993).
89. B.J. King, M.Y. Siddiqi, **T.J. Ruth**, R.L. Warner, and A.D.M. Glass, Feedback regulation of nitrate influx in barley roots by nitrate, nitrate and ammonium. *Plant Physiol*. **102**: 1279-1286 (1993).
90. BD Pate, T Kawamata, T Yamada, EG McGeer, KA Hewitt, BJ Snow, **TJ Ruth**, DB Calne. Correlation of Striatal Fluorodopa Uptake in the MPTP Monkey with Dopaminergic Indices. *Ann Neurol* 1993;**34**:331-338.
91. MR Cackette, **TJ Ruth**, JS Vincent. ^{82}Sr Production from Metallic Rb Targets and Development of ^{82}Rb Generator Systems. *Appl Radiat Isot*, **44**: 917-922 (1993).
92. BD Pate, EG McGeer, KA Hewitt, BJ Snow, **TJ Ruth**, DB Calne Correlation of striatal fluorodopa uptake in the MPTP monkey with dopaminergic indices. *Ann Neurol* 34:331-8 (1993).
93. JM D'Auria, **TJ Ruth**. The SFU/TRIUMF Radiochemistry Institute: An Intensive Training Program for Radiopharmaceutical Chemistry. *J Radio Nucl Chem* 1993; **171**: 219-224.
94. FJG Vingerhoets, BJ Snow, M Schulzer, S Morrison, **TJ Ruth**, JE Holden, S Cooper, DB Calne. Reproducibility of ^{18}F -6-fluorodopa positron emission tomography in normal human subjects. *J Nucl Med* 1994; **35**: 18-24.
95. SK Zeisler, **TJ Ruth**, MP Rektor. A photodiode radiation detector for PET chemistry modules. *Appl Radiat Isot* 1994; **45**: 377-378.
96. BD Pate, T Kawamata, T Yamada, EG McGeer, KA Hewitt, BJ Snow, **TJ Ruth**, DB Calne. Correlation of Striatal Fluorodopa Uptake in the MPTP Monkey with Dopaminergic Indices. *Ann Neurol* 1993; **34**: 331-338.
97. V. Sossi, M.W. Stazyk, P.E. Kinahan, **T.J. Ruth**, Performance of the Single Slice Rebinning Technique as Evaluated by Phantom Studies. *Physics in Medicine and Biology*, 1994; **39**: 369-380.
98. V. Sossi, K.R. Buckley, B.J. Snow, J.E. Holden, K.S. Morrison, B.D. Pate, **T.J. Ruth**,

- Recovery of the Human Striatal Signal in a Slice Oriented Pet Tomograph. *J. Nucl. Med.* 1993; **34**: 481-87.
99. M. Cordes, B.J. Snow, K.S. Morrison, V. Sossi, **T.J. Ruth**, D.B. Calne, Parametric Imaging of the Rate Constant Using [^{18}F]-L-Dopa PET in Progressive Supranuclear Palsy. *Neuroradiol* **35**: 404-409 (1993).
100. V. Sossi, M.W. Stazyk, P.E. Kinahan, **T.J. Ruth**, Basal ganglia studies with 3D acquisition and 2D reconstruction on the retractable septa PET scanner. *J. Assist. Comput. Tomo.*, **18**: 1004-1009 (1994).
101. M. Cordes, B.J. Snow, S. Cooper, M. Schulzer, B.D. Pate, **T.J. Ruth**, D.B. Calne. Age-dependent decline of nigrostriatal dopaminergic function: A positron emission tomographic study of grandparents and their grandchildren. *Ann. Neurol* **36**: 667-670 (1994).
102. G.L-Y.Chan, D.J. Doudet, T. Dobko, K.A. Hewitt, C. Schofield, B.D. Pate, **T.J. Ruth**. Routes of administration and effect of Carbidopa pretreatment on ^{18}F -Fluorodopa/PET scans in non-human primates. *Life Sciences*, **56**: 1759-1766 (1995).
103. S. Zeisler, **Ruth, T. J.**: Preparation of $^{48}\text{V-VO}_2$ for Biomedical Studies. *J. Radioanalyt. Nucl. Chem., Letters*, **200**: 283-290 (1995).
104. PA. Culbert, M.J. Adam, E.T. Hurtado, J.M.A. Huser, S. Jivan, J. Lu, **T.J. Ruth**, S.K. Zeisler. Automated synthesis of ^{18}F -FDG using tetrabutylammonium bicarbonate. *Applied Radiat. Isotop.*, **46**: 887-891 (1995).
105. F.J.G. Vingerhoets, M. Schulzer, **T.J. Ruth**, J.E. Holden, B.J. Snow. The reproducibility and discriminating ability of [^{18}F]-6-fluorodopa positron emission tomography in Parkinson's disease. *J. Nucl. Med.* **37**:421-6(1996).
106. V. Sossi, J.S. Barney, R. Harrison, **T.J. Ruth**. Effect of scatter from radioactivity outside of the field of view in 3D PET. *IEEE, TNS42*: 1157-61 (1995).
107. C. Moisan, J.G. Rogers, K.R. Buckley, **T.J. Ruth**, M. W. Stazyk, G. Tsang. Design of a depth encoding large aperture PET camera. *IEEE, TNS42*: 1041-1050 (1995).
108. J.E.Holden, C.J. Endres, D.J. Doudet, B.D. Pate, B.J. Snow, **T.J. Ruth**. Estimation of the Rate of Reversibility by an Extended Graphical Analysis of 6-Fluoro-L-Dopa Trapping: Effect of Inhibition of Catechol-O-Methyltransferase on the Rate of Reversibility. *J. Nucl. Med.* **38**: 1568-74 (1997).
109. A.Roberts, **T.J. Ruth**. A reevaluation of $^{nat}\text{Ne}(p,x)^{18}\text{F}$ yields with 19-41 MeV protons. *Appl. Radiat. Isot.* **46**: 563-67 (1996).
110. D. Doudet, G.L-Y. Chan, J.E. Holden., K.S. Morrison, R.J. Wyatt, **T.J. Ruth**. Effects of O-Methyltransferase Inhibition of 6-Fluoro-l-Dopa Trapping in MPTP- Induced Parkinsonism in Monkeys. *Neuropharmacology*. **36**: 363-371(1997).
111. V. Sossi, J.S. Barney, **T.J. Ruth**. Noise reduction in the dual energy window scatter

- correction approach in 3D PET. *IEEE NS43*: 1996.
112. D. Doudet, G.L-Y. Chan, J.E. Holden, K.S. Morrison, R.J. Wyatt, **T.J. Ruth**. Effects MAO and COMT Inhibition on the turnover of dopamine: a FDOPA PET study. *Eur. J. Pharmacol.* **334**: 31-38 (1997).
113. G.L-Y. Chan, J.E. Holden, J. Stoessl, A. Sami, D.J. Doudet, T. Dobko, K.S. Morrison, M.J. Adam, M. Schulzer, **T.J. Ruth**. Reproducibility of the distribution of [¹¹C]Sch23390 a dopamine D1 receptor tracer in normal subjects. *J. Nuc. Med.* **39**:792-797 (1998).
114. R. de la Fuente-Fernandez, A. Kishore, B.J. Snow, M. Schulzer, C.S.Lee, **T.J. Ruth**, A.J. Stoessl, D.B.Calne. Effect of aging on the dopaminergic function of caudate nuclei in idiopathic parkinsonism. *Parkinson's and Related Disorders*. In press (1998).
115. A.J. Stoessl, **T.J. Ruth**. Neuroreceptor Imaging: new developments in PET and SPECT imaging of neuroreceptor binding. *Current Opinion in Neurology*. **11**: 327-333 (1998).
116. D.J. Doudet, G.L.Y. Chan, J.E. Holden, E. McGeer, T.A. Aigner, R.J. Wyatt, **T.J. Ruth**. 6-Fluoro-L-Dopa PET studies of the turnover of dopamine in MPTP-induced Parkinsonism in monkeys. *Synapse* **29**: 225-232 (1998).
117. Y. Wang, G.L-Y. Chan, J.E. Holden, T. Dobko, E. Mak, M. Schulzer, J.M. Huser, B.J. Snow, **T.J. Ruth**, D.B. Calne, A.J. Stoessl. Age-dependent decline of dopamine D1 receptors in human brain: a PET study. *Synapse*, **30**: 56-61 (1998).
118. Setyawati, K.H. Thompson, Y. Sun, D.M. Lyster, C. Vo, V.G. Yuen, J.H. McNeill, **T.J. Ruth**, S. Zeisler, C. Orvig. Vanadium uptake, distribution and excretion of ⁴⁸V-labeled compounds in rat. Comparison of bis(malto)oxovanadium(IV) (BMOV) and vanadyl sulfate trihydrate (VS) by conventional and compartmental analyses. *J. App. Physiol.* **84**: 569-575 (1998).
119. T.R. Oakes, V.Sossi, **T.J. Ruth**. Normalization for 3D PET with a low-scatter planar source and measured geometric factors. *Physics Med. Biol.* **43**: 961-972 (1998).
120. Kishore A, Nygaard TG, de la Fuente Fernandez R, Naini AB, Schulzer M, Mak E, **Ruth TJ**, Stoessl AJ, Calne DB, Snow BJ. Striatal D2 receptors in symptomatic and asymptomatic carriers of dopa-responsive dystonia measured with [¹¹C]-raclopride and positron emission tomography. *Neurology* 1998, **50**:1028-1032.
121. V. Sossi, T.R. Oakes, G.L-Y. Chan, **T.J. Ruth**. Quantitative comparison of 3D and 2D PET with human brain studies. *J. Nucl. Med.* **39**: 1714-1719(1998).
122. V. Sossi, TR Oakes, **TJ Ruth**, A comprehensive evaluation of quantitation for 3D PET brain imaging using phantom studies. *Physics Med. Biol.* **43**: 2615-30 (1998).
123. G.L-Y. Chan, J.E. Holden, J. Stoessl, A. Sami, D.J. Doudet, T. Dobko, K.S. Morrison, M.J. Adam, M. Schulzer, **T.J. Ruth**. Reproducibility studies with ¹¹C-DTBZ, a monamine vesicular transporter inhibitor in normal human subjects. *J. Nuc. Med.* **40**: 283-289 (1999).
124. D.J. Doudet, G.L.Y. Chan, S. Jivan, O.T. DeJesus, T.A. Aigner, **T.J. Ruth**, J. Holden.

- Evaluation of the DA presynaptic integrity: 6-¹⁸F-fluoro-L-dopa vs 6-¹⁸F-fluoro-L-m-tyrosine. *J. Cereb. Blood Flow Metab.*, **19**:278-287 (1999).
125. Cohen PF, Sossi V, Johnson RR, **Ruth T.** PET in Canada. Historical Perspectives, Current Status, Challenges to Future Growth. *Clin Positron Imaging.* (1999) **2**:345.
126. R. Lange, J.M. D'Auria, U. Geisen, J.S. Vincent, **T.J. Ruth.** Preparation of a ⁴⁴Ti target. *Nucl. Instr. Meth. A***423**: 247-255(1999).
127. A.J. Stoessl, **T.J. Ruth.** Radionuclide imaging in Parkinson's disease. *Neuroscience News.* **2**:53-60 (1999).
128. L.N. Yatham, P. F. Liddle, J. Dennie, I-S. Shiah, M. J. Adam, C. J. Lane, R. W. Lam, **T.J. Ruth.** Decrease in brain serotonin 2 receptor binding in patients with major depression following desipramine treatment: a positron emission tomography study with fluorine-18-labeled setoperone. *Arch. Psychiatry.* **56**: 705-711 (1999).
129. Krzywinski M, Sossi V, **Ruth TJ.** Comparison of 3DFB and FORE, 2DFBP, OSEM, and SAGE with phantom and dynamic human scans in 3D PET. *IEEE Trans Nucl Sci*; **46**: 1114-1120 (1999).
130. V.Sossi, J.E. Holden, Chan G, Krzywinski M,A.J. Stoessl, **T.J. Ruth.** Analysis of four dopaminergic tracers kinetics using two different tissue input function methods. *J. Cere. Blood Flow Metabol.* **20**:653-660 (2000).
131. De la Fuente-Fernandez R, Pal PK, Vingerhoets FJG, Kishore A, Schulzer M, Mak EK, **Ruth TJ,** Snow BJ, Calne DB, Stoessl AJ (1999) Evidence for impaired presynaptic dopamine function in parkinsonian patients with motor fluctuations. *J. Neural Transm.* **107**:49-57 (2000).
132. C.S. Lee, A. Samii, V. Sossi, **T.J. Ruth,** M. Schulzer, P.K. Pal, D.B. Calne, A.J. Stoessl. In vivo PET evidence for compensatory changes in presynaptic dopaminergic nerve terminals in Parkinson's disease. *Ann Neurol* (2000); **47**:493-503.
133. R. de la Fuente-Fernández, A. Kishore, **T. J. Ruth,** D. B. Calne, A. J. Stoessl. Nigrostriatal dopamine system and motor lateralization. *Behavioural Brain Res.* **112**: 63-68 (2000).
134. E. T.C. Ngan, **T.J. Ruth,** P.F. Liddle. Decreased serotonin 2A receptor densities in neuroleptic-naive patients with schizophrenia: A PET study using [¹⁸F]setoperone. *American J. Psychiatry* **157**: 1016-1018 (2000).
135. K.R. Buckley, J. Huser, S. Jivan, K.S. Chun, **T.J. Ruth.** ¹¹C-methane production in small volume, high pressure gas targets. *Radiochimica Acta.* **88**:201-205 (2000).
136. R. de la Fuente-Fernández, Jian-Qiang Lu, V. Sossi, S. Jivan, M. Schulzer, J. E. Holden, C.S. Lee, **T. J. Ruth,** D. B. Calne, A. J. Stoessl. Biochemical variations in the synaptic level of dopamine precede motor fluctuations in Parkinson's disease: PET evidence for increased dopamine turnover. *Ann. Neurol.* **49**:298-303 (2001). (Subject of an Editorial same issue).

137. **T.J. Ruth**, K.R. Buckley, K.S. Chun, E.T. Hurtado, S. Jivan, S. Zeisler. A proof of principle for targetry to produce ultra high quantities of ^{18}F -Fluoride. *Appl. Radiat. Isotopes*. **55**: 457-461, 2001.
138. Yatham LN, Liddle PF, Shiah IS, Scarrow G, Lam RW, Adam MJ, Zis AP, **Ruth TJ**: Brain 5-HT₂ receptor density in patients with major depression: A PET study. *Archives of General Psychiatry*. **57**:850-858 (2000).
139. DJ Doudet, **TJ Ruth**. Imaging the brain in Parkinson's Disease. *BC Medical Journal*. **43**: 148-152(2001).
140. Yatham LN, Liddle PF, Shiah IS, Lam RW, Adam MJ, Zis AP, **Ruth TJ**: Effects of a rapid tryptophan depletion on brain 5-HT₂ receptors: A PET study. *British J. Psychiatry*. **178**: 448-453 (2001).
141. V Sossi, B Pointon, C. Boudoux, P Cohen, K. Hudkins, S Jivan, K Nitzek, J deRosario, C. Stevens, **TJ Ruth**. NEMA NU 2-2000+ performance measurements on an ADAC MCD camera. *IEEE*, **48**:1518 –1523 (2001).
142. Sossi, V.; Pointon, B.; Cohen, P.; Johnson, R.R.; **Ruth, T.J.** Effect of shielding the radioactivity outside the field of view on image quality in a dual head coincidence [PET camera]. Nuclear Science, *IEEE*, **47**:1561 -1566 (2000).
143. R de la Fuente-Fernández, **T J Ruth**, V Sossi, M Schulzer, D B Calne, A J Stoessl. Expectation and Dopamine Release: Mechanism of the Placebo Effect in Parkinson's Disease. *Science* **293**: 1164-1166 (2001).
144. E. Fosshag, M. Hecht, K. R. Buckley, D.W. Becker, K. Jayamanna, J. M. D'Auria, J. S. Vincent, **T.J. Ruth**. A Target System for the Production of ^{15}O Beams for ISAC. *NIM*. **A480**: 124-127 (2002).
145. R de la Fuente-Fernández, A.S. Lim, V Sossi, JE Holden, D B Calne, **T J Ruth** A J Stoessl. Apomorphine-induced changes in synaptic dopamine levels: PET evidence for pre-synaptic inhibition. *JCBF* **21**: 1151-1159 (2001).
146. E.T.C. Ngan, C. J. Lane, **T. J. Ruth**, P. F, Liddle. Immediate and Delayed effects of Risperidone on Cerebral Metabolism in Neuroleptic Naïve Schizophrenia: Correlations with Symptom change. *Journal of Neurology, Neurosurgery and Psychiatry* (2001) **72**:106-10.
147. JE Holden, S Jivan, **TJ Ruth**, DJ Doudet. In vivo receptor assay with multiple ligand concentrations: an equilibrium approach. *J Cereb Blood Flow Metab*. **22**:1132-41 (2002).
148. DJ Doudet, S Jivan, **TJ Ruth**, JE Holden. Density and affinity of the dopamine D₂ receptors in aged symptomatic and asymptomatic MPTP-treated monkeys: PET studies with [^{11}C]raclopride., *Synapse*. **44**:198-202 (2002).
149. DJ Doudet, JE Holden, **TJ Ruth**, TA Aigner and RJ Wyatt. In vivo PET studies of the dopamine D₁ receptors in rhesus monkeys with long-term MPTP-induced Parkinsonism. *Synapse*, **44**:111-5 (2002).

150. V Sossi, R de la Fuente-Fernández, JE Holden, DJ Doudet, J McKenzie, AJ Stoessl, **TJ Ruth**. Increase in dopamine turnover occurs early in Parkinson's disease: evidence from a new modeling approach to PET ^{18}F -fluorodopa data. *J Cereb Blood Flow Metab.* **22**:232-9 (2002).
151. Sossi V, Holden JE, de la Fuente-Fernandez R, **Ruth TJ**, Stoessl AJ. Effect of dopamine loss and the metabolite 3-O-methyl- ^{18}F fluoro-dopa on the relation between the ^{18}F -fluorodopa tissue input uptake rate constant K_{occ} and the ^{18}F fluorodopa plasma input uptake rate constant K_i . *J Cereb Blood Flow Metab.* 2003 Mar;**23**:301-9.
152. LN Yatham, PF Liddle, I-S Shiah, RW Lam, E Ngan, G Scarrow, M Imperial, J Stoessl, V Sossi, **TJ Ruth**. PET study of the effects of valproate on dopamine D(2) receptors in neuroleptic- and mood-stabilizer-naive patients with nonpsychotic mania. *American Journal of Psychiatry.* **159**:1718-23 (2002).
153. ETC Ngan, CJ Lane, **TJ Ruth**, PF Liddle. Immediate and delayed effects of risperidone on cerebral metabolism in neuroleptic naive schizophrenic patients: correlations with symptom change. *J Neurol Neurosurg Psychiatry.* **72**:106-10. (2002).
154. Yatham LN, Liddle PF, Shiah IS, Lam RW, Ngan E, Scarrow G, Imperial M, Stoessl J, Sossi V, **Ruth TJ**. PET study of ^{18}F 6-fluoro-L-dopa uptake in neuroleptic- and mood-stabilizer-naive first-episode nonpsychotic mania: effects of treatment with divalproex sodium. *Am J Psychiatry.* 2002, **159**:768-74.
155. T.E. Barnhart, A.K. Converse, K.A. Dabbs, R.J. Nickles, K. Buckley, S. Jivan, **T.J. Ruth**, A.D. Roberts. Water-cooled grid support system for high power irradiation with thin target windows. *Appl. Radiat. Isotopes.* **58**:21-26 (2003).
156. de la Fuente-Fernandez R, Phillips AG, Zamburlini M, Sossi V, Calne DB, **Ruth TJ**, Stoessl AJ. Dopamine release in human ventral striatum and expectation of reward. *Behav Brain Res.* (2002);**136**:359-63.
157. TL Collier, R Lecomte, TJ McCarthye, S Meiklef, **TJ Ruth**, F Scopinaro, A Signore, H VanBrocklin, C Van de Wielei, RN Waterhouse. Assessment of cancer-associated biomarkers by positron emission tomography: Advances and challenges. *Disease Markers* **18**: 211-247 (2002).
158. R. de la Fuente-Fernández, A.S. Lim, V. Sossi, M.J. Adam, **T.J. Ruth**, D.B. Calne, A.J. Stoessl, C.S. Lee. Age and severity of nigrostriatal damage at onset of Parkinson's disease, *Synapse*, **47**: 152-8(2003).
159. R de la Fuente-Fernández, S Furtado, M Guttman, Y Furukawa, CS Lee, DB Calne, **TJ Ruth**, SJ Kish, and AJ Stoessl. VMAT2 binding is elevated in dopa-responsive dystonia: Visualizing empty vesicles by PET. *Synapse*, **49**:20-8 (2003).
160. Lapi, S., **T.J. Ruth**, A. Zyuzin, J.M. D'Auria.. "Production of an Intense ^{15}O Radioactive Ion Beam using low energy protons". *Nucl Instr. Meth.* **204**: 444-446 (2003).
161. G-J. Beyer, **TJ Ruth**. The role of electromagnetic separators in the production of radiotracers for bio-medical research and nuclear medical application. *Nucl. Instr. Meth. B.* **204**:

- 694-700 (2003).
162. Kumar A, Mann S, Sossi V, **Ruth TJ**, Stoessl AJ, Schulzer M, Lee CS. [¹¹C]DTBZ-PET correlates of levodopa responses in asymmetric Parkinson's disease. *Brain*, **126**: 2648-2655 (2003).
163. V. Astakhov, P Gumplinger, C Moisan, **TJ Ruth**, V Sossi. Effect of depth of interaction decoding on resolution in PET: a simulation study. *IEEE NS50*: 1373-1378 (2003).
164. DT Britto, **TJ Ruth**, S Lapi, HJ Kronzucker, Cellular and whole-plant chloride dynamics in barley: Insights into chloride-nitrogen interactions and salinity responses. *Planta*, 218: 615-622 (2004).
165. M. Zamburlini, R. de la Fuente-Fernandez, A.J. Stoessl, **TJ Ruth** V Sossi. Impact of different realignment algorithms on the SPM analysis of ¹¹C-raclopride PET studies. *IEEE Trans Nucl. Sci.* 51: 205-211 (2004).
166. AR. Studenov, S. Jivan, M.J. Adam, **T.J. Ruth**, K.R. Buckley. Studies of the Mechanism of the *In-Loop* Synthesis of Radiopharmaceuticals. *Applied Radiation. Isotope*, 61: 1195-1201 (2004).
167. A.Rahmim, M. Lenox, A. J. Reader, C. Michel, Z. Burbar, **T. J. Ruth**, V. Sossi. Statistical list-mode image reconstruction for the high resolution research tomograph. *Phys Med Biol.* 2004; 49:4239-58.
168. KR Buckley, S Jivan, **TJ Ruth**. Improved Yields for the In-Situ Production of [¹¹C]CH₄ Using a Niobium Target Chamber. *Nucl. Med. Biol.* 31:825-827, 2004.
169. Lane CJ, Ngan ET, Yatham LN, **Ruth TJ**, Liddle PF. Immediate effects of risperidone on cerebral activity in healthy subjects: a comparison with subjects with first-episode schizophrenia. *J Psychiatry Neurosci.* 29:30-7; 2004.
170. Lee CS, Schulzer M, de la Fuente-Fernandez R, Mak E, Kuramoto L, Sossi V, **Ruth TJ**, Calne DB, Stoessl AJ. Lack of regional selectivity during the progression of Parkinson disease: implications for pathogenesis. *Ann of Neurol.* 61(12):1920-5 (2004).
171. Rahmim A, Lenox M, Reader AJ, Michel, Burbar Z, **Ruth TJ**, Sossi V, Weighted Iterative List-Mode reconstruction with random correction for the high resolution research tomograph, *Physics in Medicine and Biology*; **49** (2004) 4239–4258.
172. Sossi V, de la Fuente-Fernandez R, Holden JE, M Schulzer, **Ruth TJ**, Stoessl AJ. Changes of Dopamine Turnover in the Progression of Parkinson's Disease as Measured by Positron Emission Tomography: Their Relation to Disease-Compensatory Mechanisms. *J. Cereb. Blood Flow & Metab.*, 24:869-876 2004.
173. A.Rahmim, P. Bloomfield, S. Houle, M. Lenox, C. Michel, K.R. Buckley, **T.J. Ruth**, V. Sossi. Motion compensation in histogram-mode and list-mode EM reconstructions: Beyond the event-driven approach. *IEEE NS*; 51:2588 – 2596 (2004).

174. V. Sossi, K. R. Buckley, P. Piccioni, A. Rahmim, M.-L. Camborde, S. Lapi, **T.J. Ruth**. Printed Sources For Positron Emission Tomography (PET) *IEEE NS*; 52, (2005): 114 - 118.
175. AR Studenov, MJ Adam, JS Wilson, **TJ Ruth**. New radiolabelling chemistry: Synthesis of phosphorus- ^{18}F fluorine compounds. *J Label. Comp. Radiopharm.* 48: 497-500 (2005).
176. JR Adams, H van Netten, M Schulzer, E Mak, J McKenzie, A Strongosky, V Sossi, **TJ Ruth**, CS Lee, M Farrer, T Gasser, RJ Uitti, DB Calne, ZK Wszolek, AJ Stoessl. PET in LRRK2 mutations: Comparison to sporadic Parkinson's disease and evidence for presymptomatic compensation. *Brain*, 2005; 128:2777-85.
177. V Sossi, G Tropini, D Doudet, M-L Camborde, A Rahim, **TJ Ruth**. The influence of measurement uncertainties on the evaluation of the distribution volume ratio and binding potential in rat studies on a microPET R4: a phantom study. *Phys Med Biol.* 2005; 50:2859-69.
178. R Ting, MJ Adam, **TJ Ruth**, DM Perrin. Arylfluoroborates and Alkylfluorosilicates as Potential PET Imaging Agents: High Yielding Aqueous Biomolecular ^{18}F -Labeling. *J. Am. Chem. Soc.* (2005), 127: 13094-13095
179. de la Fuente-Fernandez R, Sossi V, Huang Z, Furtado S, Lu J-Q, Calne DB, **Ruth TJ**, Stoessl AJ. Levodopa-induced changes in synaptic dopamine levels increase with progression of Parkinson's disease: Implications for Dyskinesias; *Brain*. 2004;127:2747-54.
180. KM Koochesfahani, R de la Fuente-Fernandez, V Sossi, M Schulzer, L Yatham, **TJ Ruth**, S Blinder, AJ Stoessl. Oral methylphenidate fails to elicit significant changes in synaptic dopamine levels in Parkinson's disease (PD) patients: positron emission tomographic studies (PET). *Movement Disorders*, 21:970-975. (2006).
- 181.** M. Trinczek, S. Lapi, B. Guo, F. Ames, K.R. Buckley, J.M. D'Auria, K. Jayamanna, W.P. Liu, C. Ruiz, **T.J. Ruth**. Production of intense radioactive beams at ISAC using low-energy protons. *Can. J. Phys.*, 84: 325- 333 (2006).
182. L.N. Yatham, P.F. Liddle, R.W. Lam, M.J. Adam, K. Solomons, M. Chinnapalli, **T.J. Ruth**. A Positron Emission Tomography Study of the Effects of Treatment with Valproate on Brain 5-HT_{2A} Receptors in Acute Mania. *Bipolar Disord.* 2005;7 Suppl 5:53-7
183. Doudet DJ, Rosa-Neto P, Munk OL, **Ruth TJ**, Jivan S, Cumming P. Effect of age on markers for monoaminergic neurons of normal and MPTP-lesioned rhesus monkeys: A multi-tracer PET study. *Neuroimage.* 2006; 30:26-35.
184. Doudet DJ, **Ruth TJ**, Holden JE. Sequential versus nonsequential measurement of density and affinity of dopamine D₂ receptors with [^{11}C]raclopride: 2: effects of DAT inhibitors. *J Cereb Blood Flow Metab.* 2006; 26:28-37.
185. Guo, B., Liu, W.P., Trinczek, M., Lapi, S, Ames, F., Buckley, K.R., D'Auria, J.M., Jayamanna, K., Ruiz, C., **Ruth, T.J.** Production of intense radioactive beams using low energy protons. *High Energy Physics and Nuclear Physics* (Chinese edition) 30: 679-679 (2006).
186. V Sossi, S McCormick, R Kornelsen, EM Strome, **TJ Ruth**, DJ Doudet. Effect of

- anesthesia on DTBZ and MP binding as evaluated by a Concord-CTI microPET imaging and post mortem measures. *Mol. Imaging Biol.* In press, 2006.
187. S-J Kim, DJ Doudet, AR Studenov, C Nian, **TJ Ruth**, SS Gambhir, CHS McIntosh. Quantitative micro positron emission tomography (PET) imaging for the *in vivo* determination of pancreatic islet graft survival. *Nat. Med.* 12:1423-8 (2006).
188. S-J Kim, DJ Doudet, AR Studenov, C Nian, **TJ Ruth**, SS Gambhir, CHS McIntosh. Seeing is believing - In vivo functional real-time imaging of transplanted islets using positron emission tomography (PET). *Nature Protocols*
http://www.natureprotocols.com/2006/12/21/seeing_is_believing_in_vivo_fu.php.
189. EWK Young, K Buckley DM Martinez, S Jivan, JA Olson, V Sossi, **TJ Ruth** "Sedimentation of Papermaking Fibres", *Am Inst Chem Eng J.* 52(8): 2006
190. JT Wong, PTW Kim, AL-F Mui, ST Chung, V Sossi, D Doudet, D Green, **T Ruth**, R Parsons, CB Verchere, CJ Ong. Pten haploinsufficiency promotes insulin hypersensitivity. *Diabetologia*, 50:395-403. (2007).
191. S Lapi, J Wilson, S McQuarrie, J Publicover, M Schueller, D Schyler, J Ressler, **TJ Ruth**. Measurement of cross sections production of $^{181-186}\text{Re}$ isotopes from proton bombardment of natural tungsten. *Appl. Radiat. Isotopes.* 65:345-9 2007.
192. S Heath, K Buckley, DM Martinez, S Lapi, JA Olson, **TJ Ruth**. Some Observations of the Flow of a Semi-Dilute Fibre Suspension Through a Sudden Expansion Using Positron Emission Tomography. *Amer. Inst. Chem. Eng.* 53:327-334, 2007.
193. DTT Yapp, **TJ Ruth**, MJ Adam, D Green, M Gleave. Non-invasive evaluation of tumor model for prostate cancer with ^{18}F -EF5 and positron emission tomography. *Brit. J. Urology International.* 99:1154-60 (2007).
194. DJ Doudet, P Rosa-Netto, **TJ Ruth**, S Jivan, P Cumming. Mapping of markers for monoaminergic neurons of normal and MPTP poisoned rhesus monkeys: A multi-tracer PET study. *Neuroimage.* 30: 26-35 (2006).
195. V Sossi, R de la Fuente-Fernández, M Schulzer, A Troiano, **TJ Ruth**, AJ Stoessl. Dopamine transporter relation to dopamine turnover in Parkinson's: a PET study. *Ann. Neur.* (2007); 62:468-74.
196. CL Ferreira, S Lapi, J Steele, DE Green, **TJ Ruth**, MJ Adam, C Orvig. Cobalt-55 Complexes with Pendant Carbohydrates as Potential PET Imaging Agents. *Appl. Radiat. Isot.* 65: 1303-1308 (2007).
197. V Sossi, JE Holden, G Topping, M-L Camborde, R Kornelsen, S McCormick, J Greene, A Studenov, **TJ Ruth**, DJ Doudet. In vivo measurement of density and affinity of the monoamine vesicular transporter in a unilateral 6-hydroxydopamine rat model of PD. *JCBF* 27:1407-15 (2007).
198. R Ting, J Lo, MJ Adam, **TJ Ruth**, DM Perrin. Synthesis, purification, and aqueous stability of a fluorescent [^{18}F]-labeled aryltrifluoroborate. *J Fluorine Chem*, 129, 349-358. (2008).

199. CW Harwig, R Ting, MJ Adam, **TJ Ruth**, DM Perrin. Synthesis and characterization of 2,6-difluoro-4-carboxyphenylboronic acid and a biotin derivative thereof as captors of anionic aqueous [^{18}F]-fluoride to prepare an [^{18}F]-labeled aryltrifluoroborates with high kinetic stability. *Tetrahedron Letters*, 49, 3152-3156 (2008).
200. R Ting, C Harwig, J Lo, Y Li, M Adam, **T Ruth**, D Perrin. Substituent Effects on Aryltrifluoroborate Solvolysis in Water: Implications for Suzuki-Miyaura Coupling and the Design of Stable ^{18}F -Labeled Aryltrifluoroborates for Use in PET Imaging. *J Organic Chem* 73:4662-70 2008.
201. WH Dragowska, P Kozlowski, A Yung, **TJ Ruth**, MJ Adam, V Sossi, D Green, J Sy, T Oliver, MB Bally, DTT Yapp. Overexpression Of Her-2 in Breast Cancer Tumors Results in Improved Tumor Tissue Perfusion, Lower Energy Stress and Higher Metabolic Activity. *Molecular Cancer Research*, in press June 2008.
202. Baker JH, Lam J, Kyle AH, Sy J, Oliver T, Co SJ, Dragowska WH, Ramsay E, Anantha M, **Ruth TJ**, Adam MJ, Yung A, Kozlowski P, Minchinton AI, Ng SS, Bally MB, Yapp DT. Irinophore C, a novel nanoformulation of irinotecan, alters tumor vascular function and enhances the distribution of 5-fluorouracil and doxorubicin. *Clin Cancer Res*. 2008;14:7260-71.
203. R Ting, C Harwig, U auf dem Keller, S McCormick, P Austin, CM Overall, MJ Adam, **TJ Ruth**, DM Perrin. Toward [^{18}F]-labeled aryltrifluoroborate radiotracers: in vivo positron emission tomography imaging of stable aryltrifluoroborate clearance in mice. *JACS*, 130:12045-55 (2008).
204. AL Annett, S Lapi, **TJ Ruth**, MT Maldonado. The effects of Cu and Fe availability on the growth and Cu:C ratios of marine Diatoms. *Limnology and Oceanography*, 53: 2451–2461 (2008).
205. JAH Inkster, B Guérin, **TJ Ruth**, MJ Adam. Radiosynthesis and bioconjugation of [^{18}F]FPy5yne, a prosthetic group for the ^{18}F labeling of bioactive peptides. *J Lab Comp. Radiopharm*. 51: 444-452 (2008).
206. R. Nandhagopal, E Mak, M Schulzer, J McKenzie, S McCormick, V Sossi, **TJ Ruth**, A Strongosky, MJ. Farrer, ZK Wszolek, AJ Stoessl. Progression of dopaminergic dysfunction in a LRRK2 kindred: a multitracer PET study. *Neurology*. 71:1790-5. (2008).
207. V. Sossi, K. Dinelle, R. de la Fuente-Fernandez, AJ Stoessl, G.J. Topping, J.E. Holden, M Schulzer, **TJ Ruth**, D Doudet. Dopamine transporter relation to levodopa-derived synaptic dopamine in a rat model of Parkinson's: an in-vivo imaging study. *J. Neurochemistry*. 109:85-92 (2009).
208. AR Troiano, R de la Fuente-Fernandez, V Sossi, M Schulzer, E Mak, **TJ Ruth**, AJ Stoessl. PET demonstrates reduced dopamine transporter expression in PD with dyskinesias. *Neurology*. 2009;72:1211-6
209. **TJ Ruth**. Accelerating production of medical isotopes. *Nature* 457:536-537 (*Invited Essay* - 29 January 2009).
210. DM Semeniuk, JT Cullen, K Johnson, K Gagnon, **TJ Ruth**, MT Maldonado. Plankton copper requirements and uptake in the sub-Arctic NE Pacific Ocean. *Deep Sea Research I*. 56: 1130-1142, 2009.

211. R de la Fuente-Fernández, V Sossi, S McCormick, M Schulzer, **TJ Ruth**, AJ Stoessl. Visualizing vesicular dopamine dynamics in Parkinson's disease. *Synapse* 63:713-716. (2009.)
212. V Sossi, R de la Fuente-Fernández, N Ramachandiran, M Schulzer, J McKenzie, **TJ Ruth**, JO. Aasly MJ. Farrer, , ZK Wszolek, AJ Stoessl. Dopamine turnover increases in asymptomatic LRRK2 mutation carriers. *Movement Disorders*. 25: 2717-2723 (2010).
213. R. Nandhagopal, L. Kuramoto, M. Schulzer, E. Mak, J. Cragg, J. McKenzie, S. McCormick, A. Samii, A. Kumar, A. Troiano, **T. J. Ruth**, V. Sossi, R. de la Fuente-Fernandez, A. J. Stoessl. Longitudinal Progression of Sporadic Parkinson's disease: a multitracer PET study. *Brain*, 132:2970-9, (2009).
214. L Yahtam, R Lam, J Erez, V Sossi, M Imperial, M Santana, **TJ Ruth**, P Liddle. Brain serotonin-2 receptors in acute mania. *Br J Psychiatry*. 2010;196:47-51.
215. JA H. Inkster, MJ Adam, T Storr, **TJ Ruth**. Labelling of an Antisense Oligonucleotide with [¹⁸F]FPy5yne. *Nucleosides, Nucleotides & Nucleic Acids*. ;28:1131-43(2009).
216. S. Lidstone, M Schulzer, E Mak, V Sossi, **TJ Ruth**, K Dinelle, R de la Fuente-Fernandez, AJ Stoessl. Effects of Expectation on Placebo-Induced Dopamine Release in Parkinson Disease *Arch. Gen. Psych*. 2010; 67:857-865.
217. LN. Yatham , PF Liddle, RW Lam, AP Zis, JA Stoessl, V Sossi, MJ Adam, **TJ Ruth**. Effect of electroconvulsive therapy on brain 5-HT2 receptors in major depression. *Brit. J. Psych*. 196: 474-479 (2010).
218. J Guo, AL Annett, RL Taylor, S Lapi, **TJ Ruth**, MT Maldonado. Copper-uptake kinetics of coastal and oceanic diatoms, *J. Phycol*. 46, 1218–1228 (2010).
219. AR Troiano, M Schulzer, R de la Fuente-Fernandez, E Mak, J McKenzie, V Sossi, S McCormick, **TJ Ruth**, AJ Stoessl. Dopamine transporter PET in normal aging: dopamine transporter decline and its possible role in preservation of motor function. *Synapse*. 2010; 64:146-51.
220. J Powe, D Worsley, **TJ Ruth**. Radioisotope Shortages in Nuclear Medicine: How we got there and developing solutions. *Can. Assoc. Radiologists Journal*. 61: 19-22 (2010).
221. U auf dem Keller, C Bellac, Y Li, Y Lou, P Lange, R Ting, C Harwig, R Kappelhoff, S Dedhar, M Adam, **T Ruth**, F Bernard, D Perrin, C Overall . Novel Matrix Metalloproteinase Inhibitor [F-18]Marimastat-Aryltrifluoroborate as a Probe for In vivo Positron Emission Tomography Imaging in Cancer. *J Cancer Res*. 69: 1096-1104 (2010).
222. K Gagnon, M Jensen, S McQuarrie, JG Publicover, SE Lapi, **TJ Ruth**. A new and simple calibration independent method for measuring the beam energy of a cyclotron. *Appl. Radiat. Isotopes*. 69 (2011) 247–253.
223. K Gagnon, F Bénard, M Kovacs, **TJ Ruth**, P Schaffer, JS Wilson, SA McQuarrie. Cyclotron production of ^{99m}Tc: Experimental measurement of the ¹⁰⁰Mo(p,x)⁹⁹Mo, ^{99m}Tc, and ^{99g}Tc excitation functions from 8 to 18 MeV. *Nuc Med Biol*. 38: 907-916 (2011).

224. R de la Fuente-Fernández, M Schulzer, L Kuramoto, J Cragg, R Nandhagopal, WL Au, E Mak, J McKenzie, S McCormick, V Sossi, **TJ Ruth**, C Lee, DB Calne, AJ Stoessl. Age-specific patterns of neurodegeneration in Parkinson's disease. *Annals Neurol.* 69: 803-810 (2011).
225. R Nandhagopal, L Kuramoto, M. Schulzer, E Mak, J Cragg, J McKenzie, S McCormick, **TJ Ruth**, V Sossi, R de la Fuente-Fernandez, AJ Stoessl. Longitudinal evolution of compensatory changes in striatal dopamine processing in Parkinson's disease. *Brain*, 134: 3290-3298 (2012).
226. A Celler, X Hou, F Bénard, **T Ruth**. Theoretical modelling of yields for proton induced reactions on natural and enriched molybdenum targets. *Phys. Med. Biol.* 56: 5469-5484, 2011.
227. Y Li, R Ting, CW Harwig, U auf dem Keller, CL Bellac, PF Lange, JAH Inkster, P Schaffer, MJ Adam, **TJ Ruth**, CM Overall, DM Perrin. Towards kit-like ^{18}F -labeling of marimastat, a noncovalent inhibitor drug for *in vivo* PET imaging cancer associated matrix metalloproteases. *Med. Chem. Commun.*, 2: 942-949 (2011).
228. A Miceli, P Amaudruz, F Benard, DA Bryman, L Kurchaninov, JP Martin, A Muennich, F Retiere, TJ Ruth, V Sossi, AJ Stoessl. Liquid Xenon Detectors for Positron Emission Tomography. *Journal of Physics: Conference Series* **312** (2011) 1-7.
229. TJ Morely, M Dodd, V Hanemaayer, W English, **TJ Ruth**, F Benard, P Schaffer. An automated module for the separation and purification of cyclotron-produced $^{99\text{m}}\text{TcO}_4^-$. *Nuc Med Biol.* 39 (2012): 551-9.
230. TJ Morley, L Penner, P Schaffer, **TJ Ruth**, F Bénard, E Asselin. The deposition of smooth metallic molybdenum from aqueous electrolytes containing molybdate ions. *Electrochem. Comm.* 15: (2012) 78–80.
231. X Hou, A Celler, J. Grimes, F Bénard, **T Ruth**. Theoretical dosimetry estimations for radioisotopes produced by proton induced reactions on natural and enriched molybdenum targets. *Phys. Med. Biol.* 57: (2012) 1499-1515.
232. JAH Inkster, K Liu, S Ait-Mohand, P Schaffer, B Guérin, **TJ Ruth**, T Storr. Sulfonyl fluoride-based prosthetic compounds as potential ^{18}F labelling agents. *Chemistry: A European Journal.* 18:11079-87 (2012).
233. S Haroun, Z Sanei, S Jivan, P Schaffer, **TJ Ruth**, PCH Li. Continuous-flow synthesis of [^{11}C]raclopride, a PET radiotracer, on a microfluidic chip. *Can J Chem.* 91: 326-332 2013.
234. C Hoehr, T Morley, K Buckley, M Trinczek, V Hanemaayer, P Schaffer, **T Ruth**, F Benard. Radiometals from liquid targets: $^{94\text{m}}\text{Tc}$ production using an adapted water target on a 13 MeV cyclotron. *Appl. Radiat. Isot.* 70:2308-12 (2013).
235. Z Liu, Y Li, J Lozada, P Schaffer, MJ Adam, **TJ Ruth**, DM Perrin. Stoichiometric Leverage: Rapid ^{18}F -Aryltrifluoroborate Radiosynthesis at High Specific Activity for Click Conjugation. *Angewandte Chemie.* 52:2303-7 (2013).
236. JM D'Auria, R Keller, K Ladouceur, SE Lapi, **TJ Ruth**, P Schmor. An alternate approach to the production of radioisotopes for nuclear medicine applications. *Rev. Sci. Instr.* 84:034705 (2013).

237. GJ Topping, P Schaffer, C Hoehr, **TJ Ruth**, V Sossi. Manganese-52 Positron Emission Tomography Tracer Characterization and Initial Results in Phantoms and In Vivo. *Medical Physics*. 40:042502(2013).
238. J Inkster, K-S Lin, S Ait-Mohand, S Gosslein, **TJ Ruth**, P Schaffer, B Guérin, T Storr. 2-Fluoropyridine prosthetics for the ^{18}F labeling of bombesin analogues. *Bioorganic & Medicinal Chem. Lett.* 23:3920-6 (2013).
239. V. Hanemaayer, F. Benard, K. R. Buckley, J. Klug, M. Kovacs, C. Leon, T. J. Ruth, P. Schaffer, S. K. Zeisler. Solid targets for $^{99\text{m}}\text{Tc}$ production on medical cyclotrons. *J. Radioanal. Nuc. Chem.*

Submitted papers:

Book Chapters, Monographs and Peer-reviewed Proceedings

1. JS Fowler, KI Karlstrom, C Koehler, RM Lambrecht, RR MacGregor, **TJ Ruth**, W Sceviour, AP Wolf. A Hot Cell for Synthesis of Labelled Organic Compounds, *Proceedings of the 17th Conference on Remote Systems Technology 1979*; **Amer. Nucl. Soc.**:310-313.
2. WRW Martin, AJ Stoessl, MJ Adam, JG Grierson, **TJ Ruth**, BD Pate, DB Calne, JW Langston. Imaging of Dopamine Systems in Human Subjects Exposed to MPTP. In: *MPTP - A Neurotoxin Producing a Parkinsonian Syndrome*. S Markey, N Castagnoli et al (eds). Academic Press 1986; 315-325.
3. WRW Martin, MJ Adam, M Bergstrom, **TJ Ruth** et al. The In Vivo Study of Dopa Metabolism in Parkinson's Disease. In: *Parkinson's Disease*, S. Fahn et al (eds) Raven Press. New York 1986; 97-102.
4. **TJ Ruth**, F Helus (eds). *Proceedings of the First Targetry Workshop*, Heidelberg, DKFZ publishers 1987. www.triumf.ca/wttc
5. Martin WRW, Stoessl AJ, Palmer M, Adam MJ, **Ruth TJ**, Grierson JR, Pate BD, Calne DB. PET scanning in dystonia. In: *Advances in Neurology*, vol 50, Dystonia 2, pp 223-228, Fahn S (ed), Raven Press, N.Y., 1988.
6. F Helus, S MacQuarrie, **TJ Ruth**, eds. *Proceedings of the Second Targetry Workshop in Heidelberg*, DKFZ publishers, Heidelberg, Germany; 1988. www.triumf.ca/wttc
7. **TJ Ruth**, J D'Auria, M Dombosky, TE Ward. The Chemistry of Astatine, *National Acad. Sciences Nuclear Science Monograph Series: Radiochemistry of the Elements*; 1988.
8. **TJ Ruth** (ed). *Proceedings of the Third Targetry Workshop*, Vancouver, TRIUMF publishers 1990. www.triumf.ca/wttc
9. **TJ Ruth**, MJ Adam, D Morris, S Jivan, S Tyldesley. The use of transducers for the automated radiopharmaceutical synthesis procedures. *New Trends in Radiopharmaceutical Synthesis, Quality*

- Assurance, and Regulatory Control*. Edited by AM Emran, Plenum Press, New York, pp 323-328 (1991).
10. **TJ Ruth** and RJ Nickles. Targetry and Production, *Proceedings of the 5th Workshop on Targetry and Target Chemistry*, BNL, NY, 1993. www.triumf.ca/wttc
 11. **Ruth, T. J.**; Zeisler, S. K.: Automated Radiochemistry through Transducers: Light from the Far Side. *Chemist view of Imaging*, AM Emran, ed. Plenum Press, New York; 1995, 461-469.
 12. **Ruth, T.J.**, Jivan, J. Adam. Quality control for ^{11}C and ^{18}F radiopharmaceuticals in the research environment. *Chemist view of Imaging*, AM Emran, ed. Plenum Press, New York; pp 169-174, 1995.
 13. **TJ Ruth**. Nuclear Medicine. *Encyclopedia of Applied Physics*, vol. **11**: 513-541 (1994). VCH Publishers, New York.
 14. **T.J. Ruth**, M.J. Adam. Synthesis of C-11 and F-18 labeled compounds for biomedical applications: current status and challenges for the future. *J. Radioanalytical and Nuclear Chemistry* **203**: 455-467(1995).
 15. **TJ Ruth**. Accelerator produced radionuclides and a National Biomedical Tracer Facility, in *Isotopes for Medicine*, S. James Adelstein and Frederick J. Manning, *Editors*; National Academy Press, Washington, D.C. 1995
 16. **Isotopes for Medicine and the Life Sciences**, SJ Adelstein and FJ Manning, *Editors*, Institute of Medicine, NAS Press (1995); TJ Ruth plus 10 others contributing.
 17. **TJ Ruth**, J.M. Link (eds). *Proceedings of the Sixth Targetry Workshop*, Vancouver, TRIUMF publishers 1996. www.triumf.ca/wttc
 18. J.E. Holden, F.J.G. Vingerhoets, B.J. Snow, G.L-Y. Chan, B. Legg, S. Morrison, M. Adam, S. Jivan, V. Sossi, K.R. Buckley, and **T.J. Ruth**. Links between 6-fluorodopa and 6-fluoro-3-O-methyldopa kinetics: Prospects for a refined graphical analysis. In: *Quantification of Brain Function using PET*. R. Myers, V.J. Cunningham, D.L. Bailey, and T. Jones, eds. San Diego: Academic Press (1996).
 19. V. Sossi, K.S. Morrison, T.R. Oakes, **T.J. Ruth**. Emission-transmission realignment using a simultaneous emission-transmission post injection scan. In: *Quantification of Brain Function using PET*. R. Carson, M. Daube-Witherspoon, P. Herscovitch, eds. San Diego: Academic Press (1998) 33-40.
 20. D.J. Doudet, O.T. DeJesus, G.L.Y. Chan, , S. Jivan, J. Holden, C. English, T.A. Aigner, **T.Ruth**. Imaging of the DA presynaptic system by PET: 6- ^{18}F Fluoro-L-dopa vs 6- ^{18}F Fluoro-L-m-tyrosine. In: *Quantification of Brain Function using PET*. R. Carson, M. Daube-Witherspoon, P. Herscovitch, eds. San Diego: Academic Press Chapter 58:(1998) 387-391.
 21. G.C. Ball, R. Baartman, J. Behr, P. Bricault, L. Buchmann, J.M. D'Auria, P. Delhei, M. Dombosky, G. Dutto, D. Hutcheon, K.P. Jackson, R. Kiefl, R. Laxdal, P. Levy, J-M. Poutissou, P. Schmor, G. Stanford, **T.J. Ruth**. The ISAC radioactive beam facility at TRIUMF: Present and

- future plans. In *The Nucleus: New Physics for the New Millennium*. New York: Kluwer Academic/Plenum Pub. 69-76 (2000).
22. V Sossi, JE Holden, G Chan, M Krzywinski, AJ Stoessl, **TJ Ruth**. Measuring the BP of four dopaminergic tracers utilizing a tissue input function. In: *Physiological Imaging of the Brain with PET*. (Gjedde A, Hansen S, Knudsen GM, Paulson OB, eds), New York: Academic Press: (2000).
 23. JE Holden, V. Sossi, G. Chan, DJ Doudet, AJ Stoessl, **TJ Ruth**. Effect of population k_2 values in graphical estimation of DV ratios of reversible ligands. In: *Physiological imaging of the brain with PET* (Gjedde A, Hansen S, Knudsen GM, Paulson OB, eds), New York: Academic Press, pp 127–129.
 24. Reba RC, Atcher RW, Bennett RG, Finn RD, Knight LC, Kramer HH, Mtingwa S, **Ruth TJ**, Sullivan DC, Woodard JB: Final Report, NERAC Subcommittee For Isotope Research & Production Planning. April 2000, pp 1-32. Published on line by the U.S. Dept. of Energy and may be viewed at URL <http://www.ne.doe.gov/neac/neacPDFs/finalisotopereport.pdf>
 25. **TJ Ruth**. Accelerators Available for Isotope Production (2000). In *Handbook of Radiopharmaceuticals: Radiochemistry and Applications*; MJ Welch, C Redvanly, eds. John Wiley & Sons, Ltd. West Sussex, UK (2001).
 26. DM Martinez, K Buckley, S Jivan, A Lindstrom, R Thiruvengadaswamy, JA Olson, **TJ Ruth**, RJ Kerekes. Characterizing the mobility of papermaking fibres during sedimentation. *12th Fundamental Research Symposium*, Oxford, 225-254(Sept. 2000).
 27. **TJ Ruth**, Production of radioisotopes for imaging and therapy at low energy. In *Proceedings of the 7th Int. Conf. Advanced Technology & Particle Physics*, World Scientific, London. M. Barone, et al. Editors; pp. 512-517 (2002).
 28. **TJ Ruth**, Criteria for the selection, production, and use of radionuclides for diagnosis and radiotherapy. In *Technetium, Rhenium and other Metals in Chemistry and Nuclear Medicine*, SGEditional, Padova. Editors: M. Nicolini, U Mazzi. pp. 297-303 (2003).
 29. V Sossi, **TJ Ruth**, Small animal PET imaging: in-vivo biochemistry. *J. Neural Transmission*. 112 : 319 - 330 (2005).
 30. V Sossi, M-L Camborde, S Blinder, A Rahmim, J-C Cheng, KR Buckley, DJ Doudet, **TJ Ruth**. Dynamic imaging on the high resolution research tomograph (HRRT): non-human primate studies. *IEEE NS*. Vol. 3, November 2005.
 31. V Sossi, S McCormick, EM Strome, R Kornelsen, **TJ Ruth**, DJ Doudet. MicroPET® R4 neuro-imaging in rats and post-mortem measures. *IEEE NS*. Vol. 3, November 2005.
 32. S Blinder, M-L Camborde, KR Buckley, A Rahmim, KJ-C. Cheng, **TJ Ruth**, V Sossi. Influence of Depth of Interaction on Spatial Resolution and Image Quality for the HRRT. *IEEE NS* Vol. 3, November (2005).
 33. AK Converse, OT Dejesus, LG Flores, JE Holden, AE Kelley, JM Moirano, RJ Nickles, TR Oakes, AD Roberts, **TJ Ruth**, NT Vandehey, RJ Davidson. Development of a dual tracer PET

- method for imaging dopaminergic neuromodulation. In *Proceedings of the 9th Int. Conf. Advanced Technology & Particle Physics*, World Scientific, London. M. Barone, et al. Editors; (2006).
34. **TJ Ruth**. Impact and Applications: Functional Imaging with PET. *Nuclear Physics News*. 16: 31-33 (2006).
 35. DJ Schlyer, **TJ Ruth**, P Van den Winkle, M Vora. Manual for Cyclotron Produced Radioisotopes. Vol. 1. A compendium of key Isotopes. IAEA Technical Document. In press 2007.
 36. DJ Schlyer, **TJ Ruth**, P Van den Winkle, M Vora. Manual for Cyclotron Produced Radioisotopes. Vol. 2. Theory and Practice. IAEA Technical Document. In press 2007.
 37. DJ Schlyer, **TJ Ruth**, P Van den Winkle, M Vora. A Manual for Radiopharmaceutical Production Facility Development. IAEA Technical Document. (2007).
 38. **TJ Ruth**. The uses of radiotracers in the life sciences. *Rep. Prog. Phys.* **72**:1-22 (2009).
 39. Advancing Nuclear Medicine through Innovation, Institute of Medicine, Nat. Academy Press (2007); **TJ Ruth** plus 13 others contributing.
 40. Whipple C, Larson SM, Atkins-Duffin C, Boardman A, Bostock DJ, Estes GB, Osborne-Lee IW, Peterson EJ, Reba RC, Ritchie IG, **Ruth TJ**, Vujic J, Wymer RG: The Production of Medical Isotopes Without HEU, National Academy Press, 2009.
 41. J Čomor, M Haij Saied, MRA Pillai, **TJ Ruth**, DJ Schlyer, MM Vora. Cyclotron Produced Radionuclides: Guidelines for Setting Up a Facility. IAEA Technical Document. In press 2009.
 42. **TJ Ruth**. The production of radionuclides for radiotracers in Nuclear Medicine. *Reviews of Accelerator Science and Technology*, published by World Scientific. 2: 17-33 (2009).
 43. C Allen, **TJ Ruth**. Non-HEU Production Technologies for Molybdenum-99 and Technetium-99m. IAEA Nuclear Energy Series, No. NF-T-5.4 (2013).

Abstracts (since 1993)

1. TJ Ruth, SK Zeisler, M. Rektor. A Low Cost Semiconductor Radiation Detector for PET Radiochemistry. American Chemical Society. April 1993.
2. V. Sossi, P. Kinahan, T.J. Ruth. Presented at the 1993 International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine, June 23-25, 1993, Snowbird, Utah, USA. Implementation of 3D Acquisition and 2D Reconstruction of the ECAT

953B.

3. B. Snow, K. Buckley, D. Bailey, M. Adam, D. Calne, S. Cooper, T. Dobko, S. Jivan, K. Morrison, T. Ruth, C. Schofield, V. Sossi, *Neurology*, 1993;43: A269. Dopamine-D2 Receptor Density is Inversely Correlated with Dopaminergic Innervation in Untreated Parkinson's Disease.
4. F. Vingerhoets, B.J. Snow, M. Schulzer, S. Morrison, V. Sossi, G. Chan, T. Ruth, J. Holden, S. Cooper, P. Schofield, D.B. Calne. Presented at the 6th International Symposium on Cerebral Blood Flow and Metabolism, Sendai, Japan, May 22-28, 1993, sponsored by The International Society of Cerebral Blood Flow and Metabolism. Reproducibility of ^{18}F -6-Fluorodopa Positron Emission Tomography in Normal Human Subjects.
5. B. Snow, K.R. Buckley, D. Bailey, M. Adam, D. Calne, S. Cooper, T. Dobko, S. Jivan, K.S. Morrison, T. Ruth, C. Schofield, V. Sossi, presented at the American Academy of Neurology, New York, April 1993, sponsored by the American Academy of Neurology. Dopamine D2 Receptor Density is Inversely Correlated with Dopaminergic Innervation in Untreated Parkinson's Disease.
6. TJ Ruth. Use of isotopes in the biosciences: a TRIUMF perspective. Symp. Isotope Production and Applications in Medicine, Science and the Environment: Int. Isotope Soc., Canadian Chapt. May 1993.
7. Ruth, TJ. Automation via black box systems. Invited talk in Laboratory automation for radiopharmaceutical synthesis, formulation and quality control. Soc. Nuc. Med. Toronto, June 1993.
8. TJ Ruth, M Dombisky and JM D'Auria, Exploration of the production of Rn-211 as a source of At-211 via the TISOL facility. American Chemical Society, 1993.
9. B. Kremer, B. Snow, C.M. Clark, W. Shtybel, T.J. Ruth, W.R.W. Martin and M.R. Hayden, The usefulness of fluorodeoxyglucose positron emission tomography in the diagnosis of Huntington disease. XVth World Congress of Neurology. Vancouver, 1993.
10. B. Kremer, B. Snow, C.M. Clark, W.R.W. Martin, T.J. Ruth and M.R. Hayden, Thalamic and cerebellar activation in Huntington disease: evidence from fluorodeoxyglucose positron emission tomography (FDG PET). *Mov. Disord.* (1993).
11. B. Kremer, B. Snow, C.M. Clark, W., T.J. Ruth, W.R.W. Martin and M.R. Hayden, Concordance between quantified neurological examination (QNE) and positron emission tomography in the earliest stages of Huntington's disease. 1993 AANS Meeting, NY.
12. MJ Adam, PA Culbert, T Hurtado, J Huser, GA Gschwandtner, S Jivan, D Morris and TJ Ruth, Automated synthesis of F-18 FDG using tetrabutylammonium bicarbonate. 10th Int. Symp. Radiopharmaceutical Chem. Kyoto, 1993.
13. M. Stazyk, V. Sossi, K.R. Buckley, T.J. Ruth, Normalization in 3D PET. The Society of Nuclear Medicine 41st Annual Meeting Orange County Convention Center, Orlando, Florida, June 1994.

14. B. Mukherjee and T.J. Ruth, Radiation shielding aspects of compact medical cyclotrons. 6th World Congress of the Federation of Nuclear Medicine and Biology, Sydney, Australia, October 23-28, 1994.
15. C. Moisan, J.G. Rogers, K.R. Buckley, T.J. Ruth, M. W. Stazyk, G. Tsang. Design of a depth encoding large aperture PET camera. IEEE, MIC, Norfolk, 1994.
16. V. Sossi, J.S. Barney, R. Harrison, T.J. Ruth. Effect of scatter from radioactivity outside of the field of view in 3D PET. IEEE MIC, Norfolk, 1994.
17. V. Sossi, J.S. Barney, T.J. Ruth. Noise reduction in the dual energy window scatter correction approach in 3D PET. IEEE Medical Imaging, Norfolk, 1994.
18. Ruth, T. J.; Zeisler, S. K.; Rektor, M. P.; Gschwandtner, G. A. Detectors and Transducers for Target Operation and Automated P.E.T. Chemistry. Proceedings of the Vth International Workshop on Targetry and Target Chemistry, Brookhaven National Laboratory, Upton, NY ~September 19-23, 1993.
19. Ruth, T. J.; Zeisler, S. K.: Automated Radiochemistry through Transducers: Light from the Far Side. Paper presented at Meeting of the American Chemical Society, 1993, Chicago.
20. Ruth, T.J., Jivan, S., Adam, M.J. Quality control for ^{11}C and ^{18}F radiopharmaceuticals in the research environment. Paper presented at Meeting of the American Chemical Society, 1993, Chicago.
21. Vingerhoets, FJG, Snow, BJ, Holden JE, Sossi V, Morrison, S, Ruth TJ. The fluorodopa loss rate constant in normal and Parkinson's disease. Neurology. 1994.
22. Sossi, V; Barney, J.S.; Ruth, T.J. Accuracy of the dual energy window scatter correction normalization in 3D PET. 3D meeting in France, July 1995.
23. Orvig, C., Lyster, D.M., McNeill, J.H., Ruth, T.J. Setyawati, I.A., Sun, Y., Vo, C., Yuen, V.G., Zeisler, Z.. ^{48}V Biodistribution Studies of Insulin Mimetic Vanadium Compounds. Symposium on Isotopes in drug discovery, nuclear medicine, nutrition, agriculture and production. Canadian Chapter of the Intern. Isotope Soc., Montreal, PQ, May 1995.
24. Orvig, C., Lyster, D.M., McNeill, J.H., Ruth, T.J. Setyawati, I.A., Sun, Y., Vo, C., Yuen, V.G., Zeisler, Z.. ^{48}V Biodistribution Studies of Insulin Mimetic Vanadium Compounds. 78th Canadian Soc. Chem. Conf. Exhib. June 1995.
25. Orvig, C., Lyster, D.M., McNeill, J.H., Ruth, T.J. Setyawati, I.A., Sun, Y., Vo, C., Yuen, V.G., Zeisler, Z.. ^{48}V Biodistribution Studies of Insulin Mimetic Vanadium Compounds. Vth COMTOX Symp. Toxicol. Clin. Chem. Vancouver July 1995, Annals Clin. Lab. Sci. 25: 427.
26. D. Doudet, G. Chan, T. Dobko, E. Strum, S. Jivan, D.B. Calne, T. Ruth. In vivo binding of the dopamine D1 receptor antagonist (C-11) Sch39166 in MPTP-treated rhesus monkeys by positron emission tomography (PET). Can. Cong. of Neurolo. Scien. Victoria, BC June 1995.

27. Doudet, G. Chan, T. Dobko, E. Strum, J. Huser, D.B. Calne, T. Ruth. In vivo binding of C-11) raclopride in asymptomatic and symptomatic MPTP-treated rhesus monkeys PET. Cand. Cong. of Neurolo. Scien. Victoria, BC June 1995.
28. J.E. Holden, F.J.G. Vingerhoets, B.J. Snow, G.L-Y. Chan, M. Adam, S. Jivan, T.J. Ruth. Graphical Analyses of 6-fluorodopa predicts 3-O-methyldopa distribution volume. Brain 95. June 1995.
29. D. Doudet, G. Chan, T. Dobko, E. Strum, J. Huser, D.B. Calne, T. Ruth. In vivo binding of (C-11) Sch23390, a dopamine D1 receptor antagonist in long term MPTP-treated rhesus monkeys by PET. JCBF 15: Suppl. 1 S758 (1995).
30. D. Doudet, G. Chan, T. Dobko, E. Strum, S. Jivan, D.B. Calne, T. Ruth. In vivo binding of (C-11) raclopride in asymptomatic and symptomatic long term MPTP-treated rhesus monkeys by PET. JCBF 15: Suppl. 1 S757 (1995).
31. V. Sossi, T.J. Ruth. 3D PET in Medical Imaging. Invited paper, 1995 CAP Congress, June '95, Quebec City.
32. D. Doudet, J.E. Holden, G. Chan, K.S. Morrison, T.J. Ruth. Increased dopamine turnover in the MPTP-induced model of Parkinsonism in primates measured by PET with fluorodopa (FD). Soc. Neurosci. San Diego, CA Nov. '95.
33. TJ Ruth. Does TRIUMF have a role to play in the U.S. National Biomedical Tracer Facility. Pacificchem '95, invited paper, joint meeting of pacific rim chemical societies, Dec. '95.
34. MJ Adam, K. Curry, T.J. Ruth, J. Gordon. Synthesis and preliminary in-vitro binding data for 7-fluorokynurenic acid: A potential glycine antagonist for the NMDA receptor complex. 11th Int. Symp. Radiopharm. Chem. Vancouver, BC. Aug.'95.
35. C. Orvig, D.M. Lyster, J.H.Mcneill, T.J. Ruth, I.A. Setyawati, Y. Sun, C. Vo, V.G. Yuen, S.K. Zeisler. ⁴⁸V biodistribution studies of insulin mimetic vanadium compounds. 11th Int. Symp. Radiopharm. Chem. Vancouver, BC. Aug.'95.
36. T.R.Oakes, V. Sossi, M. Cackette, T.J. Ruth. 3D PET normalization with a solid planar phantom. IEEE, MIC, Anaheim, CA. Nov 1996.
37. TJ Ruth. What is the U.S. National Biomedical Tracer Facility and does TRIUMF have a role to play? Int. Isotope Soc. 5th Ann. Canada Chapter, Toronto, May 1996.
38. TJ Ruth. What can be done at TRIUMF? Isotope Availability Seminar. Soc. Nuc. Med. Denver, CO. June 1996.
39. D.J. Doudet, J.E. Holden, G.Y.L. Chan, T.J. Ruth, R.J. Wyatt. Inhibition of catechol -O-methyltransferase (COMT) on the uptake rates of uptake Ki and reversibility (k_{loss}) in the MPTP-primate model of Parkinson's disease. Can. Congress Neurol. Sci. London, ON. June 1996.
40. G.L.-Y. Chan, D.J. Doudet, J.E. Holden, C.L. Jones, J.M. Huser, T.J. Ruth. Comparison of

binding of [^{11}C]SCH23390 and [^{11}C]SCH39186 to dopamine receptors using PET in non-human. Canadian Assoc. Nucl. Med. Quebec City, Nov. 1996.

41. V. Sossi, T.R.Oakes, T.J. Ruth. Evaluation of the ICS and DEW scatter correction methods for low statistical content scans in 3D PET. IEEE, MIC, Anaheim, CA. Nov 1996.
42. V. Sossi, K.S. Morrison, T.R.Oakes, T.J. Ruth. Emission-transmission realignment using a simultaneous emission-transmission post injection scan. Brain PET 97, June 1997.
43. T.R. Oakes, V.Sossi, T.J. Ruth. Normalization for 3D PET with a low-scatter source: Technique, implementation and validation. 3D Imaging in Nuclear Medicine (1997) Pittsburgh.
44. D.J. Doudet, G.L.Y. Chan, J-M. Lu, J. Huser, T.A. Aigner, T.Ruth. In vivo binding of (^{11}C)-d-threo-methylphenidate, a selective DA transporter antagonist in neurologically normal MPTP-treated monkeys by PET. JCBF 17: Suppl. 1 S689 (1997).
45. D.J. Doudet, G.L.Y. Chan, J. Holden, B.D. Pate, S. Jivan. D.B. Calne, T.Ruth. Effects of COMT and MAO inhibition on the reversibility of 6- ^{18}F -Fluoro-L-dopa trapping and dopamine turnover by PET in monkeys. Brain PET (1997).
46. D.J. Doudet, J. Holden, G.L.Y. Chan, , S. Jivan,. O. DeJesus, T.A. Aigner, T.Ruth.. Imaging of the DA presynaptic system by PET 6- ^{18}F -Fluoro-L-dopa vs 6- ^{18}F -Fluoro-L-*m*-tyrosine. Brain PET (1997).
47. G. Chan, C. English, T. Dobko, S. Morrison, M. Schulzer, J. Holden, J. Stoessl, T. Ruth, D. Calne. Striatal dopamine transporter studied with methylphenidate decline during normal aging. The American Neurological Assoc. (1997) Ann. Neurol. 42: 446..
48. V. Sossi, T.R.Oakes, G. Chan, T.J. Ruth. Quantitative comparison of 3D and 2D PET with human brain studies. Med. Imag. Conf. (1997).
49. T.R. Oakes, V.Sossi, T.J. Ruth. Normalization in 3D PET: Comparison of detector efficiencies obtained from uniform planar and cylindrical sources. Med. Imag. Conf.(1997).
50. R.E. Azuma, L. Buchmann, J.M. D'Auria, U. Giesen, D. Hunter, D.A. Hutcheon, J.D. King, J. Rogers, G. Roy, T. Ruth, J. Vincent. A gas target system for reaction studies in nuclear astrophysics at ISAC. CAP Congress, Calgary: June 1997.
51. D.J. Doudet, G.L.Y. Chan, J.-M. Lu, J. Huser, C. English, T.A. Aigner, T. Ruth. In vivo PET studies of the dopaminergic transporter in normal and MPTP-lesioned rhesus monkeys. Soc. Neurosci. (1997).
52. D. Phillips, E. Peterson, T. Ruth, L. Mausner. A U. S. Department of Energy Virtual Isotope Center Workshop on Targetry and Target Chemistry. Heidelberg, Germany. June, 1997
53. T.J. Ruth. The use of ISAC for the Production of High Specific Activity Radionuclides. Int. Isotope Soc. Philadelphia, Sept. 1997.
54. J. Stoessl, T. Dobko, C. S. Lee, A. Samii, J. E. Holden, V. Sossi, S. Jivan, J. Huser, T. J. Ruth &

- D. B. Calne Asymmetry in Parkinson's disease: a concurrent *in vivo* study of dopa decarboxylation, dopamine transporter and vesicular monoamine transporter binding; Nat. Park. Found. New Orleans, Nov. 1997.
55. D.J. Doudet, G.L.Y. Chan, T.J. Ruth, A.P. Zis. In vivo positron emission tomography studies of the effects of ECT on the dopamine receptors. Society of Biological Psychiatry (1998).
56. A.P. Zis, , G.L.Y. Chan, T.J. Ruth, D.J. Doudet. Effects of ECT on dopamine receptors: An in vivo PET study. 1998 ACT Scientific Program.
57. T.J. Ruth, D.J. Doudet, A.J. Stoessl, J.E. Holden. Monitoring the manipulation of the dopaminergic system through the measurement of the effective turnover with fluorodopa. Am. Chemical Soc. Dallas, TX, March 1998.
58. T.J. Ruth. Accelerator Production of High Specific Activity Therapeutic Radionuclides Amer. Chemical Soc. Dallas, TX, March 1998.
59. C.S. Lee, A. Sammi, M. Schulzer, V. Sossi, T.J. Dobko, G.L.Y. Chan, J. Huser, J-M. Lu, T.J. Ruth, D.B. Calne, A.J. Stoessl. Heterogeneous Severity of Lesions in the Striatum of Patients with Parkinson's Disease: In Vivo PET Studies Using Dihydropyridazine, Methylphenidate and F-DOPA. American Academy of Neurology, 1998.
60. Sossi, V, M Krzywinski, P Cohen, K Knitzek, K Hudkins, J DeRosario, KS Morrison, S Jivan, RR Johnson, TJ Ruth. Performance of the ADAC MCD dual head coincidence camera. Soc. Nucl. Med. Toronto, CA. J. Nucl. Med. 39:(1998).
61. Oakes, TR, T Hurtado, S Jivan, TJ Ruth. A positron plane source which approaches the limit of "low scatter". Soc. Nucl. Med. Toronto, CA. J. Nucl. Med. 39:(1998).
62. D.J. Doudet, J. Holden, J. Huser, S. Jivan, C. English, G. Chan, T. Ruth, Density and Affinity Of D₁ And D₂-Dopamine Receptors In Monkey: In Vivo Pet Studies With [¹¹C]Sch23390 And [¹¹C]Raclopride. Neuroreceptor Mapping 98, Ann Arbor, MI, June 1998.
63. D.J. Doudet, G.L.Y. Chan, T.Ruth, A. Zis. Studies of the effects of ECT on the dopamine receptors. 4th International Conference On Functional Mapping Of The Human Brain, Montreal, PQ, June 1998.
64. T.J. Ruth, Opening Remarks, Workshop on *Medical Imaging with Positron Emitting Isotopes*. Pacific Northwest Chapter, Soc. Nucl. Med. Vancouver, March 1998.
65. A.J. Stoessl, P. Pal, V. Sossi, J. Wudel, T. Dobko, C.S. Lee, S. Jivan, T.J. Ruth, D.B. Calne. Dopamine agonist therapy affects uptake of ¹⁸F-6-fluorodopa as measured by PET. Amer. Acad. Neurology. 1998.
66. V.Sossi, M. Krzywinski, P. Cohen, D.A. Mankoff, J. DeRosario, T.J. Ruth. Effect of count rate on contrast in the ADAC MCD camera. MIC IEEE, Nov. 1998.
67. Buckley KR, Ruth TJ. In-target chemistry: A review of the production of precursors for PET radiopharmaceuticals. Int. Isotope Soc. Ottawa, May 1998.

68. Buckley, KR, ET Hurtado and TJ Ruth, TR-13 Cyclotron / PET programme. Workshop on Accelerator Operations. Vancouver, BC, May 1998.
69. D. J. Doudet, G. Chan, J. Huser, S. Jivan, C. English, T. Ruth. In vivo PET studies of the density and affinity of dopamine D1 and D2 receptors in the striatum of normal and MPTP-treated monkeys. Int. Basal Ganglia Society. Brewster, MA, Oct. '98 .
70. Krzywinski M, Sossi V, Ruth TJ, Comparison of 3DFBP and FORE, 2DFBP, OSEM, and SAGE with phantom and dynamic human scans in PET, to be present at the 1998 MIC/IEEE, Toronto, Canada
71. Krzywinski, M.; Sossi, V.; Ruth, T.J. Comparison of FORE, OSEM and SAGE algorithms to 3DRP in 3D PET using phantom and human subject data. Nuclear Science Symposium, 1998. IEEE, 3 , Nov. 1998 : 1546 –1551.
72. Sossi, V.; Krzywinski, M.; Cohen, P.; Mankoff, D.A.; Hudkins, K.; DeRosario, J.; Ruth, T.J. Effect of count rate on contrast in a dual head coincidence camera. Nuclear Science Symposium, Conference Record. 1998 IEEE ,: 3 , 8-14 Nov. 1998 : 1907 -1911
73. Sossi V, Stoessl AJ, Samii A, Lee CS, Lu J-M, Ruth TJ, Comparison between the B_{\max}/K_d plasma-input and tissue-input derived estimates of in DTBZ studies of Parkinson's , Neuroimage 7, (1998) 18.
74. Ruth TJ. TRIPL: TRIUMF Radioisotope Production Laboratory. Fifteenth International Conference on the Application of Accelerators in Research and Industry. Denton, TX, Nov. 1998.
75. Yatham YN, Dennie J, Shian I-S, Lane C, Lam R, Ruth TJ, Liddle PF. A positron emission tomography study of the effects of desipramine on brain 5-HT₂ receptors. 48th Annual Meeting Canadian Psychiatric Assoc. September 1998, Halifax, NS.
76. Stoessl, AJ, Lee, CS, Sossi, V, Calne, DB. Imaging studies of the dopamine system in Parkinson's disease. iNABis'98. Dec. 1998.
77. Lee CS, Samii A, Sossi V, Ruth TJ, Schulzer M, Calne DB, Stoessl AJ. Effect of striatal dopaminergic denervation on [¹⁸F]FDOPA-, [¹¹C]DTBZ- and [¹¹C]MP-PET scans: a comparative study in patients with Parkinson's disease. Am. Acad. Neurol. (1999).
78. Ruth T.J. Establishing a PET environment. Canadian Nuclear Medicine in the 21st Century: from Functional Imaging to Prediction of Patient Outcome. Can. Soc. Nucl. Med. Banff, Alberta, March 1999.
79. Cohen PF, Sossi V, Johnson RR, Ruth TJ, Lyster D, Mankoff D, Hudkins K. Coincidence PET scanning with the first Canadian coincidence dual SPECT/PET system. Canadian Nuclear Medicine in the 21st Century: from Functional Imaging to Prediction of Patient Outcome. Can. Soc. Nucl. Med. Banff, AL, March 1999.
80. Sossi V, Krzywinski M, Ruth TJ. Evaluation of FORE + OSEM and FORE + 2DFBP as

alternatives to 3DFBP. ECAT Users meeting, Amsterdam, April 1999.

81. Yatham LN, Dennie J, Shian I-S, Lane C, Lam R, Ruth TJ, Liddle PF. Effects of desipramine treatment on brain 5-HT₂ receptors in depression.. 54th Annual Meeting Soc. Biological Psychiatry. May 1999, Washington, D.C., NS.
82. Yatham LN, Liddle PF, Shiah IS, Scaran G, Adam MJ, Lam RW, Zis AP, Ruth TJ. Age related decline in 5HT₂ receptors in depressed patients and healthy controls. 152nd Annual Meeting, American Psychiatric Assoc. May 1999.
83. Doudet DJ, Chan GLY, Jivan S, Huser J, English C, Ruth T, Holden JE. Dopamine D₂ receptors in long-term MPTP-treated monkeys: *In vivo* studies of the density B_{max} and affinity K_{dapp} with ¹¹C-raclopride. The VIII Symposium on the Medical Applications of Cyclotrons. Turku, Finland, May 1999.
84. Sossi V, Holden JE, Chan G, Krzywinski M, Stoessl AJ, Ruth TJ. Measuring the BP of four dopaminergic tracers utilizing a tissue input function. Brain PET 99; Copenhagen, June 1999.
85. Holden JE, Sossi V, Chan G, Doudet DJ, Stoessl AJ, Ruth TJ. Effect of average kinetic parameters in graphical estimation of distribution volume ratios of three reversible ligands. Brain PET 99; Copenhagen, June 1999.
86. Doudet DJ, Chan GLY, Jivan S, Huser J, English C, Ruth TJ. Density B_{max} and affinity K_{Dapp} of dopamine receptors in MPTP-treated monkeys: In-vivo scatchard PET studies with ¹¹C-raclopride. 11th International Symposium on Radiopharmacology, St. Louis, MO; June 1999.
87. Lee CS, Sossi V, Calne DB, Stoessl AJ, Ruth TJ, et al. Effects of varying severity of dopaminergic denervation on [¹⁸F]FD, [¹¹C]DTBZ and [¹¹C]MP-PET scans in Parkinson's disease. XIII International Congress on Parkinson's Disease, July 1999, Vancouver, Canada.
88. Ruth T.J. The Role of PET in Drug Development. World Congress of Pharmacy and Pharmaceutical Sciences. Barcelona, Spain, Sept. 1999.
89. Buckley KR, Huser JM, Lu J, Adam MJ, Ruth TJ. Optimisation of the single pas gas phase synthesis of ¹¹C-methyl bromide from ¹¹C-methane. Third International Isotope Conference. Vancouver, Sept. 1999.
90. Yatham L, Liddle P, Shiah IS, Adam M, Ruth T, Lam R. Brain 5-HT₂ receptors in major depression: A PET study. 49th Annual Meeting of the Canadian Psychiatric Assoc. Toronto, Sept. 1999.
91. PF Cohen, V Sossi, RR Johnson, TJ Ruth. PET in Canada: Historical perspectives, current status, challenges to future growth. Inst. Clinical PET. Vancouver, BC Oct. 1999.
92. Sossi, V, Pointon B, Cohen P, Johnson RR, Ruth TJ. Effect of shielding the radioactivity outside the field of view on image quality in a dual head coincidence camera. IEEE, Seattle, WA, Oct. (1999).
93. V Sossi, P Cohen, B Pointon, RR Johnson, TJ Ruth. Dual head coincidence cameras: challenges

- imposed by count rate limitations and open geometry. Canadian Soc. Nucl. Med., Mont Tremblant, Que. April 2000.
94. P Cohen, V Sossi, RR Johnson, T Ruth, D Lyster, D Mankoff. Coincidence PET scanning with the first Canadian coincidence dual SPECT/PET system. Canadian Soc. Nucl. Med., Mont Tremblant, Que. April 2000.
 95. CS. Lee, R.de la Fuente-Fernandez, V. Sossi, T. J. Ruth, M. Schulzer, J. E. Holden, D. B. Calne, and A J.Stoessl. In vivo PET studies in normal human subjects show that ratios of DAT to VMAT2 in the striatum decrease with a rostrocaudal gradient and also with aging: implications for the pathogenesis of Parkinson's disease. Amer. Academy Neurology 2000, San Diego, CA May 2000.
 96. E. Fosshag, M. Hecht, K. R. Buckley, D.W. Becker, K. Jayamanna, J. M. D'Auria, J. S. Vincent, T.J. Ruth. A Target System for the Production of ^{15}O Beams for ISAC. Int. Nuclear Target Development Soc., Belgium. (Oct. 2000).
 97. V Sossi, B Pointon, C. Boudoux, P Cohen, K. Hudkins, S Jivan, K Nitzek, J deRosario, C. Stevens, TJ Ruth. NEMA NU 2-2000 performance measurements on an ADAC MCD camera. IEEE, MI Conf. Lyon, France (Oct. 2000).
 98. T.J. Ruth. The production of ultra high quantities of ^{18}F -fluoride: A work in progress. CAARI, Denton TX, Nov. 2000.
 99. JS Vincent, A. Zyuzin, J. D' Auria, T. Ruth ,D. Ottewell , D. Harshman. Feasibility of ^{125}Xe Implantation for Brachytherapy. Pacificchem 2000, Honolulu, Dec. 2000.
 100. CS Lee, M Schulzer, V Sossi, TJ Ruth, J MacKenzie, C Boelman, R de la Fuente-Fernandez, JE Holden, DB Calne. Duration-dependent, striatal dopamine terminal loss in Parkinson disease levels off at different degrees of severity on the two sides: ^{11}C -DTBZ PET evidence for the 'Event' hypothesis. Amer. Acad. of Neurol. (2001).
 101. V Sossi, R de la Fuente-Fernandez, JE Holden, J McKenzie, DJ Doudet, TJ Ruth, AJ Stoessl. The dopamine effective distribution volume: a good discriminator of early Parkinson's disease. Soc. Nuc. Med. (Toronto, June 2001).
 102. D Becker, KR Buckley, KS Chun, ET Hurtado, S Jivan, SK Zeisler, TJ Ruth. Production of ultra high quantities of ^{18}F -fluoride via $^{18}\text{O}_2$ gas target: A progress report. ISRPC. (Interlaken, June 2001).
 103. R. de la Fuente-Fernandez, A.S. Lim, V. Sossi, J.E. Holden, J. McKenzie, T.J. Ruth, A.J. Stoessl. Apomorphine-Induced Pre-Synaptic Inhibition Of Dopamine Release In Parkinson's Disease: A Raclopride Pet Study. International Congress on Parkinson's Disease (Helsinki, July 2001).
 104. CS Lee, V Sossi, C Boelman, TJ Ruth, R Fuente-Fernandez, S Futardo, M Schulzer, JE Holden, DB Calne, AJ Stoessl. Evidence for regulatory changes in the dopamine transporter with aging: Positron emission tomographic observations in the normal striatum. Soc. Nuc. Med. (Toronto, June 2001).

105. Sossi V, de la Fuente-Fernandez R*, Holden JE, Doudet DJ, McKenzie J, Ruth TJ, Stoessl AJ. Changes in effective dopamine turnover due to pd are measurable earlier than changes in F-DOPA uptake rate using PET. International Congress on Parkinson's Disease (Helsinki, July 2001).
106. R. de la Fuente-Fernandez, V. Sossi, J.-Q. Lu, S. Jivan, M. Schulzer, J. E. Holden, C. S. Lee, T. J. Ruth, D. B. Calne, A. J. Stoessl. Fluctuations of synaptic dopamine levels in parkinson's disease are not related to duration or dose of levodopa treatment: a pet study. World Congress of Neurology, 2001.
107. Ruth TJ. Production of imaging and therapeutic radionuclides at low energy. 7th International Conference on Advanced Technology and Particle Physics Como, Italy, Oct. 2001.
108. Ruth TJ. Production considerations for the 30 MeV cyclotron for imaging and therapeutic radionuclides. International Symposium on Radiopharmaceuticals. KCCH, Seoul, Korea, Nov. 2001.
109. Lee CS, Jivan S, Adam MJ, Kurish A, Sossi V, Holden JE, Williams C, Mann S, Buck B, de Feijter A, Schulzer M, MacKenzie I, Stoessl AJ, Beattie BL, Ruth TJ. Extent and topography of cholinergic and dopaminergic denervation in dementia with Lewy bodies, Parkinson disease and Alzheimer disease: in vivo positron emission tomographic studies using ^{11}C -DTBZ and ^{11}C -PMP. 54th Annual Meeting Amer. Acad. Neurology. (2002)
110. K.R. Buckley, T.J. Ruth. Website for proceedings of the workshops on targetry and target chemistry. Workshops on Targetry and Taregt Chemistry, Turku, Finland, May 2002.
111. K.R. Buckley, J. Wilson, S. Jivan, M.J. Adam, P. Picconi, E.T Hurtado, T.J. Ruth. Operational Experience With a Niobium Target Body for the Irradiation of O-18-H₂O. Workshops on Targetry and Taregt Chemistry, Turku, Finland, May 2002.
112. T.E. Barnhart, K.R. Buckley, S. Jivan, A.D Roberts, T.J. Ruth. Performance of a Flow-Through Target for the Production of C-11-CH₄. Workshops on Targetry and Taregt Chemistry, Turku, Finland, May 2002.
113. D.W. Becker, K.R. Buckley, J. Lenz, B. Hagen, P. Piccioni, T.J. Ruth. Qualitative Evaluation of Helium-Cooling Windows. Workshops on Targetry and Taregt Chemistry, Turku, Finland, May 2002.
114. K.R. Buckley, D.W. Becker, R. Dahl, S. Jivan, T.J. Ruth. Further Progress on Targetry for the Production of Ultra-High Quantities of F-18-Fluoride. Workshops on Targetry and Taregt Chemistry, Turku, Finland, May 2002.
115. V Sossi, M Zamburlini, JE Holden, R de la Fuente-Fernandez, AJ Stoessl, TJ Ruth. The presence of 3-O-methyl-[^{18}F]fluoro-DOPA (3OMFD) influences the evaluation of the ^{18}F -fluorodopa tissue input uptake rate constant in a disease dependent way: a study in Parkinson's Disease. Neuroreceptor Mapping. Oxford, UK, July 2002.
116. Holden J.E., Jivan S., Ruth T.J., Doudet D.J. "PET receptor assay with multiple ligand

concentrations and true equilibrium: mathematical and neurochemical aspects” NeuroReceptor Mapping. Oxford, UK, July 2002.

117. Lee CS, Mann S, Zamburlini M, Lee S, Sossi V, Adam M, Stoessl AJ, Ruth TJ. PET studies on the extent of cholinergic and dopaminergic neuronal loss in Parkinson’s disease, Parkinson’s disease with dementia, and Dementia with Lewy bodies. Movement Disorders Society, 2002.
118. TJ Ruth. From Nuclear Spectroscopy to in vivo Biochemistry. Amer. Chem. Soc. Boston, MA, Aug. 2002.
119. TJ Ruth. Design consideration for high power gas targets. CAARI, Denton, TX Nov. 2002
120. TJ Ruth. Production of radioisotopes for medical applications at RIA. The 225th ACS National Meeting, New Orleans, LA, March 23-27, 2003.
121. TJ Ruth. Production of high LET radioisotopes at TRIUMF-ISAC. The 225th ACS National Meeting, New Orleans, LA, March 23-27, 2003.
122. CS Lee, BL Beattie, TJ Ruth, V Sossi, M Adam, AJ Stoessl, J Martzke, IR Mackenzie, D Foti, H Feldman, PET correlates of cognitive impairment and hallucinations in lewy body disorders: Comparison with Alzheimer disease. 6th International Conference AD/PD 2003.
123. Sossi V, de la Fuente-Fernandez R, Holden JE, M Schulzer, Ruth TJ, Stoessl AJ. Changes in Dopamine Turnover in the progression of Parkinson Disease as measured by PET. BrainPET 2003, Calgary, Alberta, July 2003.
124. Doudet D, Ruth TJ, Holden JE. Increased density and decreased affinity of the dopamine D1 receptors in MPTP-treated rhesus monkeys: In vivo multiple ligand concentration receptor assay (MLCRA) studies with [¹¹C]Sch23390. BrainPET 2003, Calgary, Alberta, July 2003.
125. S. Lu, M.J. Adam, J. Lu, and T.J. Ruth. Simplified synthesis of desmethyl-FLB 457 in two steps. ISRPC, Sydney, Aug. 2003.
126. A.R. Studenov, S. Jivan, M.J. Adam, T.J. Ruth, and K.R. Buckley. Studies of the mechanism of the in-loop synthesis of radiopharmaceuticals. ISRPC, Sydney, Aug. 2003.
127. S. Savedia-Cayabyab, A. Kumar, V. Sossi, T.J. Ruth, A.J. Stoessl, M. Schulzer, C.S. Lee. Upregulation of [¹⁸F]Dopa Ki in the putamen is associated with improvement of motor performance in Parkinson’s disease. Amer. Academy Neurology (2003).
128. H. van Netten, Z. Wozlek, C.S. Lee, E. Mak, M. Schulzer, V. Sossi, T.J. Ruth, A.J. Stoessl. Compensatory mechanisms in the dopamine system of patients with dominantly inherited parkinsonism. Amer. Neurology Assoc. 2003.
129. Buckley KR, Jivan S, Lapi S, Publicover J, Ruth TJ. Design considerations for high power gas targets: Part II. 226th ACS meeting, New York Sept. 2003.
130. V. Sossi, K. R. Buckley, P. Piccioni, A. Rahmim, M.-L. Camborde, T. J. Ruth. Printed Sources for Positron Emission Tomography (PET). IEEE Med. Imaging Conf. Oct 2003. Portland, OR.

131. A R Studenov, M J Adam, T J Ruth, J S Wilson. Exploring New Radiolabeling Chemistry: Synthesis of the Compounds with Phosphorus-Fluorine-18 Bond. Soc Nucl. Med. June 2004. Philadelphia, PA.
132. JR Adams, H van Netten, ZK Wszolek, CS Lee, E Mak, M Shulzer, J McKenzie, V Sossi, TJ Ruth, AJ Stoessl. Dopa decarboxylase upregulation and dopamine transporter downregulation compensate for striatal dopamine deficiency in pre-symptomatic familial Parkinson's disease. 56th Annual Meeting of the American Academy of Neurology; April 2004, San Francisco, CA.
133. A Troiano, J Adams, M Schulzer, V Sossi, TJ Ruth, DB Calne, AJ Stoessl, CS Lee. Comparison of age-related changes in the normal striatum between dopaminergic PET tracers: evidence for the downregulation of dopamine transporters with aging. 56th Annual Meeting of the American Academy of Neurology; April 2004, San Francisco, CA.
134. CS Lee, TJ Ruth, V Sossi, M Schluzer, DB Calne, AJ Stoessl. Uniform rates of progression in subregions of the putamen in Parkinson's disease: evidence for the dissociation between the etiology and pathogenesis. 56th Annual Meeting of the American Academy of Neurology; April 2004, San Francisco, CA.
135. CS Lee, A Troiano, J Adams, M Schulzer, V Sossi, TJ Ruth, AJ Stoessl. Correlation between the regulatory changes of presynaptic PET markers and the severity of dopamine terminal loss in the striatum of Parkinson's disease. 56th Annual Meeting of the American Academy of Neurology; April 2004, San Francisco, CA.
136. V Sossi, JE Holden, TJ Ruth, AJ Stoessl, D Doudet. Strategies to reduce scanning time in receptor imaging with Positron Emission Tomography. Neuro Receptor Mapping. July 2004, Vancouver, BC.
137. DT Yapp, TJ Ruth, MJ Adam, CJ Koch, ME Gleave, KA Skov. Non-invasive evaluation of tumour hypoxia with ^{18}F -EF5 and MicroPET in Androgen Dependent Murine model for prostate cancer. Amer. Assoc. Cancer Res. Orlando, FL, March 2004.
138. A Troiano, TJ Ruth, AJ Stoessl, CS Lee, et al. Comparison of Age-Related Changes in the Normal Striatum between Dopaminergic Pet Tracers: Evidence for the Downregulation of Dopamine Transporters with Aging. Amer. Academy Neurology. San Francisco, April 2004.
139. WL Au, M Schulzer, V Sossi, TJ Ruth, DB Calne, AJ Stoessl, CS Lee. Aging effect on the rate of progression in Parkinson's disease: A four year longitudinal PET study. Movement Disorder Soc. Rome, June 2004.
140. TJ Ruth. Production of Radioisotopes for Research in Bioscience and Physical Science. 2004 Canadian Assoc. Physicist Congress. June, 2004, Winnipeg, MN.
141. S Lu, MJ Adam, V Kennedy, J Lu, TJ Ruth. Preparation of Iodo-TZDM for PET/SPECT imaging. Soc. Nuc. Med. Philadelphia, June 2004.
142. S Lapi, TJ Ruth. Production of high specific activity ^{186}Re . American Chemical Soc. Philadelphia, August 2004.

143. J Publicover, TJ Ruth. Proton scattering in gas targets. American Chemical Soc. Philadelphia, August 2004.
144. V Sossi, M-L Camborde, D Newport, A Rahmim, G Tropini, D Doudet, TJ Ruth. The influence of measurement uncertainties on the evaluation of the distribution volume ratio in rat studies on a microPET[®] R4: a phantom study. IEEE Medical Imaging. Rome, Italy, Oct. 2004.
145. CS Lee, A Bell, C Boelman, IR Mackenzie, AJ Stoessl, V Sossi, TJ Ruth. Role of cholinergic and dopaminergic deficits in cognitive impairment of lewy body disorders: a double tracer PET study. Mental dysfunctions in PD, October 2004, Salzburg, Austria.
146. S Lapi, TJ Ruth. Production of radioisotopes for the physical and life sciences. WTTC 10, Madison, WI, August 2004.
147. J Publicover, TJ Ruth. Energy mapping of scattered protons within a gas target. WTTC 10, Madison, WI, August 2004.
148. AK Converse, TE Barnhart, CB Dallas, OJ DeJesus, JE Holden, S Jivan, RJ Nickles, TR Oakes, TJ Ruth, NT Vandehey, AD Roberts. Where angels fear to tread: applications of ¹¹C produced with 6.8 MeV protons. WTTC 10, Madison, WI, August 2004.
149. TJ Ruth. Production of Radiohalogens: Where's the beef? 5th International Symposium on Radiohalogens, Whistler, BC, Sept. 2004.
150. TJ Ruth. An examination of the routes to high specific activity radiotoxic nuclides. 18th International Conference on the Application of Accelerators. Ft. Worth, TX, Oct. 2004.
151. S. Lapi, T. J. Ruth. Production of ^{38,39}Cl for Botany Tracer Studies. 5th International Symposium on Radiohalogens, Whistler, BC, Sept. 2004.
152. AR Studenov, KR Buckley, MJ Adam, S Jivan, S Lapi, WA Sievers, TJ Ruth. Initial Assessment of Different Methods of [¹⁸F]F- Radiofluorination in a Small Volume: A Step Towards Miniaturization of Radiosynthesis. 5th International Symposium on Radiohalogens, Whistler, BC, Sept. 2004.
153. D Yapp, T Ruth, M Adam, C Koch, M Gleave, K Skov. Examining the Use of PET and ¹⁸F-EF5 to Evaluate Tumour Hypoxia. 5th International Symposium on Radiohalogens, Whistler, BC, Sept. 2004.
154. WH Dragowska, TJ Ruth, MJ Adam, P Kozlowski, K Skov, MB Bally, DTT Yapp. Studies of Tumour Microenvironment and Metabolic Activity in Breast Cancer Xenografts by Non-Invasive Small Animal PET and MRI. 5th International Symposium on Radiohalogens, Whistler, BC, Sept. 2004.
155. CS Lee, DJ Doudet, M Schulzer, IR Mackenzie, V Sossi, S Calne, TJ Ruth, AJ Stoessl. Parkinson's disease in the subclinical stage also shows a rostro-caudal gradient of dopamine terminal loss in the striatum: implications for the pathogenesis. 129th Annual Meeting, Am. Neurological Assoc. Toronto, Oct. 2004.

156. A Qasem, M Schulzer, V Sossi, TJ Ruth, DB Calne, AJ Stoessl, CS Lee. Effects of the capacity of dopamine sequestration on the rate of progression in Parkinson's disease. Amer. Acad. Neurol. 2005.
157. WL Au, M Schulzer, E Mak, V Sossi, TJ Ruth, DB Calne, AJ Stoessl, CS Lee. Comparison of 3 presynaptic PET tracers in estimating the rate of progression in Parkinson's disease: a longitudinal study. 16th International Congress on Parkinson's Disease and Related Disorders, Berlin 5-9 June 2005
158. V Sossi, JE Holden, M Schulzer, TJ Ruth, AJ Stoessl. Age dependence of ¹⁸F-fluorodopa uptake rate and dopamine turnover PET markers and implications for Parkinson's disease progression. Brain PET 05, Copenhagen, 7-11 June 2005.
159. AK Converse, TE Barnhart, CB Dallas, S Jivan, JA Larson, TR Oaks, AD Roberts, TJ Ruth, NT Vandehey, ML Schneider. [¹¹C]Raclopride imaging of dopamine release in rhesus monkeys. Brain PET 05, Copenhagen, 7-11 June 2005.
160. W. L. Au, M. Schulzer, E. Mak, V. Sossi, T. J. Ruth, D. B. Calne, A. J. Stoessl, and C. S. Lee. Comparison of 3 presynaptic PET tracers in estimating the rate of progression in Parkinson's disease: a longitudinal study. 16th International Congress on Parkinson's Disease and Related Disorders, Berlin 5-9 June 2005.
161. AR Troiano, A Kumar, V Sossi, TJ Ruth, AJ Stoessl, M Schulzer, CS Lee. Positron emission tomography correlates of the short duration response to levodopa in Parkinson's disease - a dual tracer study. 16th International Congress on Parkinson's Disease and Related Disorders, Berlin 5-9 June 2005.
162. A Kumar, J Adams, V Sossi, Z Huang, TJ Ruth, R de la Fuente-Fernandez, AJ Stoessl. Dopamine turnover in Parkinson's disease patients with motor fluctuations: A PET study using a novel technique to estimate dopamine turnover. 16th International Congress on Parkinson's Disease and Related Disorders, Berlin 5-9 June 2005.
163. S Lapi, JM D'Auria, JJ Ressler, TJ Ruth. Measurement of Cross sections for ^{nat}W(p,xn)¹⁸¹⁻¹⁸⁶Re reactions up to 19 MeV. 16th Intern. Symp. Radiopharm. Chem. June 2005.
164. S.Lu, M.J.Adam, J.Lu, and T.J.Ruth Preparation of radioiodo-compounds for SPECT/PET/RIA imaging and therapeutic uses. 16th Intern. Symp. Radiopharm. Chem. June 2005.
165. DT Yapp, K Skov, W Dragowska, J Sy, D Green, C Koch, T Ruth, M Adam, V Sossi, P Kozlowski, M Gleave. Non-invasive evaluation of tumour microenvironment during progression in the Shionogi model for prostate cancer with MicroPET and MRI. 96th AACR meeting in April 2005 - Anaheim, CA.
166. S Heath, M Martinez, J Olson, S Jivan, TJ Ruth, K Buckley. PET imaging of a flowing fiber suspension. PACWEST Conference, Harrison Hot Springs, Canada, May 2005.
167. AK Converse, TE Barnhart, CB Dallas, S Jivan, JA Larson, TR Oakes, AD Roberts, TJ Ruth,

- NT Vandehey, ML Schneide. [^{11}C]raclopride imaging of dopamine release in rhesus monkeys. Brain PET 2005, Amsterdam, June 2005.
168. AK Converse, OT DeJesus, LG Flores, JE Holden, AE Kelley, RJ Nickles, TR Oakes, AD Roberts, TJ Ruth, NT Vandehey, RJ Davidson. Development of a dual tracer PET method for imaging dopaminergic neuromodulation. 9th International Conference on Advanced Technology and Particle Physics, Como Italy, 17-21 October 2005.
169. TJ Ruth. Can accelerators meet the Nuclear Medicine Community's needs for radiotoxic isotopes? 9th International Conference on Advanced Technology and Particle Physics, Como Italy, 17-21 October 2005.
170. S Blinder, M-L Camborde, KR Buckley, A Rahmim, J-C Cheng, TJ Ruth, V Sossi. Influence of depth of interaction on spatial resolution and image quality for the HRRT. IEEE Med. Imag. Conference, Puerto Rico, October 2005.
171. M-L Camborde, S Blinder, KR Buckley, A Rahmim, J-C Cheng, TJ Ruth, V Sossi, DJ Doudet. Dynamic imaging on the high resolution research tomograph (HRRT): non-human primate studies. IEEE Med. Imag. Conference, Puerto Rico, October 2005. *Designated a **Premium Poster** by organizers.*
172. S Lapi, JM D'Auria, J Ressler, TJ Ruth. Measurement of cross-sections for $^{\text{nat}}\text{W}(p,xn)^{181-186}\text{Re}$ reactions up to 19 MeV. Pacificchem 2005, Honolulu, Dec. 2005.
173. TJ Ruth. Accelerator production of radiohalogens for therapy. Pacificchem 2005, Honolulu, Dec. 2005.
174. D Yapp, W Dragowska, T Ruth, M Adam, P Kozlowski, M Bally. Overexpression of HER-2/*neu* in breast cancer xenografts is associated with increased levels of hypoxia, perfusion and metabolism: An assessment of tumour microenvironment with positron emission tomography and magnetic resonance imaging. The 9th Tumor Microenvironment Workshop - August 20-23rd (2005) Oxford, UK.
175. S Heath, K Buckley, DM Martinez, S Lapi, JA Olson, TJ Ruth. Visualization of the Flow of a Papermaking Suspension in an Axisymmetric Sudden Expansion Using Positron Emission Tomography. Nordic Rheology Society 2006; Stockholm, June 2006.
176. Converse AK, Moirano JM, Vandehey NT, Murali D, Flores LG, Oakes TR, Holden JE, Roberts AD, Ruth TJ, Dejesus OT, Nickles RJ, Davidson RJ (2006) Simultaneous dual tracer PET imaging of alterations in dopamine D2 receptor occupancy and blood flow in rat brain [abstract submitted]. *Neuroreceptor Mapping Conference* 6th, 6-8 July, Copenhagen.
177. K. Dinelle, S. Blinder, J. C. Cheng, S. Lidstone, K. Buckley, T. Ruth, V. Sossi. Investigation of subject motion encountered during a typical Positron Emission Tomography scan. IEEE Med. Imag. 2006.
178. V Sossi, S Lidstone, S McCormick, A Rahim, S Blinder, K Dinelle, J-C K Cheng, DJ Doudet, TJ Ruth. Comparison between the ROI based and pixel based analysis for neuroreceptor studies performed on the high resolution research tomograph (HRRT). IEEE Med. Imag. 2006.

179. V Sossi, R de la Fuente-Fernandez, M Schulzer, A Troiano, T Ruth, J Stoessl. Role of the dopamine transporter in synaptic dopamine oscillations in Parkinson's disease: a PET study. International Congress of Parkinson's Disease and Movement Disorders, Kyoto, Oct. 2006.
180. V Sossi, J Holden, ML Camborde, R Kornelson, S McCormick, J Green, A Studenov, T Ruth, D Doudet. In-vivo occupancy studies with rat DTBZ⁺ data using a microPET® Focus 120. NeuroReceptor Mapping 2006, Copenhagen.
181. TJ Ruth. Advances in targetry for the production of radioisotopes for Clinical and Research PET. 9th Scient. Advis. Comm. Seminar New Trends on Positron Emission Tomography St. Petersburg, Russia. 18–19 September 2006.
182. A Troiano, R de la Fuente-Fernandez, V Sossi, M Schulzer, CS Lee, TJ Ruth, AJ Stoessl. Positron emission tomography demonstrates reduced dopamine transporter expression in PD patients with dyskinesia. Movement Disorders Society, Oct. 2006, Kyoto.
183. TJ Ruth. Role of exotic nuclei in Medical Physics. AAAS, San Francisco, Feb 2007.
184. N Ramachandiran, E Mak, M Schulzer, J McKenzie, S McCormick, TJ Ruth, A Strongosky, ZK Wszolek, AJ Stoessl. Multitracer Positron Emission Tomographic analysis of progression of presynaptic dopaminergic dysfunction in a *LRRK2* kindred. Am. Acad. Neurol. Boston, April 2007.
186. JAH Inkster, MJ Adam, TJ Ruth. Click-based radiotracers for the synthesis of ¹⁸F-labelled oligonucleotides. 17th ISRC, Aachen, Germany April 2007.
187. SE Lapi, KG Gagnon, ME Cox, JJ Ressler, TJ Ruth. Labeling of the 1h7 antibody with Re-186 and Re-188 for IGF receptor targeting. 17th ISRC, Aachen, Germany April 2007.
188. SE Lapi, P Machule, K Jayamanna, T. J. Ruth. A proof of principle ion source for increasing the specific activity of reactor produced Re-186. 17th ISRC, Aachen, Germany April 2007.
189. S Jivan, TJ Ruth, JC Matteo JP O'Neil. Synthesis of [¹⁸F]setoperone using the nanotek minuteman® Microfluidic system. 17th ISRC, Aachen, Germany April 2007.
190. R Ting, DM Perrin, MJ Adam, TJ Ruth. Use of boronic acid bioconjugates as precursors for rapid aqueous radiofluorination of biomolecules. 17th ISRC, Aachen, Germany April 2007
191. K Gagnon, S Lapi, TJ Ruth. An Inexpensive Ionization Chamber Determination of Proton Energy in a Medical Cyclotron. Canadian, American and Mexican Physical Societies, Montreal, Quebec (2007).
192. E Bogusz, SC Lidstone, K Dinelle, S Blinder, TJ Ruth, LN Yatham, V Sossi, AJ Stoessl. Amphetamine-induced dopamine release in Parkinson's disease depression measured using high-resolution positron emission tomography with [¹¹C] raclopride. Soc. Neuroscience Nov 2007.
193. N Ramachandiran, MSchulzer, L Kuramoto, J Cragg, E Mak, CS Lee, S McCormick, J McKenzie, TJ Ruth, AJ Stoessl. Multitracer PET study of longitudinal progression of

Parkinson's disease: implication for pathogenesis. WFN-World congress of PD and related disorders. Amsterdam, December 2007.

194. TJ Ruth. After thirty years of target and radiochemistry developments, where are we? Where are we headed? 11th Turku PET Symposium, Turku, Finland, May 2008.
195. S. Haroun, T. J. Ruth, PCH Li. Raclopride synthesis conducted on a microfluidic chip. 12th Workshop on Targetry and Target Chemistry, Seattle, WA July 2008.
196. JAH Inkster, B Guérin, TJ Ruth, MJ Adam. Radiosynthesis and bioconjugation of [¹⁸F]FPy5yne, a prosthetic group for the labeling of bioactive peptides. 6th Radiohalogen Symposium, Whistler, BC September 2008.
197. RD Moorlag, TJ Ruth, MJ Adam, JAH Inkster, DM Perrin. New [18F]Fluorobenzoylation Reagents *via* Isotope Exchange of Trifluoroarylborates. 6th Radiohalogen Symposium, Whistler, BC September 2008.
198. S Haroun, S Jivan, TJ Ruth, P Li. Analysis of [¹¹C]raclopride synthesis on two microfluidic devices. Canadian Society for Chemistry. Hamilton, Ontario, June 2009.
199. J Inkster, MJ Adam, B Gruein, F Benard, TJ Ruth. Labelling of an antisense oligonucleotide with [F-18]FPy5yne. 18th ISRC, Edmonton, Canada, July 2009.
200. S Haroun, S Jivan, P Li, TJ Ruth. Optimization of [¹¹C]raclopride production on a microfluidic chip. 18th ISRC, Edmonton, Canada, July 2009.