TOMMASO VOLPI, Ph.D.

Curriculum Vitae

Researcher unique identifier(s): **ORCID:** 0000-0002-5451-6710

Date of birth: June 11th, 1992
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CURRENT POSITION

2022 – present **Postdoctoral Associate**

Yale PET Center, Department of Radiology and Biomedical Imaging, Yale University School of Medicine, New Haven, CT, USA

Main supervisor: Prof. Richard E. Carson

Other supervisors: Prof. Ansel T. Hillmer, Dr. Jean-Dominique Gallezot, Dr. Sophie Holmes, Prof. David Matuskey

Research areas: PET kinetic modeling, parametric imaging, synaptic density, receptor occupancy, pharmacokinetic/pharmacodynamic modeling, resting-state fMRI, multimodal integration, epilepsy, Parkinson's disease, menopause, non-human primates, bolus/infusion [^{18}F]FDG PET for task studies.

Grant involment:

- 5U01EB029811-05: NeuroExplorer: Ultra-high Performance Human Brain PET Imager for Highly-resolved In Vivo Imaging of Neurochemistry (PI: Richard E. Carson)
- 1R01NS125482-01A1: Identifying and targeting the neural basis of depression in Parkinson's disease (PI: Sophie Holmes)
- 5R21EB026759-03: Non-invasive Estimation of the Arterial Input Function in PET Studies using Whole-Body Physiological Models (PI: Jean-Dominique Gallezot)

PREVIOUS POSITIONS

2019 – 2022 **PhD Student in Neuroscience**,

Padova Neuroscience Center, University of Padova, IT

Supervisors: Prof. Alessandra Bertoldo, Prof. Maurizio Corbetta

Thesis title: "Investigating the brain's "dark energy" through the complex coupling of [^{18}F]FDG PET and resting-state functional MRI".

Thesis defense: January 2023

Research areas: PET kinetic modeling, parametric mapping of microparameters (Variational Bayesian approach), image-derived input function, venous plasma samples modeling, nonlinear mixed-effects modeling, resting-state fMRI, multimodal integration, PET connectivity modeling.

2018 Dec-2019 July **Research fellow**,

Department of Neurosciences, University of Padova, Italy

2019 Jan-Jun **Visiting Scholar**,

Department of Neurology, Washington University in Saint Louis, Missouri, USA

Research areas: cluster analysis on structural MRI, functional MRI and behavioral data from stroke patients.

EDUCATION

2018 Mar **Medical License**,
Order of Physicians and Surgeons, Padova, Italy

2017 Sep **Doctor of Medicine (M.D.) degree**,
University of Padova, Italy
Final grade: 110/110 cum laude
Thesis: "Patterns of brain atrophy and hypometabolism associated with C9ORF72 mutation in the FTD/ALS spectrum"
Supervisor: Prof. Annachiara Cagnin

PERSONAL SKILLS

Mother Language Italian

Other Languages English (Proficient), French (Basic)

RESEARCH AND PROFESSIONAL SKILLS

Computer skills

Linux/Windows/MacOS user
Matlab (Proficient)
R (Intermediate)
Python (Basic)
Bash (Intermediate)
LaTeX (Intermediate)
IDL (Basic)
Microsoft Office – Word, Excel, Power Point (Proficient)
Graphic and video editing (Intermediate)

PET Image Analysis

Extensive experience in **PET kinetic modeling at region and voxel level**

Tracers: [^{18}F]FDG, [^{15}O]H_2O, [^{15}O]O_2, [^{11}C]UCB-J, [^{18}F]SynVesT-1, [^{11}C]EMO etc.

Modeling: compartment modeling, reference tissue modeling, spectral analysis, graphical methods (Patlak, Logan), semiquantitative approaches (SUVR)

Noninvasive input function extraction and modeling: image-derived input functions, modeling of venous plasma samples, kinetic approach to recover C_P

Single-subject *PET connectivity* estimation: Euclidean similarity analysis between PET time-activity curves.

MR Image Analysis

Experience in **Structural MRI preprocessing**

Tasks: Bias field correction, brain extraction, tissue segmentation, image registration, normalization, surface mapping (*ANTs, FSL, Freesurfer, Bioimage Suite*)

Experience in **Resting-state Functional MRI preprocessing**

Tasks: Slice time correction, motion correction, nuisance regression, filtering, normalization, surface mapping (*ANTs, FSL, Freesurfer, Workbench*)

Experience in **Resting-state Functional MRI analysis**

Tasks: Extraction of signal-based features, regional homogeneity, static functional connectivity, sliding-windows-based time-varying functional connectivity.

Statistical skills

Experience in

Descriptive statistics

Statistical testing (parametric and nonparametric)

Linear least squares modeling

Regularization for multilinear models (ridge, LASSO, elastic net)

Feature selection approaches for multiple regression

Nonlinear least squares modeling

Population modeling (linear and nonlinear mixed-effects modeling)

Principal component analysis

Independent component analysis

Cluster analysis

Sparse inverse covariance estimation

Similarity analysis via angle-based and distance-based approaches.

Data Acquisition

Acquisition of data for the "**BrainMap Project**"

PIs: Professors Alessandra Bertoldo, Maurizio Corbetta and Diego Cecchin, University of Padova, Italy

Aim: simultaneously collecting high-quality PET, MRI and EEG data on a Siemens Biograph mMR scanner to explore multimodal relationships

Protocol: dynamic [^{18}F]FDG PET (55 min list-mode acquisition), T1w structural MRI (MPRAGE, 1x1x1 mm^3), diffusion MRI (3 shells, b-values = 300, 1000, 2000 s/m^2), resting-state fMRI (TR = 1700 ms, 3x3x3 mm^3, 15 min), high-density EEG (256 channels, 15 min).

Duties related to data acquisition: helping with the EEG setup and with supervision of the MRI sequences.

FELLOWSHIPS AND AWARDS

2024 June **Physics, Instrumentation and Data Sciences Council (PIDSC) Young Investigator Award 2023 Finalist (Honorable Mention)**
SNMMI 2024, Toronto, ON, CA

2023 Sep **NIH Travel Award 2023 Awardee**
WMIC 2023, Prague, CZ

2023 June **Brain Imaging Council Travel Award 2023 Awardee**
SNMMI 2023, Chicago, IL, USA

2023 June **Early Career Investigator Travel Bursary Awardee**
Brain & Brain PET 2023, Brisbane, Australia

2023 June **"Niels Lassen" Award Finalist**
Brain & Brain PET 2023, Brisbane, Australia
Abstract: "Modeling the relationship between PET measures of synaptic density from [^{11}C]UCB-J and [^{18}F]SynVesT-1 tracers"

2022 July **EMBC 2022 Student Paper Competition Finalist**
EMBC 2022, Glasgow, Scotland, UK
Paper: "Modeling venous plasma samples in [18F]FDG PET studies: a nonlinear mixed-effects approach"

2022 June **"Niels Lassen" Award Finalist**
Brain & Brain PET 2022, Glasgow, Scotland, UK
Abstract: "The spatial organization of [^{18}F]FDG inflow and phosphorylation and their association with resting-state fMRI measures"

2022 June **Early Career Investigator Travel Bursary Awardee**
Brain & Brain PET 2022, Glasgow, Scotland, UK

2020 October **Gamma Prize – PET contest 2020 for Best Oral Proffered Talk**
PET is Wonderful 2020 Conference (virtual)
Abstract: "The negative relationship between brain metabolism and its network dynamics: stability requires more energy"

2019 Jan-June **Visiting Scholar**
Department of Neurology, Washington University in Saint Louis, Missouri
Supervisor: Prof. Gordon L. Shulman

INVITATIONS FOR CONFERENCES AND LECTURES

2025 Jun **Invited speaker, Symposium "Current Advances in Molecular Connectivity"**
Talk title: Tracer Kinetics and Single-Subject PET Connectivity: Methods and Applications

2024 Jun **Invited speaker, Molecular Connectivity Working Group Online Series**
Talk title: Molecular connectivity & dynamic PET: comparing time series and subject series approaches.

2024 May **Invited speaker, PET PK Course 2024**
Talk title: Exploring Kinetics with the NeuroEXPLORER.

2023 Jul **Invited speaker, Brain and Brain PET 2023**
Talk title: Investigating the complex relationship between glucose metabolism and the structural and functional properties of the human brain.

2022 Sep **Invited speaker ("Gamma Prize" Winner)**
PET is Wonderful 2022 Conference, University of Edinburgh, Scotland
Talk title: Quantitative [^{18}F]FDG brain studies with image-derived input functions: impact of different extraction sites.

2022 July **Chair of session "Data Driven Systems and Knowledge Modeling"**
IEEE EMBC 2022, Glasgow, Scotland

2022 May **Chair of session "Aging and Dementia"**
Brain & Brain PET 2022, Glasgow, Scotland

2022 Feb **Invited speaker for 1-hr Lecture on PET quantification**
GIGA, University of Liège, Belgium
Talk title: From compartmental modeling to SUV: a (personal) journey into PET quantification.

2021 Oct **Invited speaker at [^{18}F]FDG PET Workshop**
"Assessing Brain Glucose Metabolism in Patients with Disorders of Consciousness: from Acquisition to Interpretation"
GIGA Consciousness group, University of Liège, Belgium
Talk title: Principles of [^{18}F]FDG Tracer Kinetics.

2021 June **Invited speaker at Symposium "PET imaging of brain connectivity: hype or future?"**
OHBM 2021 (virtual meeting)
Organizers: Dr. Arianna Sala, Dr. Igor Yakushev

SUPERVISION OF STUDENTS

2025 **Co-Supervisor of 1 Bachelor's Degree Student**
Department of Computer Science and Mathematics, Yale University
Supervisor: Prof. Richard E. Carson

2024 **Co-Supervisor of 1 Bachelor's Degree Student**
Department of Biomedical Engineering, Yale University
Supervisor: Prof. Richard E. Carson

2023-2024 **Co-Supervisor of 1 M.D./Ph.D. Student**
Department of Radiology, Biomedical Engineering, Yale University
Supervisor: Prof. Richard E. Carson

2021 – 2022 **Co-Supervisor of 2 M.S. theses in Bioengineering**,
Department of Information Engineering, University of Padova, Italy
Supervisor: Prof. Alessandra Bertoldo
Theses titles:

1. "Quantification of [^{18}F]FDG PET kinetic parameters using an image-derived input function and multimodal integration with resting-state fMRI metrics" (graduated in April 2022)
2. "Methods for estimating metabolic brain connectivity at the region and voxel level using dynamic [^{18}F]FDG Positron Emission Tomography" (graduated in July 2022)

2018 – 2019 **Private Tutor** in Biochemistry, Physiology and Physiopathology

TEACHING ACTIVITIES

2024 **Lecture, "Opportunities for kinetic modeling with ultra-high performance PET scanners**
Course: "Pharmacokinetics and Pharmacodynamics in Neuropharmacology"
Department of Radiology and Biomedical Imaging, Yale University, US
Coordinator: Dr. Jason Cai

2021-2022 **Tutoring activity**
Course: "Biomarkers, Precision Medicine and Drug Development"
Master's degree in Bioengineering
Department of Information Engineering, University of Padova, Italy
Coordinator: Prof. Mattia Veronese

2020 – 2022 **Tutoring activity**
Course: "Imaging for neuroscience"
Master's degree in Bioengineering
Department of Information Engineering, University of Padova, Italy
Coordinator: Prof. Alessandra Bertoldo

INSTITUTIONAL RESPONSIBILITIES

2024 **Member of the Yale Postdoctoral Association (YPA)**
Symposium Committee, Community and Networking Committee

2019 – 2021 **Organizer of the local European Researchers' Night** ("VenetoNight")
Padova Neuroscience Center, University of Padova, Italy

REVIEWING ACTIVITIES

Reviewer for **Network Neuroscience, Imaging Neuroscience, Cerebral Cortex, Journal of Healthcare Informatics Research**, **Human Brain Mapping**, **EJNMMI Physics**, **Frontiers in Neuroscience, Frontiers in Human Neuroscience, Frontiers in Nuclear Medicine**, **eLife**, **Neuroimage.**

Reviewer for **NeuroReceptor Mapping (NRM) 2021**.

MEMBERSHIPS IN SCIENTIFIC SOCIETIES

2024-present Molecular Connectivity Working Group (**MCWG**)

2023 World Molecular Imaging Society (**WMIS**)

2023-present Society of Nuclear Medicine and Molecular Imaging (**SNMMI**)

2022-present International Society for Cerebral Blood Flow and Metabolism (**ISCBFM**)

2021–present Institute of Electrical and Electronics Engineers (**IEEE**), Engineering in Medicine and Biology Society (**EMBS**), Nuclear and Plasma Sciences Society (**NPSS**)

2020 International Society for Magnetic Resonance in Medicine (**ISMRM**)

ATTENDED INTERNATIONAL CONFERENCES

2025 **SNMMI Annual Meeting** (to be attended)
New Orleans, US

2025 **Brain & Brain PET 2025** (to be attended)
Seoul, South Korea

2024 **IEEE NSS/MIC/RTSD**
Tampa, Florida
1 Poster Presentation

2024 **SNMMI Annual Meeting**
Toronto, Canada
2 **Oral** Presentation and 1 Poster Presentation

2024 **NRM 2024**
Montreal, Canada
1 **Oral** Presentation and 3 Poster Presentations

2023 **World Molecular Imaging Conference 2023**
Prague, Czech Republic
1 **Oral** Presentation

2023 **SNMMI Annual Meeting 2023**
Chicago, IL, USA
1 **Oral** Presentation and 1 Poster Presentation

2023 **Brain & Brain PET 2023**
Brisbane, Australia
2 **Oral** Presentations

2022 **PET is Wonderful 2022**
Edinburgh, Scotland, UK
"*Gamma Prize*" Talk

2022 **Engineering in Medicine and Biology (EMBC) 2022**
Glasgow, Scotland, UK
2 Conference Papers accepted for **Oral** Presentations, Chair of one session

2022 **Brain & Brain PET 2022**
Glasgow, Scotland, UK
3 **Oral** Presentations, 2 Poster Presentations, Chair of one session

2021 **NRM 2021**
Virtual meeting

3 Poster Presentations

2021 **EMBC 2021**
Virtual meeting
1 Conference Paper accepted for Oral Presentation

2021 **OHBM 2021**
Virtual meeting
Speaker at symposium “PET imaging of brain connectivity: hype or future?”

2020 **PET is Wonderful 2020**
Virtual meeting
1 **Oral** Presentation, winner of *Gamma Prize*

2020 **ISMRM 2020**
Virtual meeting

2020 **OHBM 2020**
Virtual meeting

ATTENDED COURSES, SEMINARS AND SYMPOSIA

2024 **Dosimetry in radiopharmaceutical therapy, from basics to advanced**
IEEE NSS/MIC/RTSD, Tampa, Florida

2024 **Medical Image Processing with AI including Foundation Models**
IEEE NSS/MIC/RTSD, Tampa, Florida

2024 **PET Pharmacokinetics Course**
Montreal, Canada

2022 **Satellite meeting “PET for brain connectivity: back to the future?”**
Brain & Brain PET 2022, Glasgow, Scotland, UK

2022 **PET Pharmacokinetics Course**
Edinburgh, Scotland, UK

2022 **Imaging Transcriptomics: current advances and future directions**
King’s College London (virtual meeting)

2021 **Noise as Signal: Finding Hemo**
Virtual meeting

2020 **Dynamic Modeling of Brain Functional Data**
King’s College London (virtual)

2020 **Analysis of PET data, ISTAART Alzheimer's association**
Virtual meeting

2019 **Summer School in Computational and Theoretical Models in Neuroscience**
Venice, Italy

EXTERNAL COLLABORATIONS

2023 – present **Dr. Janice Hwang**
Division of Endocrinology and Metabolism, University of North Carolina School of Medicine, USA
Research areas: Menopause, Obesity, Diabetes, Synaptic Density, Glucose Metabolism, PET kinetic modeling ([^{18}F]FDG)

2021 – present **Dr. Andrei G. Vlassenko, Dr. Manu S. Goyal, Dr. John J. Lee**
Department of Radiology, Washington University in Saint Louis, Missouri, USA
Research areas: PET kinetic modeling ([^{18}F]FDG, [^{15}O]H_2O, [^{15}O]O_2), Image-derived input function, aerobic glycolysis, PET-fMRI integration, PET connectivity

2021 – present **Dr. Arianna Sala**
GIGA Consciousness group, University of Liège, Belgium
Research areas: PET connectivity, [^{18}F]FDG PET kinetic modeling, Image-derived input function

PUBLICATIONS

Journal Articles

De Francisci, M., Silvestri, E., Bettinelli, A., Volpi, T., Goyal, M.S., Vlassenko, A.G., Cecchin, D., Bertoldo, A. EMATA: a toolbox for the automatic extraction and modeling of arterial inputs for tracer kinetic analysis in [18F]FDG brain studies. EJNMMI Phys 2024, 11: 105. DOI: 10.1186/s40658-024-00707-2.

Omidvari, N., Shanina, H, Leung, E.K., Sun, X., Li, Y., Mulnix, T., Gravel, P., Henry, S., Matuskey, D., Volpi, T., Jones, T., Badawi, R.D., Li, H., Carson, R.E., Qi, J., Cherry, S.R., Quantitative Accuracy Assessment of the NeuroEXPLORER for Diverse Imaging Applications: Moving Beyond Standard Evaluations. J Nucl Med 2025. DOI: 10.2967/jnumed.124.268309

Vallini, G., Volpi, T.*, Silvestri, E.*, Lee, J.J., Vlassenko, A.G., Goyal, M.S., Cecchin, D., Corbetta, M., Bertoldo, A. Individual-level metabolic connectivity from dynamic [18F]FDG PET reveals glioma-induced impairments in brain architecture and offers novel insights beyond the SUVR clinical standard. Eur J Nucl Med Mol Imaging 2024 DOI: 10.1007/s00259-024-06956-8. *shared second authorship.

Li, H., Badawi, R.D., Cherry, S.R., Fontaine, K., He, L., Henry, S., Hillmer, A.T., Hu, L., Khattar, N., Leung, E.K., Li, T., Li, Y., Liu, C., Liu, P., Lu, Z., Majewski, S., Matuskey, D., Morris, E.D., Mulnix, T., Omidvari, N., Samanta, S., Selfridge, A., Sun, X., Toyonaga, T., Volpi, T., Zeng, T., Jones, T., Qi, J., Carson, R.E. Performance Characteristics of the NeuroEXPLORER, a Next-Generation Human Brain PET/CT Imager. J Nucl Med 2024. DOI:10.2967/jnumed.124.267767.

Volpi, T.*, Silvestri, E., Lee, J.J., Vlassenko, A.G., Goyal, M.S., Corbetta, M., Bertoldo, A*. The brain's "dark energy" puzzle: how strongly is glucose metabolism linked to resting-state brain activity? J Cereb Blood Flow Metab 2024. DOI:10.1177/0271678x241237974. *corresponding author.

Volpi, T.*, Maccioni, L., Colpo, M., Debiasi, G., Capotosti, A., Ciceri, T., Carson, R.E., DeLorenzo, C., Hahn, A., Knudsen, G., Lammertsma, A.A., Price, J.C., Sossi, V., Wang, G,, Zanotti-Fregonara, P., Bertoldo, A., Veronese, M., An update on the use of image-derived input functions for human PET studies: new hopes or old illusions? EJNMMI Res 2023 Nov 10;13(1):97. DOI:10.1186/s13550-023-01050-w. *corresponding author.

Volpi, T., Vallini, G., Silvestri, E., De Francisci, M., Durbin, T., Corbetta, M., Lee, J.J., Vlassenko, A.G., Goyal, M.S., Bertoldo, A. A new framework for metabolic connectivity mapping using bolus [18F]FDG PET and kinetic modeling. J Cereb Blood Flow Metab 2023 Nov;43(11):1905-1918. DOI:10.1177/0271678X231184365.

Volpi, T.*, Fang, X.T.*, Holmes, S.E., Esterlis, I., Carson, R.E., Worhunsky P.D. Linking resting-state network fluctuations with systems of coherent synaptic density: a multimodal fMRI and 11C-UCB-J PET study. Front Human Neurosci 2023. DOI:10.3389/fnhum.2023.1124254. *shared first authorship.

Palombit, A., Silvestri, E., Volpi, T., Aiello, M., Cecchin, D., Bertoldo A., Corbetta, M. Variability of regional glucose metabolism and the topology of functional networks in the human brain. Neuroimage 2022 May 4;257:119280. DOI:10.1016/j.neuroimage.2022.119280.

Preprints

Severino, M., Peretti, D. E., Bardiau, M., Cavaliere, C., Doyen, M., Gonzalez-Escamilla, G., Horowitz, T., Nørgaard, M., Mejia Perez, J. A., Perovnik, M., Rullmann, M., Steenken, D., Talmasov, D., Tang, C., Volpi, T., Xu, Z., Bertoldo, A., Calhoun, V. D., Caminiti, S. P., Di, X., Habeck, C., Jamadar, S., Perani, D., Sala, A., Sossi, V., Yakushev, I., Pereira, J. B., Veronese, M. Molecular connectivity studies in neurotransmission: a scoping review (preprint). DOI: 10.21203/rs.3.rs-5498198/v1.

Vallini, G., Baron, G., Silvestri, E., Volpi, T., Vlassenko, A., Goyal, M., Chiuso, A., Cecchin, D., Corbetta, M., Bertoldo, A. Brain metabolic-functional (de) coupling: from health to glioma dysfunction (preprint). DOI: 10.21203/rs.3.rs-5291237/v1.

Reed, M. B., Cocchi, L., Knudsen, G. M., Sander, C., Gryglewski, G., Chen, J., Volpi, T., Fisher, P., Khattar, N., Silberbauer, L. R., Murgas, M., Godbersen, G. M., Nics, L., Walter, M., Hacker, M., Hammers, A., Ogden, T. R., Mann, J. J., Biswal, B., Rosen, B., Carson, R., Price, J., Lanzenberger, R., Hahn, A. Connecting the Dots: Approaching a Standardized Nomenclature for Molecular Connectivity Combining Data and Literature (preprint). DOI: 10.1101/2024.05.10.593490.

Cayir, S., Volpi, T., Toyonaga, T., Gallezot, J.D., Yanghong, Y., Sadabad, F.E., Mulnix, T., Mecca, A.P., Fesharaki-Zadeh, A, Matuskey, D. Relationship between Neuroimaging and Cognition in Frontotemporal Dementia: A [18F]FDG PET and Structural MRI Study (preprint). DOI:10.21203/rs.3.rs-3846125/v1.

De Francisci, M., Silvestri, E., Bettinelli, A., Volpi, T., Goyal, M.S., Vlassenko, A.G., Cecchin, D., Bertoldo A., EMATA: an automatic toolbox for the Extraction and Modeling of Arterial inputs for Tracer kinetic Analysis (preprint). DOI:10.36227/techrxiv.23592996.v1.

Volpi, T., Vallini, G., Silvestri, E., De Francisci, M., Durbin, T., Corbetta, M., Lee, J.J., Vlassenko, A.G., Goyal, M.S., Bertoldo, A. A new framework for metabolic connectivity mapping using bolus [18F]FDG PET and kinetic modeling (preprint). DOI:10.1101/2022.12.27.522050.

Volpi, T., Silvestri, E., Aiello, M., Corbetta, M., Bertoldo, A. The complexity of the relationship between spontaneous brain activity and glucose metabolism (preprint). DOI: 10.21203/rs.3.rs-728300/v1.

Conference Proceedings – Short Papers

Volpi, T., Zeng, T., Khattar, N., Toyonaga, T., Martins, S., Mulnix, T., Fontaine, K., Gallezot, J.D., Carson, R.E. Image-derived input functions on an ultra-high performance brain PET scanner: Minimizing the carotid partial volume effect. 2024 IEEE Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC) and Room Temperature Semiconductor Detector Conference (RTSD). DOI: 10.1109/NSS/MIC/RTSD57108.2024.10658264.

Zhang, J., Sun, C., Volpi, T., Zeng, T., Fontaine, K., Du, Y., Toyonaga, T., Onofrey, J. A., Lu, Y., Carson, R. E. Data-driven non-rigid motion detection and correction for NeuroEXPLORER. 2024 IEEE Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC) and Room Temperature Semiconductor Detector Conference (RTSD). DOI: 10.1109/NSS/MIC/RTSD57108.2024.10658289.

Zeng, T., Zhang, J., Volpi, T., Gallezot, J.-D., Fontaine, K., Khattar, N., Jiang, W., Yang, Z., Wan, Q., Wang, S., Li, T., Zhang, X., Hu, L., Carson, R. E. Motion correction quality control of markerless head motion tracking for ultra-high performance brain PET. 2024 IEEE Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC) and Room Temperature Semiconductor Detector Conference (RTSD). DOI: 10.1109/NSS/MIC/RTSD57108.2024.10658040.

Zeng, T., Wang, S., Fontaine, K., Jiang, W., Zhang, J., Mulnix, T., Gravel, P., Volpi, T., Gallezot, J. D., Yang, Z., Zhang, X., Sun, X., Hu, L., Li, H., Carson, R. E. Validation and application of markerless head motion tracking for a next-generation brain PET scanner. 2023 IEEE Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC) and Room Temperature Semiconductor Detector Conference (RTSD). DOI:10.1109/NSSMICRTSD49126.2023.10338275

T. Zeng, S. Wang, K. Fontaine, W. Jiang, J. Zhang, T. Mulnix, P. Gravel, T. Volpi, J. D. Gallezot, Z. Yang, X. Zhang, X. Sun, L. Hu, H. Li, R. E. Carson. 2023 IEEE Nuclear Science Symposium (NSS), Medical Imaging Conference (MIC) and Room Temperature Semiconductor Detector Conference (RTSD).

Volpi, T., Lee, J.J., Silvestri, E., Durbin, T., Corbetta, M., Goyal, M.S., Vlassenko, A.G., Bertoldo, A. Modeling venous plasma samples in [18F]FDG PET studies: a nonlinear mixed-effects approach. Annu Int Conf IEEE Eng Med Biol Soc. 2022 Jul; 2022:4704-4707. DOI:10.1109/EMBC48229.2022.9871429.

Volpi, T.*, Silvestri, E.*, Bettinelli, A., De Francisci, M., Jones, J., Corbetta, M., Cecchin, D., Bertoldo, A. Image-derived Input Function in brain [18F]FDG PET studies: which alternatives to the carotid syphons? Annu Int Conf IEEE Eng Med Biol Soc. 2022 Jul; 2022:243-246. DOI:10.1109/EMBC48229.2022.9871200. *shared first authorship.

Volpi, T., Silvestri, E., Corbetta, M., Bertoldo, A. Assessing different approaches to estimate single-subject metabolic connectivity from dynamic [^{18}F]FDG Positron Emission Tomography data. Annu Int Conf IEEE Eng Med Biol Soc. 2021 Nov; 2021:3259-3262. DOI: 10.1109/EMBC46164.2021.9630441.

Conference Proceedings – Abstracts

Volpi, T., Khattar, N., Toyonaga, T., Mulnix, T., Fontaine, K., Gallezot, J.D., Carson, R.E. Image-Derived Input Functions and Ultra-High Performance Brain PET Scanners: have we finally made it? Abstract. Accepted for Oral Presentation at SNMMI Annual Meeting 2024. PIDSC Young Investigator Award Finalist.

Volpi, T., Khattar, N., Toyonaga, T., Mulnix, T., Fontaine, K., Gallezot, J.D., Carson, R.E. Fick's Principle is back: can we get a Whole-Brain Blood Flow estimate from (almost) any PET tracer? Abstract. Accepted for Oral Presentation at SNMMI Annual Meeting 2024.

Volpi, T., Khattar, N., Toyonaga, T., Mulnix, T., Fontaine, K., Gallezot, J.D., Carson, R.E. PET Kinetic Modeling on Ultra-High Performance Scanners: can we finally trust the Microparameters? Abstract. Accepted for Poster Presentation at SNMMI Annual Meeting 2024.

Zhang, J., Sun, S., Li, Y., Volpi, T., Fontaine, K., Zeng, T., Gallezot, J.D., Onofrey, J., Lu., Y., Carson, R.E. Evaluation of motion correction quality in brain, face and neck for the NeuroEXPLORER. Accepted for Poster Presentation at SNMMI Annual Meeting 2024.

Khattar, N., Volpi, T., Toyonaga, T., Gallezot, J.D., Dias, M., Zeng, T., Fontaine, K., Mulnix, T., Henry, S., Smart, K., Martins, S., Hidalgo, E., Carson, R.E. Assessing visual activation in the human brain with ultra-high performance FDG functional PET using the NeuroEXPLORER, a next-generation brain PET imaging system. Abstract. Accepted for Oral Presentation at SNMMI Annual Meeting 2024.

Volpi, T., Khattar, N., Toyonaga, T., Mulnix, T., Fontaine, K., Gallezot, J.D., Carson, R.E. Image-Derived Input Functions from Ultra-High Performance Brain PET: Are We There Yet? Abstract. Accepted for Oral Presentation at NRM 2024.

Volpi, T., Khattar, N., Toyonaga, T., Mulnix, T., Fontaine, K., Gallezot, J.D., Carson, R.E. Revisiting Fick's Principle: A Whole-Brain Blood Flow Estimate from (Almost) Any PET Tracer? Abstract. Accepted for Poster Presentation at NRM 2024.

Volpi, T., Khattar, N., Toyonaga, T., Mulnix, T., Fontaine, K., Gallezot, J.D., Carson, R.E. Kinetic Modeling and Ultra-High Performance PET Scanners: Can We Finally Trust the Microparameters? Abstract. Accepted for Poster Presentation at NRM 2024.

Volpi, T., Holden, D., Gallezot J.D., Nabulsi, N., Keliher, E., Fonseca, K.R., Trapa, P., Huang, Y., Maresca, K.P., Carson, R.E. A novel approach to modeling enzyme turnover rates after irreversible inhibition: a proof-of-concept brain PET study in non-human primates. Abstract. Accepted for Poster Presentation at NRM 2024.

Carson, R.E., Toyonaga, T., Volpi, T., Khattar, N., Naganawa, M., Honhar, P., Zeng, T., Fontaine, K., Mulnix, T., Henry, S., Matuskey, D., Radhakrishnan, R., Nabulsi, N., Huang, Y., Gallezot, J.D. First Human Brain PET Images on the NeuroEXPLORER with Targeted Radiopharmaceuticals. Abstract. Accepted for Oral Presentation at NRM 2024.

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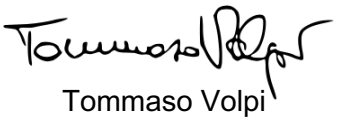

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