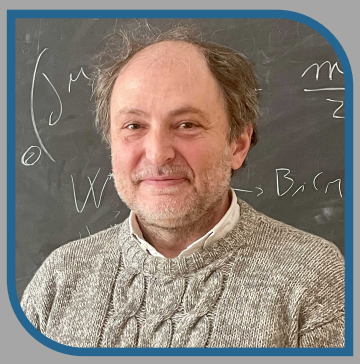

Federico Giove

MRI Scientist

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Profiles

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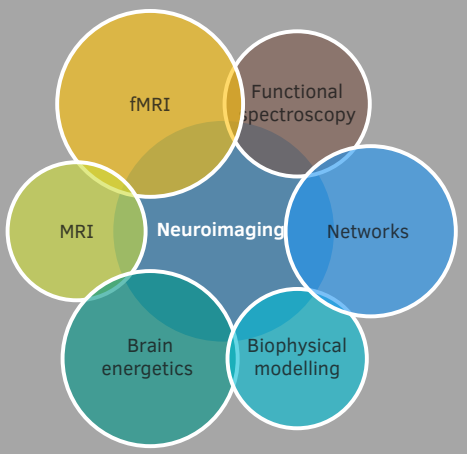
Research



Positions

From 2022	**Director of Research**	Centro Ricerche Enrico Fermi
From 2023	**Director of Neuroimaging Laboratory**	Fondazione Santa Lucia
2019–2021	**Senior researcher, tenured**	Centro Ricerche Enrico Fermi
2015–2018	**Senior researcher, tenure track**	Centro Ricerche Enrico Fermi
2011–2015	**Senior postdoc fellow**	Centro Ricerche Enrico Fermi
2010	**Postdoc fellow**	Sapienza University of Rome
2004–2009	**Postdoc fellow**	Centro Ricerche Enrico Fermi

Research

Interests

- Dynamics of brain metabolism physiology and alterations (neurotransmitters cycling, energy–related compounds).
- Biophysical modeling and computational approaches to the study of brain function and metabolism.
- Quantitative MR approaches to brain structure and function.
- Human brain function at rest and under sustained stimulation (resting state and steady state networks).
- Optimization of MR scanners technology for neuroscience.

Production

- Coauthor of about 100 full papers and 20 conference papers on indexed journal, and 80+ other items (editorials, conference proceedings, papers on national journals).
- Some tenths of invited conference talks and chairmanships.
- h-index: 31, 2781 citations (source: Scopus).

Academic and organizational experience

From 2025	**Member** of the Steering Committee of the Ebrains Italian Community.
From 2025	**Member** of the Internal Advisory Committee of of Centro Ricerche Enrico Fermi.
From 2024	**Member** of the Scientific Council of Centro Ricerche Enrico Fermi.
2019	**Member** of the group “Health” of the Ministry of Research Commission for the 2021-2027 National Research Plan (PNR).
From 2017	**Qualified as full professor** in Applied Physics.
From 2013	**Qualified as associate professor** in several disciplines, including Experimental Condensed Matter, Physiology, Biochemistry.
From 2018	**Grant reviewer** for The Netherlands Organisation for Scientific Research (NL), the Alzheimer’s Society Foundation (UK), the University of Modena and Reggio Emilia (I).
2017–2021	**Member** of the Board (Collegio dei Docenti) of the PhD School in Morphogenesis and Tissue Engineering, from XXXIII to XXXVII cycle, Sapienza University of Rome
2020	**Member** of the Scientific Committee of the Virtual online GIDRM Workshop on Artificial Intelligence in NMR, MRI and Neuroscience.
2009-2021	**Condirector** of the International School on Magnetic Resonance and Brain Function, Erice, Italy.
2008	**President** of the Local Organizing Committee of International Society for Magnetic Resonance in Medicine Workshop on Advances in High Field MR, Rome, 15–18 October.

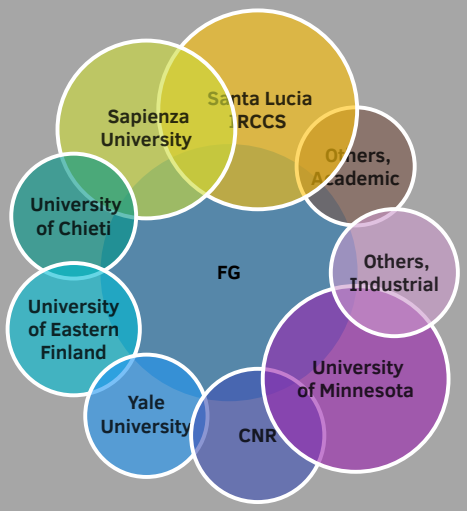
Federico Giove

MRI Scientist

About Me

I head a group of physicists and bioengineers working on the study of brain structure and function, and to the development of the relevant MR methods. My research is strongly focused on interdisciplinary approaches to neuroscience and neuroimaging. I'm involved in many national and international collaborations. I attracted as coordinator more than 2 million euros from competitive grants since 2015. I have thus gained a strong experience in coordination of complex projects.

Collaborations



Memberships

International Society for Magnetic Resonance in Medicine, Berkeley, CA, USA

Associazione Italiana Risonanza Magnetica in Medicina, Milan, I

Società Italiana di Fisica, Bologna, I

Education

2005 **PhD, Biophysics** (ISCED 8)
Sapienza University of Rome

2001 **MSc, Physics** *cum laude* (ISCED 7)
Curriculum: Biophysics
Sapienza University of Rome

Editorial activity

From 2024 **Specialty Chief Editor** of Medical Physics and Imaging section, Frontiers in Physics and Frontiers in Physiology.

From 2019 **Associate Editor** of PLOS One and Frontiers in Neuroscience.

2003-2011 **Guest Editor** of Magnetic Resonance Imaging.

From 2006 **Reviewer** for leading international journals (Sci Rep, Cereb Cortex, NeuroImage, Hum Brain Mapp, J Cerebr Blood F Metab, NMR Biomed, PLOS One, J Physiol, J Math Biol…).

Grants (last 5 years)

2024–2025 **PI** European Commission and Ministry of University and Research
NextGenerationEU–PNRR M4 C2 "MNESYS SINVASC – The signal in the noise: advanced MRI methods for the characterization of the vascular component of BOLD spontaneous fluctuations". 249619 €.

2024–2026 **Investigator** European Commission and Ministry of Health
PNRR MCNT2-2023-12378303, "Multiparametric MR imaging for the characterization of microstructural damage in the human spinal cord". 1000000 €.

2023–2025 **Unit PI** Ministry of University and Research
PRIN 2022 P202294JHK "RECENTRE — REal-time motion CorrEctioN in magneTic REsonance". 22000 €.

2023–2025 **Unit Co-PI** European Commission and Ministry of Health
PNRR PNC-E3-2022-23683266, "INNOVA — ItaliaN NetwOrk of excellence for adVanced diAgnosistics". 660000 €.

2022–2024 **Co-Coordinator and Co-PI** European Commission and Ministry of Health
PNRR MAD-2022-12376889, "Development of advanced MRI methods and of tailored signal processing for the quantitative characterization of neurodegenerative diseases through novel biomarkers identification". 1000000 €.

2021–2023 **Coordinator and PI** Regione Lazio
POR-FESR 2014–2020 A0375-2020-36648, "FISASMEM — Physiology of aging: development of quantitative MRI methods". 149614 €.

2020–2022 **Coordinator and PI** Regione Lazio
POR-FESR 2014–2020 A0320-2019-28189, "NBP — Development of a collaborative platform for advanced neuroimaging methods". 379832 €

2020–2022 **Investigator** Regione Lazio
DTC Fase 1 20591, "VEROSH — Virtual ExploRation Of Science History". 73840 €.

2019–2021 **Investigator** Regione Lazio
POR-FESR 2014–2020 A0301-2019-26658 Strenghtening of research infrastructures, "ISIS@MACH — Composite Materials ISIS Hub". 642335 €.

2015–2019 **Coordinator and PI** European Commission
H2020 MSCA-RISE 691110 "MICROBRADAM — Advanced MR methods for characterization of microstructural brain damage". 540000€.

Third mission and technological roles

From 2024 **Member** of the Joint Technical Committee on the GARR Consortium (national network infrastructure for scientific research).

From 2022 **Member** of the Scientific Committee of the Museum on Enrico Fermi in the building of the former Royal Institute of Physics in Via Panisperna.

From 2020 **Member** of the Organizing Committee of StartCup Lazio, regional competition between startups.

From 2019 **Speaker** at seminars and guide for high school students in visit at the Museum on Enrico Fermi.

Languages

- Italian
- English
- Spaniish

Programming

Matlab • LaTeX

IDEA (Siemens Pulse Programming)

Didactic activity

Teaching

From 2022	**Lecturer**	National PhD in Artificial Intelligence
	PhD course on AI in medical image analysis.	
From 2022	**Lecturer**	Sapienza University of Rome
	Postgraduate School, Course of Neurophysiology.	
From 2015	**Adjunct Professor**	Sapienza and Tor Vergata Universities, Rome
	Courses of Applied Physics and Radioprotection Physics	
2018	**Lecturer**	Campus Bio-Medico University, Rome
	First Level Master on MR techniques in clinic and research	
2017	**Lecturer**	Tor Vergata University, Rome
	Second Level Master on Radioprotection	
2015	**Lecturer**	Campus Bio-Medico University, Rome
	Second Level Master on Radioprotection	
2008–2014	**Teaching assistant**	Sapienza University of Rome
	Course of Medical Physics, with Prof. B. Maraviglia	

Mentorship

From 2006	**Supervisor of undergraduate students**	Sapienza University of Rome
	4 bachelor's degrees in Physics, 8 Master degrees in Physics, 1 Master degree in Bioengineering	
2010-2017	**Supervisor of undergraduate students**	Université Paris-Sud 11
	5 bachelor's degrees in Physics	
From 2009	**Supervisor of postgraduate students**	Sapienza University of Rome
	2 Degrees at the Postgraduate school in Medical Physics, 1 PhD thesis in Biophysics and 4 PhD theses in Morphogenesis and tissue engineering	
From 2009	**Supervisor of postgraduate students**	University Roma 3
	1 PhD thesis in Physics	

Five selected publications

M. DiNuzzo et al. Perception is associated with the brain's metabolic response to sensory stimulation. *eLife* 11 e71016 (2022).

J. Cohen-Adad et al. Generic acquisition protocol for quantitative MRI of the spinal cord. *Nature protocols* 16 (2021), 4611–4632.

D. Mascali et al. Disruption of Semantic Network in Mild Alzheimer's Disease Revealed by Resting-State fMRI. *Neuroscience* 371 (2018), 38–48.

P. Bednařík et al. Neurochemical and BOLD responses during neuronal activation measured in the human visual cortex at 7 Tesla. *Journal of Cerebral Blood Flow and Metabolism* 35 (2015), 601–610.

M. DiNuzzo et al. Glycogenolysis in astrocytes supports blood-borne glucose channeling not glycogenderived lactate shuttling to neurons: evidence from mathematical modeling. *Journal of Cerebral Blood Flow and Metabolism* 30 (2010), 1895–1904.