

# FRANCESCO GRUSSU

## CONTACT AND ONLINE PROFILES

|                |                                     |
|----------------|-------------------------------------|
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| Web site       | fragrussu.github.io                 |
| Google Scholar | Francesco Grussu                    |
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| Scopus         | 56512026600                         |
| Web of Science | AAE-8109-2019                       |
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| BlueSky        | @fragrussu.bsky.social              |

## EDUCATION AND TRAINING

|  |                  |   |
|--|------------------|---|
| <i>PhD in MR Physics</i>                           | <i>2012-2016</i> | University College London (UCL), UK   |
|  |                  | <b>Mark:</b> viva passed with no corrections. Award date: 28/03/2016.   |
|  |                  | <b>Thesis:</b> " <i>Microstructural imaging of the human spinal cord with advanced diffusion MRI</i> "                                |
| <i>Master's Degree in Bioengineering</i>           | <i>2010-2012</i> | University of Genoa, Italy  |
|  |                  | <b>Mark:</b> 110 out of 110 <i>cum laude &amp; Dignità di Stampa</i> (Examination Panel award).                                       |
|  |                  | <b>Dissertation:</b> " <i>A study on a bidirectional brain-machine interface inspired by the corticospinal control of movement</i> ". |
| <i>Bachelor's Degree in Biomedical Engineering</i> | <i>2006-2009</i> | University of Cagliari, Italy   |
|  |                  | <b>Mark:</b> 110 out of 110 <i>cum laude</i> .  |
|  |                  | <b>Dissertation:</b> " <i>Real time wavelet denoising on a DSP of neural signals coming from the peripheral nervous system</i> ".     |

## WORK EXPERIENCE

|  |                         |   |
|--|-------------------------|---|
| <i>Vall d'Hebron Institute of Oncology</i> | <i>Jan.2025-now</i>     | Senior investigator, VHIO — SPAIN   |
|  |                         | <b>Affiliations:</b> Radiomics Group, Biomedical Research Department.                 |
|  |                         | <b>Role:</b> supervisor of research line in diffusion MRI. Design of MRI studies.     |
| <i>Vall d'Hebron Institute of Oncology</i> | <i>Oct.2020-Dec.24</i>  | Senior post-doc, VHIO — BARCELONA, SPAIN  |
|  |                         | <b>Affiliations:</b> Radiomics Group, Clinical Research Department.                   |
|  |                         | <b>Role:</b> development of microstructural MRI techniques in cancer.                 |
| <i>University College London</i>           | <i>Sep.2020-now</i>     | Honorary Senior Fellow, UCL — LONDON, UK  |
|  |                         | <b>Affiliations:</b> Queen Square Institute of Neurology.                             |
|  |                         | <b>Role:</b> collaborator in MRI development in multiple sclerosis.                   |
| <i>University College London</i>           | <i>Feb.2016-Sept.20</i> | Research Associate, UCL — LONDON, UK  |
|  |                         | <b>Affiliations:</b> Institute of Neurology; Centre for Medical Image Computing.      |
|  |                         | <b>Responsibilities:</b> quantitative MRI development (spinal cord, brain, prostate). |
|  | <i>May-June 2012</i>    | Research Assistant, QMUL — LONDON, UK   |

Queen Mary Univ.  
of London

**Affiliation:** School of Electronic Engineering and Computer Science (EECS).  
**Responsibilities:** image segmentation (Computed Tomography Angiography).

#### RESEARCH VISITS

Visiting  
Researcher

*Feb.-March 2024* Champalimaud Foundation, Portugal  
**Affiliation:** Preclinical MRI lab, Champalimaud Foundation, Lisbon, Portugal.  
**Training:** preclinical MRI and multi-echo gradient echo imaging.

Visiting  
Researcher

*Sept.-Nov. 2017* New York University (NYU), USA  
**Affiliation:** Radiology, Langone Medical Center, New York City (USA).  
**Training:** advanced denoising techniques for diffusion MRI.

#### IMPACT STATS ON THE 25/11/2025

*h-index*

Google Scholar h-index: 25. Web of Science h-index: 19.

*Citations*

Total Google Scholar citations: 2430. Web of Science citations: 1435.

#### FUNDING: PROJECT GRANTS

CaixaResearch  
2025

**CaixaResearch Institute Innovation Hub 2025.** CaixaResearch Institute, Barcelona (Spain). “*Computational Magnetic Resonance for metastatic prostate cancer*”. **Award:** €30,000. **Role:** principal investigator. **Duration:** 01/01/2026-31/12/2026. Competitive call open to researchers from Innovation Hub institutions (VHIO; IrsiCaixa; ISGlobal; BarcelonaBeta).

AEI Generación de  
Conocimiento/  
Knowledge  
Generation 2024

**2024 Knowledge Generation Projects (Proyectos de Generación de Conocimiento),** National Research Agency (Agencia Estatal de Investigación (AEI)), Ministry of Science, Innovation and Universities, Spain. “*Magnetic Resonance Imaging (MRI) foundational artificial intelligence for non-invasive, histologically-meaningful cancer characterisation (MRI-Found-Histo)*”. **Award:** €118,750. **Role:** principal investigator. **Duration:** 01/09/2025-31/08/2028. **Code:** PID2024-158670OA-Ioo.

UCL  
pump-priming  
award 2017

**Departmental seed grant.** Centre for Medical Image Computing *Pump-priming Award* at University College London (UCL). “*Enabling multi-site high precision spinal cord MRI*”. **Award:** GBP 23,900. **Role:** principal investigator. **Duration:** 01/07/2017-30/06/2018.

#### FUNDING: FELLOWSHIPS AND STUDENTSHIPS

“la Caixa” Junior  
Leader Fellowship  
2022

**2022 Junior Leader Retaining post-doctoral fellowship,** “la Caixa” Foundation, Spain. “*New-generation oncological MRI (New-OncoMRI): development, validation and application*”. **Award:** €294,900. **Role:** principal investigator and fellow. **Duration:** 30/09/2022-29/09/2025. **Code:** ID 100010434, fellowship number LCF/BQ/PR22/11920010.

Beatriu de Pinós  
Fellowship 2020

**2020 Beatriu de Pinós post-doctoral fellowship,** AGAUR, Secretary of Universities and Research (Govt of Catalonia, Spain). “*Advancing Magnetic Resonance Imaging against liver cancer*”. **Award:** €144,300. **Role:** principal investigator and fellow. **Duration:** 01/01/2022-31/12/2024, renounced on 29/09/2022 due to incompatibility with the “la Caixa” Junior Leader fellowship. **Code:** 2020 BP 00117.

UCL Grand  
Challenge PhD  
studentship 2012

UCL School of Life and Medical Science *Grand Challenge PhD Studentship*, awarded to work on the project “*Axonal density as MR imaging biomarker: from bench to bedside*”. **Award:** 59,000 GBP. **Description:** PhD studentship covering a 3-year student stipend, tuition fees at UK/EU rate, and research costs. **Duration:** 09/2012-12/2015.

## SCIENTIFIC ARTICLES AND REVIEWS — SENIOR AUTHORSHIP

- Comm Bio* 2025  
*"Histology-informed microstructural diffusion simulations for MRI cancer characterisation — the Histo-microSim framework".* Grigoriou A et al, Grussu F. Communications Biology (2025), accepted 18/10/2025 (in production), doi: [10.1038/s42003-025-09096-3](https://doi.org/10.1038/s42003-025-09096-3). Senior (last) author, corresponding author.
- Media* 2025  
*"SpinFlowSim: a blood flow simulation framework for histology-informed diffusion MRI microvasculature mapping in cancer".* Voronova AK et al, Grussu F. Medical Image Analysis (2025), 102: 103531, doi: [10.1016/j.media.2025.103531](https://doi.org/10.1016/j.media.2025.103531). Senior (last) author, corresponding author.
- JMRI* 2025  
*"Enhancing tumor microstructural quantification with machine learning and diffusion-relaxation MRI".* Macarro C et al, Grussu F. Journal of Magnetic Resonance Imaging (2025), 61(2): 1018-1021, doi: [10.1002/jmri.29484](https://doi.org/10.1002/jmri.29484). Senior (last) author, corresponding author.
- JMRI* 2024  
**Review:** *"Advanced diffusion-weighted MRI for cancer microstructure assessment in body imaging, and its relationship with histology".* Fokkinga E, Hernandez-Tamames JA, Ianus A, Nilsson M, Tax CMW, Perez-Lopez R, Grussu F. Journal of Magnetic Resonance Imaging (2024), 60(4): 1278-1304, doi: [10.1002/jmri.29144](https://doi.org/10.1002/jmri.29144). Senior (last) author, corresponding author.
- Front Neurol* 2021  
*"Comparison of neurite orientation dispersion and density imaging and two-compartment spherical mean technique parameter maps in multiple sclerosis".* Johnson D et al, Grussu F. Frontiers in Neurology (2021), 12: 662855, doi: [10.3389/fneur.2021.662855](https://doi.org/10.3389/fneur.2021.662855). Senior (last) author.

## SCIENTIFIC ARTICLES AND REVIEWS — (CO)-FIRST AUTHORSHIP

- Comm Med* 2025  
*"Clinically feasible liver tumour cell size measurement through histology-informed in vivo diffusion MRI".* Grussu F et al. Communications Medicine (2025), published 20/11/2025 (in press), doi: [10.1038/s43856-025-01246-2](https://doi.org/10.1038/s43856-025-01246-2). Corresponding author.
- Cell Rep Med* 2024  
*"An accessible deep learning tool for voxel-wise classification of brain malignancies from perfusion MRI".* Garcia-Ruiz A, Pons-Escoda A, Grussu F et al. Cell Reports Medicine (2024), 5(3): 101464, doi: [10.1016/j.xcrm.2024.101464](https://doi.org/10.1016/j.xcrm.2024.101464). AGR, APE and FG are joint first authors (equal contribution).
- Magn Reson Med* 2022  
*"Diffusion MRI signal cumulants and hepatocyte microstructure at fixed diffusion time: Insights from simulations, 9.4T imaging, and histology".* Grussu F et al. Magnetic Resonance in Medicine (2022), 88(1): 365-379, doi: [10.1002/mrm.29174](https://doi.org/10.1002/mrm.29174). Corresponding author.
- Front Phys* 2021  
*"Feasibility of data-driven, model-free quantitative MRI protocol design: application to brain and prostate diffusion-relaxation imaging".* Grussu F et al. Frontiers in Physics (2021), 9: 752208, doi: [10.3389/fphy.2021.752208](https://doi.org/10.3389/fphy.2021.752208). Corresponding author.
- Sem Ultrasound CT MRI* 2021  
**Review:** *"Diffusion-weighted imaging: recent advances and applications".* Martinez-Heras E, Grussu F, et al. Seminars in Ultrasound, CT and MRI (2021), 42(5): 490-506, doi: [10.1053/j.sult.2021.07.006](https://doi.org/10.1053/j.sult.2021.07.006). EMH and FG are joint first authors (equal contribution).
- NeuroImage* 2020  
*"Multi-parametric quantitative in vivo spinal cord MRI with unified signal readout and image denoising".* Grussu F et al. NeuroImage (2020), 217: 116884, doi: [10.1016/j.neuroimage.2020.116884](https://doi.org/10.1016/j.neuroimage.2020.116884). Corresponding author.
- Magn Reson Med* 2019  
*"Relevance of time-dependence for clinically viable diffusion imaging of the spinal cord".* Grussu F et al. Magnetic Resonance in Medicine (2019), 81(2): 1247-1264, doi: [10.1002/mrm.27463](https://doi.org/10.1002/mrm.27463). Corresponding author.
- Ann Clin Transl Neurol* 2017  
*"Neurite dispersion: a new marker of multiple sclerosis spinal cord pathology?".* Grussu F, Schneider T et al. Annals of Clinical and Translational Neurology (2017), 4(9):663-679, doi: [10.1002/acn3.445](https://doi.org/10.1002/acn3.445). FG and TS are joint first authors

(equal contribution). Paper featured in Nature Reviews Neurology "Research Highlights" (Patel M, Nat Rev Neur (2017), 13(10): 578, doi: [10.1038/nrneurol.2017.127](https://doi.org/10.1038/nrneurol.2017.127)).

*J Neurosci Meth*  
2016

"A framework for optimal whole-sample histological quantification of neurite orientation dispersion in the human spinal cord". Grussu F et al. Journal of Neuroscience Methods (2016), 273: 20-32, doi: [10.1016/j.jneumeth.2016.08.002](https://doi.org/10.1016/j.jneumeth.2016.08.002). Corresponding author.

*NeuroImage* 2015

"Neurite orientation dispersion and density imaging of the healthy cervical spinal cord in vivo". Grussu F et al. NeuroImage (2015), 111: 590-601, doi: [10.1016/j.neuroimage.2015.01.045](https://doi.org/10.1016/j.neuroimage.2015.01.045). Corresponding author.

#### SCIENTIFIC ARTICLES AND REVIEWS — CO-AUTHORSHIP

*JMRI* 2025

"The sense of smell (SoS) atlas: its creation and first application to investigate COVID-19 related anosmia with a comprehensive quantitative MRI protocol". Gaviraghi M, ..., Grussu F et al. Journal of Magnetic Resonance Imaging (2025), e-pub ahead of print, doi: [10.1002/jmri.70128](https://doi.org/10.1002/jmri.70128).

*Eur Radiol* 2025

**Review:** "ESR Essentials: diffusion-weighted MRI—practice recommendations by the European Society for Magnetic Resonance in Medicine and Biology". Palombo M, Bodini B, Grussu F et al. European Radiology (2025), e-pub ahead of print, doi: [10.1007/s00330-025-12033-x](https://doi.org/10.1007/s00330-025-12033-x).

*Magn Res Med*  
2025c

**Review:** "Considerations and recommendations from the ISMRM Diffusion Study Group for preclinical diffusion MRI: Part 3—Ex vivo imaging: Data processing, comparisons with microscopy, and tractography". Schilling KG, Howard AFD, Grussu F et al. Magnetic Resonance in Medicine (2025), 93(6): 2561-2582, doi: [10.1002/mrm.30424](https://doi.org/10.1002/mrm.30424).

*Magn Res Med*  
2025b

**Review:** "Considerations and recommendations from the ISMRM diffusion study group for preclinical diffusion MRI: Part 2—Ex vivo imaging: Added value and acquisition". Schilling KG, Grussu F et al. Magnetic Resonance in Medicine (2025), 93(6): 2535-2560, doi: [10.1002/mrm.30435](https://doi.org/10.1002/mrm.30435).

*Magn Res Med*  
2025a

**Review:** "Considerations and recommendations from the ISMRM diffusion study group for preclinical diffusion MRI: Part 1: In vivo small-animal imaging". Jelescu IO, Grussu F et al. Magnetic Resonance in Medicine (2025), 93(6): 2507-2534, doi: [10.1002/mrm.30429](https://doi.org/10.1002/mrm.30429).

*Imag Neurosci*  
2025

"Body size and intracranial volume interact with the structure of the central nervous system: A multi-center in vivo neuroimaging study". Labounek R, ... Grussu F et al. Imaging Neuroscience (2025), 3: 00559, doi: [10.1162/imag\\_a\\_00559](https://doi.org/10.1162/imag_a_00559).

*Sci Rep* 2025

"Evaluation of magnetic resonance spectroscopy total sodium concentration measures, and associations with microstructure and physical impairment in cervical myelopathy". Solanky B, ... Grussu F et al. Scientific Reports (2025), 15: 7014, doi: [10.1038/s41598-025-91658-w](https://doi.org/10.1038/s41598-025-91658-w).

*J Immunother*  
Cancer 2025

"Radiomics signature for dynamic monitoring of tumor inflamed microenvironment and immunotherapy response prediction". Bernatowicz K, ... Grussu F et al. Journal for ImmunoTherapy of Cancer (2025), 13: e009140, doi: [10.1136/jitc-2024-009140](https://doi.org/10.1136/jitc-2024-009140).

*NeuroImage Rep*  
2024

"Investigating the relationship between thalamic iron concentration and disease severity in secondary progressive multiple sclerosis using quantitative susceptibility mapping: Cross-sectional analysis from the MS-STAT2 randomised controlled trial". Williams T, ..., Grussu F, ..., Chataway J; On behalf of The UCL MS-STAT2 investigators. NeuroImage: Reports (2024), 4(3): 100216, doi: [10.1016/j.yrnirp.2024.100216](https://doi.org/10.1016/j.yrnirp.2024.100216).

*Eur Urol* 2024

"Whole-body magnetic resonance imaging as a treatment response biomarker in castration-resistant prostate cancer with bone metastases: the iPROMET clinical trial". Garcia-Ruiz A, ... Grussu F et al. European Urology (2024), 86(3): 272-274, doi: [10.1016/j.eururo.2024.02.016](https://doi.org/10.1016/j.eururo.2024.02.016).

- Mult Scler 2024*  
*"What contributes to disability in progressive MS? A brain and cervical cord-matched quantitative MRI study". Tur C, ..., Grussu F, ..., Gandini Wheeler-Kingshott CAM. Multiple Sclerosis Journal (2024), e-pub ahead of print, doi: [10.1177/13524585241229969](https://doi.org/10.1177/13524585241229969).*
- Radiology: AI 2024*  
*"Identification of precise 3D CT radiomics for habitat computation by machine learning in cancer". Prior O, ..., Grussu F, Bernatowicz K\*, Perez-Lopez R\*. Radiology: Artificial Intelligence (2024), 6(2): e230118, doi: [10.1148/ryai.230118](https://doi.org/10.1148/ryai.230118). \*: KB and RPL are joint senior authors.*
- Movement Disord 2023*  
*"Multimodal analysis of the visual pathways in Friedreich's Ataxia reveals novel biomarkers". Thomas-Black G, ... Grussu F et al. Movement Disorders (2023), 38(6): 959-969, doi: [10.1002/mds.29277](https://doi.org/10.1002/mds.29277).*
- Sci Rep 2023*  
*"Feasibility of in vivo multi-parametric quantitative magnetic resonance imaging of the healthy sciatic nerve with a unified signal readout protocol". Boonsuth R, Battiston M, Grussu F et al. Scientific Reports (2023), 13: 6565, doi: [10.1038/s41598-023-33618-w](https://doi.org/10.1038/s41598-023-33618-w).*
- Front Neuroinform 2023*  
*"Patterns of inflammation, microstructural alterations, and sodium accumulation define multiple sclerosis subtypes after 15 years from onset". Ricciardi A, Grussu F et al. Frontiers in Neuroinformatics (2023), 17: 1060511, doi: [10.3389/fninf.2023.1060511](https://doi.org/10.3389/fninf.2023.1060511).*
- Neurology 2023*  
*"Differentiating Multiple Sclerosis from AQP4-Neuromyelitis Optica Spectrum Disorder and MOG-antibody disease with imaging". Cortese R, ... Grussu F et al. Neurology (2023), 100(3): e308-e323, doi: [10.1212/WNL.00000000000201465](https://doi.org/10.1212/WNL.00000000000201465).*
- Am J Neuroradiol 2022*  
*"Diffuse large B-cell Epstein-Barr virus-positive primary CNS lymphoma in non-AIDS patients: high diagnostic accuracy of DSC perfusion metrics". Pons-Escoda A, ... Grussu F et al. American Journal of Neuroradiology (2022), 43(11): 1567-1574, doi: [10.3174/ajnr.A7668](https://doi.org/10.3174/ajnr.A7668).*
- Magn Reson Med 2022c*  
*"Multi-echo quantitative susceptibility mapping: how to combine echoes for accuracy and precision at 3 Tesla". Biondetti E, ..., Grussu F et al. Magnetic Resonance in Medicine (2022), 88(5): 2101-2116, doi: [10.1002/mrm.29365](https://doi.org/10.1002/mrm.29365).*
- Magn Reson Med 2022b*  
*"SENSE EPI reconstruction with 2D phase error correction and channel-wise noise removal". Powell E, ..., Grussu F et al. Magnetic Resonance in Medicine (2022), 88(5): 2157-2166, doi: [10.1002/mrm.29349](https://doi.org/10.1002/mrm.29349).*
- Magn Reson Med 2022a*  
*"Comparison of multicenter MRI protocols for visualizing the spinal cord gray matter". Cohen-Adad J, ..., Grussu F et al. Magnetic Resonance in Medicine (2022), 88(2): 849-859, doi: [10.1002/mrm.29249](https://doi.org/10.1002/mrm.29249).*
- Eur Radiol 2022*  
*"Voxel-level analysis of normalized DSC-PWI time-intensity curves: a potential generalizable approach and its proof of concept in discriminating glioblastoma and metastasis". Pons-Escoda A, ..., Grussu F et al. European Radiology (2022), 32: 3705-3715, doi: [10.1007/s00330-021-08498-1](https://doi.org/10.1007/s00330-021-08498-1).*
- BMJ Open 2022*  
*"Histo-MRI map study protocol: a prospective cohort study mapping MRI to histology for biomarker validation and prediction of prostate cancer". Singh S, ..., Grussu F et al. BMJ Open (2022), 12: e059847, doi: [10.1136/bmjopen-2021-059847](https://doi.org/10.1136/bmjopen-2021-059847).*
- NeuroImage Clin 2022*  
*"Spatial patterns of brain lesions assessed through covariance estimations of lesional voxels in multiple sclerosis: the SPACE-MS technique". Tur C, Grussu F et al. NeuroImage: Clinical (2022), 33: 102904, doi: [10.1016/j.nicl.2021.102904](https://doi.org/10.1016/j.nicl.2021.102904).*
- Front Neurol 2021*  
*"Assessing lumbar plexus and sciatic nerve damage in relapsing-remitting multiple sclerosis using magnetisation transfer ratio". Boonsuth R, ..., Grussu F et al. Frontiers in Neurology (2021), 12: 763143, doi: [10.3389/fneur.2021.763143](https://doi.org/10.3389/fneur.2021.763143).*
- Sci Rep 2021*  
*"Robust imaging habitat computation using voxel-wise radiomics features". Bernatowicz K, Grussu F et al. Scientific Reports (2021), 11: 20133, doi: [10.1038/s41598-021-99701-2](https://doi.org/10.1038/s41598-021-99701-2).*

- Sci Data* 2021 “Open-access quantitative MRI data of the spinal cord and reproducibility across participants, sites and manufacturers”. Cohen-Adad J, ..., Grussu F et al. *Scientific Data* (2021), 8: 219, doi: [10.1038/s41597-021-00941-8](https://doi.org/10.1038/s41597-021-00941-8).
- Nat Protoc* 2021 “Generic acquisition protocol for quantitative MRI of the spinal cord”. Cohen-Adad J, ..., Grussu F et al. *Nature Protocols* (2021), 16: 4611–4632, doi: [10.1038/s41596-021-00588-o](https://doi.org/10.1038/s41596-021-00588-o).
- Brain* 2021 “Brain microstructural and metabolic alterations detected *in vivo* at the onset of the first demyelinating event”. Collorone S, ..., Grussu F et al. *Brain* (2021), 144: 1409–1421, doi: [10.1093/brain/awab043](https://doi.org/10.1093/brain/awab043).
- NeuroImage* 2021 “Uncertainty modelling in deep learning for safer neuroimage enhancement: demonstration in diffusion MRI”. Tanno R, ... Grussu F et al. *NeuroImage* (2021), 225: 117366, doi: [10.1016/j.neuroimage.2020.117366](https://doi.org/10.1016/j.neuroimage.2020.117366).
- Mult Scler* 2020b “Reduced neurite density in the brain and cervical spinal cord in relapsing-remitting multiple sclerosis: A NODDI study”. Collorone S, Cowley N, Grussu F et al. *Multiple Sclerosis Journal* (2020), 26(13): 1647–1657, doi: [10.1177/1352458519885107](https://doi.org/10.1177/1352458519885107).
- Mult Scler* 2020a “A multi-shell multi-tissue diffusion study of brain connectivity in early multiple sclerosis”. Tur C, Grussu F et al. *Multiple Sclerosis Journal* (2020), 26(7): 774–785, doi: [10.1177/1352458519845105](https://doi.org/10.1177/1352458519845105).
- NeuroImage* 2020b “Cross-scanner and cross-protocol multi-shell diffusion MRI data harmonization: Algorithms and results”. Ning L, Bonet-Carne E, Grussu F et al. *NeuroImage* (2020), 221: 117128, doi: [10.1016/j.neuroimage.2020.117128](https://doi.org/10.1016/j.neuroimage.2020.117128).
- NeuroImage* 2020a “Generalised boundary shift integral for longitudinal assessment of spinal cord atrophy”. Prados F, ..., Grussu F et al. *NeuroImage* (2020), 209: 116489, doi: [10.1016/j.neuroimage.2019.116489](https://doi.org/10.1016/j.neuroimage.2019.116489).
- Magn Reson Med* 2019 “Fast bound pool fraction mapping via steady-state magnetization transfer saturation using single-shot EPI”. Battiston M, ..., Grussu F et al. *Magnetic Resonance in Medicine* (2019), 82: 1025–1040, doi: [10.1002/mrm.27792](https://doi.org/10.1002/mrm.27792).
- NeuroImage* 2019 “Cross-scanner and cross-protocol diffusion MRI data harmonisation: a benchmark database and evaluation of algorithms”. Tax CMW, Grussu F et al. *NeuroImage* (2019), 195: 285–299, doi: [10.1016/j.neuroimage.2019.01.077](https://doi.org/10.1016/j.neuroimage.2019.01.077).
- Sci Rep* 2018 “Structural cortical network reorganization associated with early conversion to multiple sclerosis”. Tur C, ..., Grussu F et al. *Scientific Reports* (2018), 8: 10715, doi: [10.1038/s41598-018-29017-1](https://doi.org/10.1038/s41598-018-29017-1).
- Magn Reson Med* 2018b “An optimized framework for quantitative magnetization transfer imaging of the cervical spinal cord *in vivo*”. Battiston M, Grussu F et al. *Magnetic Resonance in Medicine* (2018) 79(5): 2576–2588, doi: [10.1002/mrm.26909](https://doi.org/10.1002/mrm.26909).
- Magn Reson Med* 2018a “Fast and reproducible *in vivo* T1 mapping of the human cervical spinal cord”. Battiston M, ..., Grussu F et al. *Magnetic Resonance in Medicine* (2018), 79(4): 2142–2148, doi: [10.1002/mrm.26852](https://doi.org/10.1002/mrm.26852).
- NeuroImage* 2017 “Spinal cord grey matter segmentation challenge”. Prados F, ..., Grussu F et al. *NeuroImage* (2017), 152:312–329, doi: [10.1016/j.neuroimage.2017.03.010](https://doi.org/10.1016/j.neuroimage.2017.03.010).
- PlosOne* 2016 “Reduced field-of-view diffusion-weighted imaging of the lumbosacral enlargement: a pilot *in vivo* study of the healthy spinal cord at 3T”. Yiannakas MC, Grussu F et al. *PlosOne* (2016), 11(10): e0164890, doi: [10.1371/journal.pone.0164890](https://doi.org/10.1371/journal.pone.0164890).

#### CONFERENCE PAPERS: FIRST AUTHORSHIP

- CDMRI* 2020 “Deep learning model fitting for diffusion-relaxometry: a comparative study”. Grussu F, Battiston M, Palombo M, Schneider T, Wheeler-Kingshott CAM, Alexander

DC. Proc of 2020 MICCAI Workshop on Computational Diffusion MRI, 2021, 159-172, doi: [10.1007/978-3-030-73018-5\\_13](https://doi.org/10.1007/978-3-030-73018-5_13). Corresponding author.

#### CONFERENCE PAPERS: CO-AUTHORSHIP

- MICCAI 2022* “*Progressive subsampling for oversampled data - application to quantitative MRI*”. Blumberg SB, ..., Grussu F et al. Proc of Medical Image Computing and Computing Assisted Intervention (MICCAI) 2022, Lecture Notes in Computer Science, 13436: 421–431, doi: [10.1007/978-3-031-16446-0\\_40](https://doi.org/10.1007/978-3-031-16446-0_40).
- CDMRI 2019* “*Acquiring and predicting multidimensional diffusion (MUDI) data: an open challenge*”. Pizzolato M, ..., Grussu F et al. Proc of 2019 MICCAI Workshop on Computational Diffusion MRI, 2020, 195-208, doi: [10.1007/978-3-030-52893-5\\_17](https://doi.org/10.1007/978-3-030-52893-5_17).
- CDMRI 2018b* “*Multi-shell diffusion MRI harmonisation and enhancement challenge (MUSHAC): progress and results*”. Ning L, ..., Grussu F et al. Proc of 2018 MICCAI Workshop on Computational Diffusion MRI, 2019, 217-224, doi: [10.1007/978-3-030-05831-9\\_18](https://doi.org/10.1007/978-3-030-05831-9_18).
- CDMRI 2018a* “*Spatial characterisation of fibre response functions for spherical deconvolution in multiple sclerosis*”. Tur C, Grussu F et al. Proc of 2018 MICCAI Workshop on Computational Diffusion MRI, 2019, 265-279, doi: [10.1007/978-3-030-05831-9\\_21](https://doi.org/10.1007/978-3-030-05831-9_21).
- MICCAI 2016* “*Bayesian image quality transfer*”. Tanno R, ..., Grussu F et al. Proc of Medical Image Computing and Computing Assisted Intervention (MICCAI) 2016, Lecture Notes in Computer Science, 9901: 265-273, doi: [10.1007/978-3-319-46723-8\\_31](https://doi.org/10.1007/978-3-319-46723-8_31).

#### BOOK CHAPTERS

- CRC Press 2018* Chapter 8: “*D — the diffusion of water (DTI)*”. Grussu F and Wheeler-Kingshott CAM. “*Quantitative MRI of the brain*” (2nd edition, 2018), Cercignani M, Dowell N and Tofts P editors. ISBN 978-1-138-03285-9, doi: [10.1201/b21837](https://doi.org/10.1201/b21837).

#### BOOK EDITING

- CDMRI 2018* “*Computational Diffusion MRI*”. Bonet-Carne E, Grussu F, Ning L, Sepehrband F and Tax C editors. Proc. of 2018 MICCAI Workshop on “*Computational Diffusion MRI*”, Granada, Spain, 20/09/2018. ISBN: 978-3-030-05830-2, doi: [10.1007/978-3-030-05831-9](https://doi.org/10.1007/978-3-030-05831-9).
- CDMRI 2017* “*Computational Diffusion MRI*”. Kaden E, Grussu F, Ning L, Tax C and Veraart J editors. Proc. of 2017 MICCAI Workshop on “*Computational Diffusion MRI*”, Quebec City, Canada, 10/09/2017. ISBN: 978-3-319-73839-0, doi: [10.1007/978-3-319-73839-0](https://doi.org/10.1007/978-3-319-73839-0).

#### PRIZES AND AWARDS

- 2023 **Best oral paper award**, 2023 annual meeting of the Iberian Chapter of the International Society for Magnetic Resonance in Medicine (ISMRM), Trainee competition for abstract Grussu F et al, Proc of ISMRM Iberian Chapt. 2023.
- 2021 **3rd prize**, 2021 ISMRM MR of Cancer Study Group, Trainee competition for abstract Grussu F et al, Proc of ISMRM 2021, p.0699.
- 2021 **Magna cum Laude** award, abstract (Grussu et al, p.0699, ISMRM 2021).
- 2020 **Magna cum Laude** award, abstract (Grussu et al, p.1035, ISMRM 2020).

|             |   |
|-------------|---|
| 2020        | <b>2nd prize</b> (shared), 2020 ISMRM British and Irish Chapter " <i>Mansfield Research Innovation Award</i> " for abstract Grussu F et al, Proc of ISMRM 2020.   |
| 2019        | <b>1st prize</b> in the " <i>Multi-dimensional Diffusion Imaging</i> " (MUDI) challenge at 2019 CDMRI MICCAI Workshop (Shenzhen, China, 17/10/2019) (Team: Grussu F, Blumberg SB, Ianus A, Mertzanidou T, Alexander DC; Method: SARDU-Net). |
| 2018-2020   | <b>Elected trainee representative</b> for the <i>White Matter Study Group</i> of the International Society for Magnetic Resonance in Medicine (ISMRM).  |
| 2018 & 2019 | <b>"Distinguished reviewer"</b> Award for Magnetic Resonance in Medicine, awarded at the 2018 and 2019 ISMRM annual meetings.   |
| 2018        | <b><i>Magna cum Laude</i></b> award, abstract (Grussu et al, p.466, ISMRM 2018).  |
| 2017        | Poster short-listed for presentation at the 2017 ISMRM <i>Diffusion study group</i> (Grussu et al, p.3399, ISMRM 2017).   |
| 2017        | <b><i>Magna cum Laude</i></b> award, abstract (Grussu et al, p.3399, ISMRM 2017).   |
| 2016        | Abstract submission among best 5 in the " <i>Validation</i> " session, ISMRM workshop <i>Breaking the barriers of diffusion MRI</i> .   |
| 2016        | Poster short-listed for presentation at the 2016 ISMRM <i>Diffusion study group</i> (Grussu et al, p.2009, ISMRM 2016).   |
| 2015        | Young Investigators poster competition finalist (80 selected), European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) 2015.  |
| 2015        | <b><i>Magna cum Laude</i></b> award, abstract (Grussu et al, p.0909, ISMRM 2015).   |
| 2015        | <b><i>Magna cum Laude</i></b> award, abstract (Grussu et al, p.0154, ISMRM 2015).   |
| 2013        | <b>1st prize</b> , Master's degree awards, Mòguru council, Italy (1st prize).   |
| 2013        | Poster short-listed as a finalist of the 2013 ISMRM <i>White Matter Study Group</i> poster competition.   |
| 2012        | <b>2012 Master's degree thesis prize</b> , <i>Gruppo Nazionale di Bioingegneria</i> (GNB, National Bioengineering Group).   |
| 2009        | <b>Award for the best student graduating in Biomedical Engineering</b> (BEng) in 2009, University of Cagliari, Italy.   |
| 2008-2011   | <b>"Assegno di Merito" (Merit cheque)</b> by the Sardinian regional government for excellence in Academic Studies, obtained yearly from 2008 to 2011.   |

#### AWARDS IN SUPERVISORY ROLES

|      |  |
|------|--|
| 2024 | <b>Best application (poster)</b> by the Diffusion Study Group of the International Society for Magnetic Resonance in Medicine (ISMRM) to student Anna Voronova, for abstract (Voronova A et al, and Grussu F, p.0124, ISMRM 2024). |
| 2024 | <b><i>Summa cum Laude</i></b> award to student Anna Voronova, for abstract (Voronova A et al, and Grussu F, p.0124, ISMRM 2024).   |
| 2024 | <b><i>Magna cum Laude</i></b> award to student Athanasios Grigoriou, for abstract (Grigoriou A et al, and Grussu F, p.0699, ISMRM 2024).   |

#### TRAVEL GRANTS

|      |  |
|------|--|
| 2020 | UCL Dept. of neuroinflammation travel grant funding attendance at the 2020 ISMRM meeting (GBP 400) – awarded for April 2020, unused due to COVID-19. |
|------|--|

|                  |  |
|------------------|--|
| 2016             | ISMRM Trainee Stipend for attendance at ISMRM workshop “ <i>Breaking the barriers of Diffusion MRI</i> (waived registration fees)”.  |
| 2015, 2016       | UCL School of Life and Medical Sciences Travel Grant funding the attendance at the 2015 (GBP 800) and 2016 (GBP 940) ISMRM meetings. |
| 2015             | ECTRIMS Travel Grant funding the attendance at the 2015 ECTRIMS meeting in Barcelona (Spain) (EUR 400).                              |
| 2013, 2015, 2017 | Guarantors of Brain Travel Grant funding the attendance at the 2013 (GBP 800), 2015 (GBP 500) and 2017 (GBP 800) ISMRM meetings.     |
| 2012-2015        | ISMRM Trainee Stipend supporting attendance at the annual meeting (yearly).  |

#### INVITED ORAL COMMUNICATIONS

|                            |  |
|----------------------------|--|
| BSC 2025                   | “ <i>Histology-informed computer simulations enhance Magnetic Resonance Imaging (MRI) virtual biopsies in cancer</i> ”. “ <b>Severo Ochoa Research Seminar</b> ”, Barcelona Supercomputing Center (BSC), Barcelona, Spain, 13/11/2025.   |
| ODELIA Summer School 2025  | “ <i>An overview of Magnetic Resonance Imaging (MRI): from basic principles to cutting-edge applications</i> ”. ODELIA consortium on open source swarm learning to empower medical AI. “ <b>2025 ODELIA Summer School</b> ”, Vall d’Hebron Institute of Oncology (VHIO), Barcelona, Spain, 18/09/2025.             |
| ISMRM Iberian Chapter 2025 | “ <i>Quantitative imaging and AI Automation</i> ”. International Society for Magnetic Resonance in Medicine (ISMRM), 2025 annual meeting of the Iberian Chapter. “ <b>2025 ISMRM Iberian Chapter pre-conference Summer School</b> ”, Institut de Bioenginyeria de Catalunya (IBEC), Barcelona (Spain), 02/07/2025. |
| ISMRM Workshop 2025        | “ <i>Challenges in body diffusion and how to overcome them</i> ”. International Society for Magnetic Resonance in Medicine (ISMRM) Workshop on: “ <b>40 years of Diffusion: past, present and future perspectives</b> ”, Kyoto University, Kyoto (Japan), 18/02/2025.  |
| EPFL 2024                  | “ <i>Diffusion MR signal modelling for oncological body imaging</i> ”. <b>Visitors Talk</b> , Centre for Biomedical Imaging (CIBM), École Polytechnique Fédérale de Lausanne (EPFL), Lausanne (Switzerland), 09/10/2024.   |
| ESMRMB workshop 2024       | “ <i>Modelling body microstructure</i> ”. ESMRMB 2024 pre-congress workshop “ <b>Leaps in Microstructure Imaging: Exploring New Horizons</b> ”, Barcelona (Spain), 02/10/2024.   |
| DiPy workshop 2024         | “ <i>Advanced body diffusion MRI for oncological applications</i> ”. 2024 <b>DiPy workshop</b> , online, 14/03/2024.   |
| ESMRMB workshop 2023       | “ <i>Histology-informed body diffusion MRI in oncological applications</i> ”. ESMRMB 2023 pre-congress workshop “ <b>Frontiers in preclinical MRI</b> ”, Basel (Switzerland), 04/10/2023.  |
| ESMRMB lectures 2023       | “ <i>Diffusion MRI in the body</i> ”. <b>ESMRMB Lectures on MR</b> , “Introduction to diffusion-weighted MR imaging and spectroscopy”, Cardiff (UK), 07/09/2023.   |
| DSG ISMRM 2023             | “ <i>Emerging models in oncology</i> ”. “ <b>Virtual biopsies by diffusion MRI: are we there yet in oncology?</b> ”, Virtual meeting of the International Society for Magnetic Resonance in Medicine (ISMRM) Diffusion Study Group (DSG). Online, 19/04/2023.  |
| UCL 2022b                  | “ <i>Data-driven, model-free, deep learning approach for quantitative MRI protocol design</i> ”. “ <b>Microstructure Imaging Meets Machine Learning</b> ” (MIML) workshop, University College London, London (UK), 13/05/2022.   |
| ISMRM 2022                 | “ <i>Modeling diffusion in cancer and body</i> ”. Educational session: “ <b>Diffusion</b> ”, 2022  |

annual meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), London (UK), 07/05/2022.

- UCL 2022a* “*Diffusion MRI signal cumulants and hepatocyte microstructure at fixed diffusion time: Insights from simulations, 9.4T imaging, and histology*”. Centre for Medical Image Computing *qMRI interest group*, University College London, London (UK), virtual talk 24/03/2022.
- UCL 2021* “*Diffusion-relaxation microstructural MRI of the liver for application in oncology*”. Centre for Medical Image Computing *qMRI interest group*, University College London, London (UK), virtual talk 22/04/2021.
- BCNatal 2021* “*Diffusion-relaxation microstructural MRI of the liver for application in oncology: initial experience*”. BCNatal Fetal Medicine Research Centre virtual seminar, Hospital Clinic and Sant Joan de Déu, Universitat de Barcelona, Barcelona (Spain) 18/01/2021.
- BIC ISMRM 2020* “*SARDU-Net: a new method for model-free, data-driven experiment design in qMRI*”. ISMRM British and Irish Chapter post-grad virtual meeting (online), 17/09/2020.
- University of Verona 2019* “*Diffusion MRI data harmonisation*”. 2019 School on Brain Connectomics, University of Verona (Italy), 24/09/2019.
- UCL workshop 2019* “*Insight on spinal cord microstructure from time-dependent diffusion*”. Spinal cord MRI workshop, UCL, London (UK), 21/01/2019.
- ISMRM Italian Chapter 2018* “*Axonal dispersion from diffusion MRI: a new marker of microstructural damage*”. Italian Association for Magnetic Res. in Medicine, Padua (Italy), 10/05/2018.
- King's College London 2018* “*Microstructural imaging of the human spinal cord: insights from in vivo and ex vivo data*”. Inst. of Psychiatry, Psychology and Neuroscience, KCL (UK) 19/03/2018.
- UCL workshop 2018* “*Histological validation of neurite dispersion from diffusion MRI in MS*”. Mult. sclerosis: translating eng. innovation into the clinic, UCL, London (UK) 31/01/2018.
- Polytechnique Montreal 2017* “*Advanced microstructural imaging in the human spinal cord*”. NeuroPoly Lab seminar, Montreal (Canada), 16/11/2017.
- New York University 2017* “*Quantitative MRI of the spinal cord: challenges, feasibility and future perspectives*”. Department of Radiology, NY City (USA), 13/10/2017.
- University of Cagliari 2015* “*Advanced diffusion-weighted MRI of the human spinal cord: feasibility and future directions in multiple sclerosis*”. Fac. of Engineering, Cagliari (Italy), 24/07/2015.
- Spinal Cord MRI Workshop 2015* “*Histological validation of quantitative MRI methods*”. 2nd Spinal Cord MRI Workshop, Toronto (Canada), 06/06/2015.

#### MODERATION OF SCIENTIFIC SESSIONS

- ISMRM Iberian Chapter 2025* **Moderator** of oral scientific session “*Clinical session*”, 03/07/2025, 2025 annual meeting of the Iberian Chapter of the International Society for Magnetic Resonance in Medicine (ISMRM), Barcelona (Spain).
- ISMRM 2022* **Moderator** of oral “power pitch” scientific session “*Motion correction*”, 10/05/2022, 2022 annual meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), London (UK).
- ISMRM 2021b* **Moderator** of oral scientific session “*Microstructure: Modelling Gray & White Matter Diffusion*”, 19/05/2021, 2021 virtual annual meeting of the ISMRM.
- ISMRM 2021a* **Facilitator** of poster session “*Diffusion Applications: Brain & Spine*”, 18/05/2021, 2021 virtual annual meeting of the ISMRM.

## PARTICIPATION IN EVALUATION PANELS

*Research Council  
of Finland 2025*

**Grant reviewer** for the Research Council of Finland, 2025 Call for Clinical Research (online evaluation).

*EPFL 2024*

**PhD defense** at the École Polytechnique Fédérale de Lausanne (EPFL), Lausanne (Switzerland). Thesis title: "*Lymph node microstructure imaging using diffusion MRI: From simulations to acquisitions*". Exam date: 08/10/2024 (in person in Lausanne). Role: external examiner. Degree: PhD. Department: Center for Biomedical Imaging ([CIBM](#)), EPFL. Thesis link [here](#).

## ORGANISATION OF SCIENTIFIC EVENTS

*ISMRM Iberian  
Chapter 2025*

**ISMRM Iberian Chapter:** 2025 annual meeting of the Iberian Chapter of the International Society for Magnetic Resonance in Medicine (ISMRM) (Barcelona, scheduled for 3-4/07/2025). **Organisers:** Marco Rius I (IBEC), Ortega Machuca MA (IBEC), Candiota AP (UAB), Julià-Sapé M (UAB), Muñoz Moreno E (IDIBAPS), Lope-Piedrafita S (UAB), Barba Vert I (UVic), Benito M (UCM), Grussu F (VHIO), Gómez Cabeza D (IBEC).

*MIS ISMRM 2021*

**Member Initiated Symposium** at ISMRM 2020: "[Looking Beyond Axons: Imaging the Immune System in White Matter](#)", 19/05/2021. **Organisers:** Cohen-Adad J, Grussu F, Kolind S.

*WMSG ISMRM  
2019*

**ISMRM White Matter Study Group Virtual meeting:** "[Myelin Imaging in the Spinal Cord at High Field](#)", 27/06/2019, joint meeting with the High-field Study Group. **Organiser:** Grussu F. **Chair:** Cohen-Adad J.

*MIS ISMRM 2019*

**Member Initiated Symposium** at ISMRM 2019: "[Completing the Circle: Moving Multi-Parametric Neuro MRI into Clinical Practice and Trials](#)", 15/05/2019. **Organisers:** Vrenken H, Cohen-Adad J, Grussu F.

*CDMRI 2018*

**MICCAI Workshop:** Computational Diffusion MRI (CDMRI) 2018 (Granada, Spain, 20/09/2018). **Organisers:** Bonet-Carne E (UCL), Grussu F (UCL), Ning L (Harvard), Sepehrband F (USC), Tax C (Cardiff University).

*MUSHAC  
Challenge 2018*

**MICCAI Challenge:** Multi-shell dMRI harmonisation and enhancement (MUSHAC, part of CDMRI 2018). **Organisers:** Bonet-Carne E (UCL), Grussu F (UCL), Ning L (Harvard), Sepehrband F (USC), Tax C (Cardiff University).

*CDMRI 2017*

**MICCAI Workshop:** Computational Diffusion MRI (CDMRI) 2017 (Quebec City, Canada, 10/09/2017). **Organisers:** Grussu F (UCL), Kaden E (UCL), Ning L (Harvard), Tax C (Cardiff University), Veraart J (NYU).

*Data  
Harmonisation  
Challenge 2017*

**MICCAI Challenge:** Diffusion MRI data harmonisation (part of CDMRI 2017). **Organisers:** Grussu F (UCL), Kaden E (UCL), Ning L (Harvard), Tax C (Cardiff University), Veraart J (NYU).

*Spinal Cord Grey  
Matter  
Segmentation  
Challenge 2016*

**Challenge:** Grey Matter Segmentation: What's there and What's next? (part of SC MRI Workshop 2016). **Organisers:** Cohen-Adad J, Prados F, Landman B, Wheeler-Kingshott C, Summers P, Dupont S, Yiannakas M, Smith S, Gergely D, DeLeener B, Grussu F.

## SCIENTIFIC PEER REVIEWING

*2016-present*

Reviewer for Bipolar Disorders; Functional Neurology; Frontiers; Human Brain Mapping; Journal of Magnetic Resonance Imaging; Journal of Neuroscience Methods; Magnetic Resonance in Medicine; NeuroImage; Medical Image Analysis; IEEE Transactions on Medical Imaging; npj Precision Oncology; NMR in Biomedicine; Scientific Data; 2019, 2021, 2022 ISMRM annual meetings; 2021 ISMRM Iberian Chapter post-grad meeting; 2021, 2025 Iberian Chapter annual meeting; 2019, 2020 MICCAI workshop on Computational Diffusion MRI.

## OFFICIAL STUDENT SUPERVISION

*PhD, VHIO and  
UB 2023-26*

**Project co-supervision:** “*Novel Magnetic Resonance Imaging biomarkers for precision medicine in oncology: integrating multi-omics and real-world data strategies*”. **Degree:** PhD programme in Biomedicine (research line in biomedical engineering), Universitat de Barcelona (UB; Barcelona, Spain). Project carried out at VHIO, Barcelona (Spain). **Supervised in:** 2023-2026 (ongoing).

*PhD, VHIO and  
UB 2022-26*

**Project co-supervision:** “*Histology-informed diffusion MRI simulations and artificial intelligence for cancer microstructure characterization*”. **Degree:** PhD programme in Biomedicine (research line in biomedical engineering), Universitat de Barcelona (UB; Barcelona, Spain). Project carried out at the Vall d’Hebron Institute of Oncology (VHIO), Barcelona (Spain). **Supervised in:** 2022-2026 (ongoing).

*PhD, VHIO and  
UB 2022-25*

**Project co-supervision:** “*Deep learning cancer vasculature with histology-informed diffusion and perfusion MRI*”. **Degree:** PhD programme in Biomedicine (research line in biomedical engineering), Universitat de Barcelona (UB; Barcelona, Spain). Project carried out at VHIO, Barcelona (Spain). **Supervised in:** 2022-2025 (ongoing).

*MEng, VHIO and  
TU Delft 2022/23*

**Project co-supervision:** “*Unraveling tumour microstructure through diffusion MRI using histology-powered artificial intelligence*”. **Degree:** Master’s in “Biomedical Engineering”, Delft University of Technology (TU Delft), (Delft, The Netherlands). Project carried out at VHIO, Barcelona (Spain). **Supervised in:** 09-2022/06-2023.

*MEng, VHIO and  
UI La Rioja  
2022/23*

**Project co-supervision:** “*Prediction of advanced biomarkers from clinical diffusion Magnetic Resonance Imaging*”. **Degree:** Master’s in “Artificial Intelligence”, Universidad Internacional de La Rioja (Logroño, Spain). Project carried out at VHIO, Barcelona (Spain). **Supervised in:** 2022/2023.

*MRes, UCL  
2018/19*

**Project co-supervision:** “*Improving the differential diagnosis between Neuromyelitis Optica Spectrum Disorder and Multiple Sclerosis using MRI*”. **Degree:** MRes in “Clinical Neuroscience”, Institute of Neurology, University College London (UCL, London, UK). **Supervised in:** 2018/2019.

*MSc, UCL  
2018/19*

**Project co-supervision:** “*Evaluation of quantitative MRI indices reproducibility across scanner upgrade*”. **Degree:** MSc in “Advanced neuroimaging”, Institute of Neurology, UCL (London, UK). **Supervised in:** 2018/2019

*MSc, UCL  
2017/18*

**Project co-supervision:** “*Investigation of multi-component T1 relaxation at 3 Tesla*”. **Degree:** MSc in “Advanced neuroimaging”, Institute of Neurology, UCL (London, UK). **Supervised in:** 2017/2018.

*MSc, UCL  
2015/16*

**Project co-supervision:** “*Evaluation of strategies for co-registration between quantitative and anatomical magnetic resonance images of the human spinal cord*”. **Degree:** MSc in “Advanced neuroimaging”, Institute of Neurology, UCL (London, UK). **Supervised in:** 2015/2016.

## TEACHING EXPERIENCE

*UCL Lecture*

**Lecture:** “*Image optimisation: SNR, CNR and sources of artifacts*”. **Degree:** MSc in “Advanced neuroimaging”, Institute of Neurology, UCL (London, UK). **Conveyed:** 2019/20, 2017/18, 2016/17, 2015/16.

*UCL Workshop*

**Workshop:** Hands-on with a **portable MRI scanner**. **Degree:** MSc in “Advanced neuroimaging”, Institute of Neurology, UCL (London, UK). **Conveyed:** 2017/18, 2016/17, 2015/16.

*UniPV Workshop*

**Workshop:** “*Model fitting for quantitative MRI*”. **Degree:** MEng in “Biomedical Engineering”, University of Pavia (Pavia, Italy). **Conveyed:** 2016/17.

*UCL Lecture*

**Lecture:** “*Magnetic resonance image formation*”. **Degree:** MSc in “Advanced

biomedical imaging”, Centre for Advanced Biomedical Imaging, UCL (London, UK). **Conveyed:** 2015/16.

## OPEN SCIENCE

**Code released through GitHub** (<http://fragrussu.github.io> and <http://github.com/radiomicsgroup>)

- GitHub 2024c* **Histo- $\mu$ Sim:** histology-informed cancer diffusion MRI ([link](#)).
- GitHub 2024b* **SpinFlowSim:** diffusion MRI simulator in vascular networks ([link](#)).
- GitHub 2024a* **BodyMRITools:** python code for body diffusion MRI processing ([link](#)).
- GitHub 2022* **MChepato:** Code and synthetic data for Grussu et al, MRM 2022 ([link](#)). Available in Zenodo as record 6645258, doi: [10.5281/zenodo.6645258](https://doi.org/10.5281/zenodo.6645258).
- GitHub 2020b* **qMRI-Net:** MRI signal model fitting based on artificial intelligence ([link](#)).
- GitHub 2020a* **SARDU-Net:** data-driven, model-free quantitative MRI protocol design ([link](#)).
- GitHub 2019b* **MyRelax:** tools for myelin and relaxation MRI analyses ([link](#) to the latest version). Version 1.0.0 available in Zenodo as record 4561898, doi: [10.5281/zenodo.4561898](https://doi.org/10.5281/zenodo.4561898).
- GitHub 2019a* **MRITools:** tools for handling and managing research MRI scans ([link](#)).
- GitHub 2016* **StructureTensorToolbox:** tools for analysis of 2D histological images ([link](#)).
- Data sets released through Zenodo**
- Zenodo 2024b* “*Histology-informed microstructural diffusion simulations for MRI cancer characterisation (Histo- $\mu$ Sim): ex vivo mouse data*”. Grussu F, Grigoriou A, Macarro C and Perez-Lopez R. Data set. Zenodo record 14559356, 2024, doi: [10.5281/zenodo.14559356](https://doi.org/10.5281/zenodo.14559356).
- Zenodo 2024a* “*Histology-informed microstructural diffusion simulations for MRI cancer characterisation (Histo- $\mu$ Sim): histology substrates*”. Grigoriou A, Macarro C, Perez-Lopez R and Grussu F. Data set. Zenodo record 14559104, 2024, doi: [10.5281/zenodo.14559104](https://doi.org/10.5281/zenodo.14559104).

## DISSEMINATION TO THE WIDER PUBLIC

- 2024b* Lab demonstration: “*Uso de la inteligencia artificial en la investigación contra el cáncer*” (“*Using artificial intelligence in cancer research*”) at the 2024 European Researchers’ Night (27/09/2024), CosmoCaixa, Barcelona (Spain).
- 2024a* Video: “*Resonancia magnética para combatir el cáncer*” (“*Magnetic Resonance Imaging to fight cancer*”), released through the YouTube channel of the Vall d’Hebron Institute of Oncology (Barcelona, Spain) ([link](#), video in Spanish).
- 2022b* Science fair: “*Demostración de análisis avanzado de imágenes por resonancia magnética y datos co-localizados de microscopía*” (“*Demonstration of advanced analysis of MR images and co-localised microscopy*”) at the 2022 European Researchers’ Night (30/09/2022), CosmoCaixa, Barcelona (Spain).
- 2022a* “*Innovating Magnetic Resonance Imaging to fight diseases*”. Università della Terza Età (UniTre), Mòguru, Italy (12/04/2021). Talk given to a general audience in Sardinian language.
- 2017* “*Why to get vaccinated and avoid misinformation: the scientific method in modern medicine*”. Event for a general audience in Italian and Sardinian, Mòguru, Italy (17/08/2017). Organisers: Grussu F, Tur C, Coccollone E, Broccia S.

- 2015 Participation at *MS Frontiers 2015* (29-30/06/2015), organised by the UK Multiple Sclerosis Society and bringing together researchers and Multiple Sclerosis patients.
- 2013 UCL stall at *Science Uncovered*, 2013 European Researcher's Night (28/09/2013), London Science Museum.

#### CONFERENCE & WORKSHOP PROCEEDINGS: FIRST AUTHORSHIP

- ESMRMB 2024* "Histological interpretation of Susceptibility-Perturbation MRI in human tumours of the liver". Grussu F et al. European Society for Magnetic Resonance in Medicine and Biology (ESMRMB) 2024 (traditional poster presentation).
- ISMRM 2024b* "Histology-informed biophysical diffusion MRI model selection for enhanced liver cancer immunotherapy assessment". Grussu F et al. International Society for Magnetic Resonance in Medicine (ISMRM) 2024 (**oral presentation**).
- ISMRM 2024a* "Two-axon population (TAP) modelling for large axon diffusion imaging in the peripheral nervous system". Grussu F et al. International Society for Magnetic Resonance in Medicine (ISMRM) 2024 (**oral presentation**).
- ISMRM Iberian 2023* "Extra-cellular liver diffusion modelling at high b-value: a preclinical MRI-histology study". Grussu F et al. Iberian Chapter of the ISMRM 2023 (**oral presentation**).
- ISMRM 2022b* "Histological correlates of DR-HIGADOS microstructural metrics in the mouse and human liver". Grussu F et al. International Society for Magnetic Resonance in Medicine (ISMRM) 2022 (power-pitch presentation).
- ISMRM 2022a* "Inter-scanner reproducibility and variability assessment of advanced liver diffusion MRI metrics". Grussu F et al. ISMRM 2022 (d-poster presentation).
- ISMRM 2021b* "DR-HIGADOS: a new diffusion-relaxation framework for clinically feasible microstructural imaging of the liver". Grussu F et al. ISMRM 2021 (**oral presentation, Magna cum Laude award**).
- ISMRM 2021a* "Investigating the relationship between diffusion MRI signal cumulants and hepatocyte microstructure at fixed diffusion time". Grussu F et al. International Society for Magnetic Resonance in Medicine (ISMRM) 2021 (**d-poster presentation**).
- ISMRM 2020* "SARDU-Net: a new method for model-free, data-driven experiment design in quantitative MRI". Grussu F et al. ISMRM 2020 (**power-pitch presentation, Magna cum Laude award**).
- ISMRM 2019* "Clinically viable g-ratio imaging with unified readout at 3T: evaluation and comparison". Grussu F et al. ISMRM 2019 (e-poster presentation).
- ISMRM 2018b* "Magnitude versus complex-valued images for spinal cord diffusion MRI: which one is best?". Grussu F et al. ISMRM 2018 (**oral presentation, Magna cum Laude award**).
- ISMRM 2018a* "A unified signal readout improves denoising of multi-modal spinal cord MRI". Grussu F et al. ISMRM 2018 (poster presentation).
- ISMRM 2017b* "Origin of the time dependence of the diffusion-weighted signal in spinal cord white matter". Grussu F et al. ISMRM 2017 (**oral presentation**).
- ISMRM 2017a* "A unified signal readout for reproducible multimodal characterisation of brain microstructure". Grussu F et al. ISMRM 2017 (e-poster presentation, **Magna cum Laude award**, finalist at the Diffusion Study Group competition).
- Brain School 2017* "Whole-brain macromolecular tissue volume mapping: A comparison of imaging readouts at 3 Tesla". Grussu F et al. School of Brain Cells and Circuits "Camillo Golgi". Frontiers ISBN 978-288945-584-3 (**poster presentation**).

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| <i>ISMRM Scientific Workshop 2016</i>                           | <i>"Optimal histological quantification of neurite orientation dispersion for the validation of diffusion MRI". ISMRM Scientific workshop "Breaking the barriers of diffusion MRI" (poster presentation + Power Pitch).</i>   |
| <i>ISMRM 2016</i>   | <i>"Axon diameter distribution influences diffusion-derived axonal density estimation in the human spinal cord: in silico and in vivo evidence". Grussu F et al. ISMRM 2016 (poster presentation, finalist at the Diffusion Study Group competition).</i>   |
| <i>ECTRIMS 2015</i>   | <i>"Quantitative histological validation of NODDI MRI indices of neurite morphology in multiple sclerosis spinal cord". Grussu F et al. European Committee for Research and Treatment of Multiple Sclerosis (ECTRIMS) 2015 (poster presentation, short-listed for poster prize competition).</i>                    |
| <i>MS Frontiers 2015</i>  | <i>"Histological correlates of NODDI in the multiple sclerosis spinal cord". Grussu F et al. MS Frontiers 2015, annual scientific meeting of the UK Multiple Sclerosis Society (<b>oral and poster presentation</b>).</i>   |
| <i>ISMRM 2015b</i>  | <i>"Quantitative histological correlates of NODDI orientation dispersion estimates in the human spinal cord". Grussu F et al. ISMRM 2015 (<b>oral presentation, Magna cum Laude award</b>).</i>   |
| <i>ISMRM 2015a</i>  | <i>"Histological metrics confirm microstructural characteristics of NODDI indices in multiple sclerosis spinal cord". Grussu F et al. ISMRM 2015 (<b>oral presentation, Magna cum Laude award</b>).</i>   |
| <i>British Chapter of the ISMRM 2014</i>                        | <i>"Characterisation of single-shell NODDI fitting in spinal cord grey and white matter". Grussu F et al. British Chapter of the ISMRM 2014 (poster presentation).</i>  |
| <i>ISMRM 2014b</i>  | <i>"Neurite orientation dispersion and density imaging of the cervical cord in vivo". Grussu F et al. ISMRM 2014 (poster presentation).</i>   |
| <i>ISMRM 2014a</i>  | <i>"Single-shell diffusion MRI NODDI with in vivo cervical cord data". Grussu F et al. ISMRM 2014 (poster presentation).</i>  |
| <i>ISMRM Workshop 2013</i>                                      | <i>"In vivo estimation of neuronal orientation dispersion and density of the human spinal cord". ISMRM Scientific workshop "Multiple sclerosis as a whole-brain disease" (<b>oral presentation</b>).</i>  |
| <i>ISMRM 2013</i>   | <i>"Towards spinal cord microstructure mapping with the neurite orientation dispersion and density imaging". Grussu F et al. ISMRM 2013 (poster presentation, finalist at the White Matter Study Group poster competition).</i>   |
| <b>CONFERENCE &amp; WORKSHOP PROCEEDINGS: SENIOR AUTHORSHIP</b> |   |
| <i>ISMRM Iberian Chapter 2025</i>                               | <i>"Simplicity is a virtue: histology-informed model comparison selects simple diffusion representations in a colorectal cancer metastasis specimen". Grigoriou A, ..., and Grussu F. 2025 ISMRM Iberian Chapter annual meeting, p.49 (poster presentation). <b>2nd prize for the best poster presentation</b>.</i> |
| <i>ISMRM Workshop 2025b</i>                                     | <i>"Which Microvascular Properties Can We Probe in Clinical Settings with Diffusion MRI?". Voronova A, ..., and Grussu F. 2025 ISMRM Workshop on 40 Years of Diffusion: Past, Present and Future Perspectives (oral presentation).</i>  |
| <i>ISMRM Workshop 2025b</i>                                     | <i>"Histology-Informed Microstructural Diffusion Simulations (Histo-<math>\mu</math>Sim) for Enhanced Diffusion MRI Parameter Estimation in Cancer". Grigoriou A, ..., and Grussu F. 2025 ISMRM Workshop on 40 Years of Diffusion: Past, Present and Future Perspectives (power-pitch presentation), p. 202.</i>    |
| <i>ESMRMB 2024b</i>   | <i>"Biologically-realistic blood flow simulations reveal complex features of vascular IVIM signals". Voronova A, ..., and Grussu F. ESMRMB 2024 (traditional poster presentation).</i>  |
| <i>ESMRMB 2024a</i>   | <i>"Histology-informed cell size distribution mapping with diffusion MRI". Grigoriou A, ..., and Grussu F. ESMRMB 2024 (traditional poster presentation).</i>   |

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| <i>ISMRM 2024b</i>   | <i>"FlowSim: a blood flow simulator for histology-informed diffusion MRI micro-vasculature mapping in cancer". Voronova A, ..., and Grussu F. ISMRM 2024 (power-pitch presentation, <b>Summa cum Laude</b> award, <b>Diffusion Study Group prize, best application (poster category)</b>).</i>  |
| <i>ISMRM 2024a</i>   | <i>"A Monte Carlo simulation framework for histology-informed diffusion MRI parameter estimation in cancer". Grigoriou A, ..., and Grussu F. ISMRM 2024 (power-pitch presentation, <b>Magna cum Laude</b> award).</i>   |
| <i>ISMRM Scientific Workshop 2022</i>                                | <i>"A systematic comparison of machine learning approaches for diffusion-relaxation MRI protocol enhancement in advanced solid tumours". Macarri C, ..., and Grussu F. ISMRM Workshop on Diffusion MRI From Research to Clinic 2022 (poster presentation).</i>  |
| <i>ISMRM 2019</i>  | <i>"Sensitivity of NODDI and two-compartment SMT parameter maps in multiple sclerosis". Johnson D, ..., and Grussu F. ISMRM 2019 (e-poster presentation).</i>   |
| <b>CONFERENCE &amp; WORKSHOP PROCEEDINGS: SELECTED CO-AUTHORSHIP</b> |   |
| <i>ISMRM 2023</i>  | <i>"Decomposition of clinical ADC into intracellular and extracellular-extravascular contributions in prostate cancer using histology". Garcia-Ruiz A et al. ISMRM 2023 (oral presentation).</i>  |
| <i>ENA Symposium 2022</i>  | <i>"Non-invasive biomarkers for response and survival prediction in patients with advanced solid tumours treated with immune checkpoint inhibitors (ICIs)". Bernatowicz K et al. European Journal of Cancer 174S1 (2022) S3–S128, doi: <a href="https://doi.org/10.1016/S0959-8049(22)00988-1">10.1016/S0959-8049(22)00988-1</a> (EORTC-NCI-AACR (ENA) Symposium, 2022 October 26-28, Barcelona, Spain; poster presentation).</i> |
| <i>ISMRM Workshop 2022</i>   | <i>"Decoding liver intra-tumour heterogeneity with co-localized CT and multi-parametric MRI". Prior Palomares O, Grussu F, et al. ISMRM Workshop on Diffusion MRI From Research to Clinic 2022 (oral presentation).</i>   |
| <i>ISMRM 2022b</i>   | <i>"Deep-learning-informed parameter estimation improves reliability of spinal cord diffusion MRI". Gong T et al. ISMRM 2022 (oral presentation).</i>   |
| <i>ISMRM 2022a</i>   | <i>"Deep learning voxelwise classification of primary central nervous system lymphoma using DSC-PWI normalized time-intensity curves". Garcia-Ruiz A et al. ISMRM 2022 (d-poster presentation).</i>   |
| <i>ISMRM 2021</i>  | <i>"Associations between cervical cord sodium concentration, neuronal density and macromolecular tissue volume in spinal cord injury". Solanky B et al. ISMRM 2021 (oral presentation).</i>   |
| <i>ISMRM 2020</i>  | <i>"Acquiring and predicting Multi-dimensional Diffusion (MUDI) data: an open challenge". Pizzolato M et al. ISMRM 2020 (oral presentation).</i>  |
| <i>ISMRM 2020b</i>   | <i>"New potential MRI markers of glial scarring and tissue damage in multiple sclerosis spinal cord pathology using diffusion MRI". Palombo M et al. ISMRM 2020 (power-pitch presentation).</i>   |
| <i>ISMRM 2020a</i>   | <i>"SENSE reconstruction with simultaneous 2D phase correction and channel-wise noise removal (SPECTRE)". Powell E et al. ISMRM 2020 (d-poster presentation).</i>   |
| <i>ISMRM 2020</i>  | <i>"Quantitative MRI of the spinal cord: reproducibility and normative values across 40 sites". Alonso-Ortiz E L et al. ISMRM 2020 (oral presentation).</i>   |
| <i>ISMRM 2019b</i>   | <i>"Cross-scanner and cross-protocol harmonisation of multi-shell diffusion MRI data: open challenge and evaluation results". Ning L et al. ISMRM 2019 (oral presentation).</i>   |
| <i>ISMRM 2019a</i>   | <i>"Bound Pool Fraction mapping via steady-state MT saturation using single-shot EPI". Battiston M et al. ISMRM 2019 (oral presentation).</i>   |

- ISMRM 2018b* “Cross-vendor and cross-protocol harmonisation of diffusion MRI data: a comparative study”. Tax C et al. ISMRM 2018 (oral presentation).
- ISMRM 2018a* “Consensus acquisition protocol for quantitative MRI of the cervical spinal cord at 3T”. Alley S et al. ISMRM 2018 (oral presentation).
- ECTRIMS 2017c* “Application of Neurite Orientation Dispersion and Density Imaging (NODDI) in clinically isolated syndrome (CIS)”. Collorone S et al. ECTRIMS 2017 (poster presentation).
- ISMRM 2017b* “Boundary shift integral to compute brain and cervical spinal cord longitudinal atrophy on the same 3D T1 brain images in multiple sclerosis”. Prados F et al. ISMRM 2017 (oral presentation).
- ISMRM 2017a* “Impact of acquisition strategies and spherical deconvolution algorithms on brain connectivity mapping in early multiple sclerosis”. Tur C et al. ISMRM 2017 (oral presentation).
- ECTRIMS 2016b* “Computing spinal cord atrophy using the boundary shift integral: a more powerful outcome measure for clinical trials?”. Prados F et al. ECTRIMS 2016 (poster presentation).
- ECTRIMS 2016a* “Neurite orientation dispersion and density imaging (NODDI) reflects early microstructural brain tissue changes in clinically isolated syndrome (CIS)”. Collorone S et al. ECTRIMS 2016 (poster presentation).
- ISMRM 2016b* “Reduced field-of-view diffusion-weighted imaging of the lumbosacral enlargement: a pilot in vivo study of the healthy spinal cord using a clinical 3T MR system”. Yiannakas M et al. ISMRM 2016 (e-poster presentation).
- ISMRM 2016a* “Atrophy computation in the spinal cord using the boundary shift integral”. Prados F et al. ISMRM 2016 (oral presentation).
- AAN 2016b* “No Differences in spinal cord white and grey matter diffusion abnormalities between neuromyelitis optica spectrum disorder and multiple sclerosis”. Cortese R et al. American Accademy of Neurology (AAN) 2016 (poster presentation).
- AAN 2016a* “Neurite orientation dispersion and density imaging (NODDI) at the onset of clinically isolated syndrome (CIS): new insights in the early microstructural brain tissue changes”. Collorone S et al. AAN 2016 (dual presentation).
- ISMRM 2015* “Combined sodium-NODDI: towards quantitative in vivo intracellular and intraneurite sodium measures at 3T”. Solanky B et al. ISMRM 2015 (e-poster presentation).
- ISMRM 2014* “An investigation of brain neurite density and dispersion in multiple sclerosis using single shell diffusion imaging”. Magnollay L et al. ISMRM 2014 (poster presentation).
- ECTRIMS 2013* “Application of neurite orientation dispersion and density imaging (NODDI) to relapsing remitting multiple sclerosis (RRMS)”. Magnollay L et al. ECTRIMS 2013 (poster presentation).
- ECTRIMS 2013* “Neurite orientation dispersion and density imaging in the multiple sclerosis spinal cord”. Kearney H et al. ECTRIMS 2013 (e-poster presentation).
- NCM 2012* “Algorithms for shaping the dynamics of a bidirectional neural interface”. Semprini M et al. Society for the Neural Control of Movement (NCM) 2012 (poster presentation).