

Rémi Gau

Languages: French, English, German (basics)

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 [All my links](#)

CURRENT POSITION

Post-doctoral fellow in the [Crossmodal perception and plasticity laboratory](#) at the université catholique de Louvain la Neuve (Belgium)

ACADEMIC QUALIFICATIONS

- **2012-2019:** **Post-doctoral fellow**
Laboratories:
Computational Cognitive Neuroimaging Laboratory, School of psychology, University of Birmingham, UK
and *Max Planck Institute for biological cybernetics*, Tübingen, Germany
Supervisor: Pr. Dr. MD. Uta Noppeney
- **2006-2010:** **PhD in neuroscience** Defended in September 2010
University Pierre et Marie Curie, Paris, France
Doctoral School « Cerveau, Cognition, Comportement »
first class honours
Thesis title: Serotonergic neurons of the lateral paragigantocellular nucleus: roles in pain modulation and baroreflex inhibition
Laboratory: Psychiatry and Neurosciences Center
Supervisor: Dr. MD. Jean-François Bernard

Graduate qualifications

- **2005-2006:** **Master of Integrative Biology and Physiology: Neurosciences**
University Pierre et Marie Curie, Paris, France
- **2004-2005:** **Master of Neuropsychology**
University Paul Sabatier, Toulouse, France
- **2003-2004:** **Master of Cellular Biology and Animal Physiology**
McGill university, Montréal, Canada, through the CREPUQ exchange program with the University of Montpellier II, France

SCIENTIFIC CONTRIBUTIONS

peer reviewed papers

- Niso, G., Botvinik-Nezer, R., Appelhoff, S., et al.; Open and reproducible neuroimaging: from

study inception to publication., *Neuroimage*, 2022

doi:[10.1016/j.neuroimage.2022.119623](https://doi.org/10.1016/j.neuroimage.2022.119623)

- Clement P., Castellaro M, Okell T. W., Thomas D. L. , et al.; ASL-BIDS, the Brain Imaging Data Structure Extension for Arterial Spin Labeling., *Scientific data*, 2022

doi:[10.1038/s41597-022-01615-9](https://doi.org/10.1038/s41597-022-01615-9)

- Norgaard M., Matheson G. J., Hansen H. D., Thomas A., et al.; PET-BIDS, an extension to the brain imaging data structure for positron emission tomography, *Scientific data*, 2022

doi:[10.1038/s41597-022-01164-1](https://doi.org/10.1038/s41597-022-01164-1)

- Levitis E, Gould van Praag C D, **Gau R**, Heunis S, et al.; Centering inclusivity in the design of online conferences - An OHBM-Open Science perspective, *GigaScience*, 2021

doi:[10.1093/gigascience/giab051](https://doi.org/10.1093/gigascience/giab051)

- **Gau R**, Noble S, Heuer K, Bottenhorn K L, Bilgin I P, Yang Y, et al; [Brainhack: developing a culture of open, inclusive, community-driven neuroscience](#), *Neuron*, 2021

doi:[10.31234/osf.io/rytjq](https://doi.org/10.31234/osf.io/rytjq) ;  

- Botvinik-Nezer R, et al; [Variability in the analysis of a single neuroimaging dataset by many teams](#), *Nature*, 2020

doi:[10.1038/s41586-020-2314-9](https://doi.org/10.1038/s41586-020-2314-9) ; Code and results contributed to the study:  

- **Gau R**, Bazin PL, Trampel R, Turner R, Noppeney U; [Resolving multisensory and attentional influences across cortical depth in sensory cortices](#), *eLife*, 2018

doi:[10.7554/eLife.46856](https://doi.org/10.7554/eLife.46856) ;  

- **Gau R**, Noppeney, U; [How prior expectations shape multisensory perception](#), *Neuroimage*, 2016

doi:[10.1016/j.neuroimage.2015.09.045](https://doi.org/10.1016/j.neuroimage.2015.09.045) ;  

- **Gau R**, Sevoz-Couche C, Hamon M, Bernard JF; [Noxious stimulation excites serotonergic neurons: a comparison between the lateral paragigantocellular reticular and the raphe magnus nuclei](#), *Pain*, 2013

doi:[10.1016/j.pain.2012.09.012](https://doi.org/10.1016/j.pain.2012.09.012)

- **Gau R**, Sevoz-Couche C, Laguzzi R, Hamon M, Bernard JF; [Inhibition of Baroreflex by Nociception: A Key Role for Lateral Paragigantocellular Serotonergic Cells](#), *Pain*, 2009

doi:[10.1016/j.pain.2009.09.018](https://doi.org/10.1016/j.pain.2009.09.018)

- Bernard JF, Netzer F, **Gau R**, Hamon M, Laguzzi R, Sevoz-Couche C; [Critical role of B3 serotonergic cells in baroreflex inhibition during the defense reaction triggered by dorsal periaqueductal gray stimulation](#), *Journal of comparative anatomy*, 2008

doi:[10.1002/cne.21532](https://doi.org/10.1002/cne.21532)

preprint

- Kovacs M, Jaquiere M, Algermissen J, Arriaga P, **Gau R** et al.; Lab manuals for efficient and high quality science in a happy and safe work environment, *metaarxiv*, 2022;

doi:[10.31222/osf.io/bzcxg](https://doi.org/10.31222/osf.io/bzcxg)

- Govaart G. H. et al.; EEG ERP Preregistration Template, *metaarxiv*, 2022;

doi:[10.31222/osf.io/4nvpt](https://doi.org/10.31222/osf.io/4nvpt)

- Appelhoff S, Bates JF, Ghosh S et al.; BIDS and the NeuroImaging Data Model (NIDM), *F1000Research*, 2019;







doi:[10.7490/f1000research.1117650.1](https://doi.org/10.7490/f1000research.1117650.1)

talks

Conference presentations

- [CPP BIDS: a lightweight toolbox for behavioral experiments to help you with good data management practices](#); Young researchers' day of the institute of Neuroscience of the université catholique de Louvain, Virtual, 18 November 2020
- [Symposium on the Neuroimaging Analysis Replication and Prediction Study: From the eyes of an analysis team](#); Annual Meeting of the Organization for Human Brain Mapping, Virtual, June 2020
- [Laminar profiles dissociate attentional and crossmodal influences in sensory cortices](#); Brain in Depth, Magdeburg (Germany), 31st May 2018
- [Implication du groupe sérotoninergique B3 dans le contrôle des circuits de la douleur et des réactions neurovégétatives associées](#); 10th congress of the French society for the study and treatment of pain, Marseille (France), 18th November 2010

Invited talks

- [BIDS: a cookbook](#); ACCS and OHBM Webinar and Workshop Series, Virtual, 12 October 2021, 
- [Open science: what is it? why do it?](#); Dutch Neuroscience meeting 2021, Virtual, 10 June 2021, 
- [New Trends in Open Science: Code and Data Sharing](#); BAPS 2021 - Junior day, Virtual, 27 May 2021, 
- [eCobidas: because methods writing is too important \(and boring\) to let humans do it!](#); Repronim webinars, Virtual, 8 January 2021, 
- [Things I wish I knew when I started coding](#); Brainhack Ankara, Virtual, 12 December 2020 
- [The Brain Imaging Data Structure \(BIDS\) as an example of data organization](#); Louvain bionics, Université catholique de Louvain, Belgium Virtual, 09 October 2020 

Internal talks

- [More brain droppings on the replication crisis in psychology](#); talk given at a brown bag meeting at the department of psychology of the université catholique de Louvain la Neuve; 11th April 2019
- [Brain droppings on the replication crisis in psychology](#); talk given at the post-graduate seminar of the School of Psychology at the University of Birmingham (UK); 24th November 2016

open-science

Contributions to Open Source Scientific Projects

- **Brain Imaging Data Structure**: organizing neuroimaging data and metadata to facilitate analysis and sharing.

Role Member of the team of maintainers of the specification, starter-kit, validator.

- Code: 

- **bidspm**: high-level functions to create MRI analysis pipeline of BIDS datasets using SPM

Role: Lead developer and maintainer

- Code: 

- **bids-matlab**: a Matlab and Octave toolbox to work with BIDS datasets.

Role: Lead developer and maintainer

- Code: 

- **eCobidas**: a webapp to facilitate transparent accurate methods reporting in neuroimaging

Role: Lead developer and maintainer

- Code:  • doi:[0.17605/osf.io/anvqy](https://doi.org/10.17605/osf.io/anvqy) • Prototype: 

Hackathon projects

- **eCobidas**:

- Brainhack Global Marseille 2021 (virtual) 
- Brainhack Global Donostia 2021 (virtual) 
- OpenMR Benelux 2020 (Rome, Nijmegen) 
- OHBM 2019 hackathon (Rome, Italy) 

- **pre-registration template for MRI and M/EEG research**:

- SIPS 2019 (Rotterdam, Netherlands)

posters

• **Gau R**, Abraham SA, Gould van Praag C, Sjoerds Z, Wiebels K, Moreau D, Ghosh S, Nichols TE; [eCOBIDAS: a webapp checklist to improve neuroimaging methods and results reporting](#), Annual Meeting of the Organization for Human Brain Mapping, Virtual, 2020;

• **Gau R**, Trampel R, Bazin PL, Turner R, Noppeney U; Layer-specific attentional modulation and multisensory interactions in sensory cortices, Annual Meeting of the Organization for Human Brain Mapping, Geneva (Switzerland), 2016

doi:[10.13140/RG.2.2.32219.57124](https://doi.org/10.13140/RG.2.2.32219.57124)

• **Gau R**, Trampel R, Bazin PL, Turner R, Noppeney U; Effect of sensory modality and attention on layer-specific activations in sensory cortices, Annual Meeting of the Organization for Human Brain Mapping, Hamburg (Germany), 2014

doi:[10.13140/RG.2.2.18797.79846](https://doi.org/10.13140/RG.2.2.18797.79846)

• **Gau R**, Noppeney U; The left prefrontal cortex controls information integration by combining bottom-up inputs and top-down predictions, Annual meeting of the Society for neurosciences, San Diego, (California, USA), 2013

doi:[10.13140/RG.2.2.12086.91207](https://doi.org/10.13140/RG.2.2.12086.91207)

- Bernard JF, Sevoz-Couche C, Hamon M, **Gau R**; Responses of lateral paragigantocellular and

raphe magnus serotonergic neurons to noxious stimuli: a comparative reappraisal using juxtacellular recording, 13th world congress on pain; International association for the study of pain; Montréal (Québec, Canada), 2010

- Bernard JF, Sevoz-Couche C, Hamon M, **Gau R**; [Involvement of lateral paragigantocellular reticular serotonergic and non-serotonergic neurons in nociceptive processes](#), Annual meeting of the Society for neurosciences, Chicago, (Illinois, USA), 2009
- **Gau R**, Sevoz-Couche C, Hamon M, Laguzzi R, Bernard JF; [Inhibition of cardiac baroreflex by intense noxious stimuli: a serotonergic mechanism involving the lateral paragigantocellular reticular nuclei](#); Annual meeting of the Society for neurosciences, Washington (D.C., USA), 2008
- Bernard JF, Sevoz-Couche C, Hamon M, Laguzzi R, **Gau R**; [Critical role of the B3 group in the baroreflex inhibition evoked by thermal noxious stimulation in the rat](#), Annual meeting of the Society for neurosciences, San Diego (California, USA), 2007
- Bernard JF, Netzer F, **Gau R**, Hamon M, Laguzzi R, Sevoz-Couche C; Serotonergic neurons of B3 group: critical role in baroreflex inhibition during the defense reaction in the rat; Annual meeting of the Society for neurosciences, Atlanta (Georgia, USA), 2006

PROFESSIONAL ACTIVITIES

Organizing

- **Brainhack global 2021:** - *Virtual-Hybrid* - Nov–Dec 2021

Member of the coordination team team



- **openMR benelux 2021:** - *Virtual* - 8–14 Jul 2020

Member of the organising team



- **OHBM 2020 hackathon:** - *Virtual* - 16-18 June 2020

Hackathon co-chair with Liza Levitis



- **openMR benelux 2020:** - *Donders Insitute, Nijmegen, Netherlands* - 21-23 January 2020

Member of the organising team



Peer review

Journals

Journal of Experimental Neuroscience, Plos One, European Journal of Neuroscience, Frontiers in Neuroinformatics, Journal of Neuroscience Research

Conferences

Proceedings of the Annual Conference of the Cognitive Science Society

Internal

- 2021-2022 Data ambassador of the institute of psychology of the Université catholique de Louvain
- 2017 Co-organizer of the EiF Journal Club on methodology and replicability in psychology at the University of Birmingham (UK)

Scientific Societies


- **Organization for Human Brain Mapping:**

2020 [Best Practices Committee](#)





2019-2020 [Open Science Special Interest Group](#) 

- **International Neuroinformatics Coordination Facility:**
- **Society for the improvement of psychological science:**
- **Society for Neuroscience:**

Outreach

- [Parapsychologie et crise de la réplication](#); Presentation given for the Skeptics in the Pub of Brussels (Belgium); 15th February 2020 
- 2019-present: active member of the Comité belge pour l'analyse critique des parasciences
- [Our brain, our senses, and us](#); Interactive presentation given at the children section of the Skeptics in the Pub of Gravesend (UK); 20th October 2015

TEACHING

- **November 2019:** Co-organizer and instructor at the first neuroimaging workshop at the University Catholique de Louvain of (Belgium)  
- **June 2019:** Mini-lab leader for the workshop *Empirical Methods in Cognitive Linguistics 8* at the University of Tartu (Estonia); 
- **2013 to 2016:** Teaching assistant for the *Advanced Brain Imaging* masters course at the University of Birmingham (UK) 

Supervisor: Noppeney, U; Email: u.noppeney@bham.ac.uk

- **2009:** Teaching assistant for the *Human Evolution* class of the preparatory program to paramedical training at the University Pierre et Marie Curie (Paris, France)

Supervisors: Aurengo, A & Darribere, T; Tel: (+33) 1 40 77 95 77

- **2005:** Teaching assistant for the *Psychophysiology* undergraduate class of the psychology program of the University Mirail-Toulouse II (France)

Supervisor: Bret Dibat JL; Email: bret@diba@univ-tlse2.fr

RESEARCH AND TECHNICAL SKILLS

- **Human neuroimaging:** design, implementation and analysis of structural and functional

MRI studies, fMRI design efficiency optimization, preprocessing, mass univariate and multivariate pattern analysis, high-field structural and functional MRI analyses

- **Cognitive neuroscience:** design, implementation and analysis of psychophysics and eyetracking studies of multi-sensory integration

- **Information technology:**

Program	Area	Knowledge
Matlab	Programming	Excellent
SPM	Neuroimaging analysis	Excellent
Freesurfer	Neuroimaging analysis	Excellent
CBS tools	High-field neuroimaging analysis	Excellent
LIBSVM	Multivariate pattern analysis	Excellent
PsychToolBox	Stimulus presentation	Excellent
Presentation	Stimulus presentation	Excellent
Git/GitHub	Version control	Excellent
Bash scripting	Programming	Good
cvMANOVA	Multivariate pattern analysis	Good
Palamedes	Psychophysics data analysis	Good
Spike 2	Physiological data recordings	Good
SPSS	Statistical analysis	Good
L ^A T _E X	Document production	Good
R	Programming	Basic
C/C++	Programming	Basic
FSL	Neuroimaging analysis	Basic
Pronto	Multivariate pattern analysis	Basic
TDT	Multivariate pattern analysis	Basic

- **Functional neuroanatomy:** direct online physiological parameters recording and analysis, use of neuroanatomical tracers (Phaseolus, TMR, fluorogold), functional c-fos expression experiments, stereotaxic local pharmacological neuroinactivation.

- **Electrophysiology:** *In vivo* extracellular recording combined to juxtacellular labeling in halothane anesthetized rats, LTP protocols and associated pharmacological modulation on rat brain slices using intracellular recording in current clamp or extracellular recording with a multi-electrodes array.

- **Microscopy & histology:** Total animal fixation with formalin & brain extraction, general histological techniques (Cresyl violet, thionin), double immunohistochemical and immunofluorescent labeling, epifluorescent transmission and confocal microscope images acquisition and processing.

GRANTS

- **2009-2010:** Award from the French society for the study and treatment of pain
- **2006-2009:** Scholarship from the French ministry of research and technology