

ELSA FOURAGNAN

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ACADEMIC CAREER AND EMPLOYMENT

University of Plymouth, UK	Professor in Neuroscience	2024 - present
	Director of BRIC	2025 - present
	Associate Professor in Neuroscience	2022 - 2024
	Lecturer in Neuroscience	2018 - 2022
University of Oxford, UK	Postdoctoral Research Fellow <i>Advisor: Prof. Matthew Rushworth</i>	2016 - 2018
University of Glasgow, UK	Postdoctoral Research Fellow <i>Advisor: Prof. Marios Philiastides</i>	2012 - 2016
QUASAR, DARPA research San Diego, USA	Biomedical Engineer	2008 - 2009

EDUCATION

University of Trento, Italy	PhD in Computational Neuroscience	2009 - 2012
University of Southern California, Los Angeles, USA	<i>Advisors: Prof. Giorgio Coricelli, Prof. Paolo Avesani</i>	VIVA 2013
University of Bordeaux, France	MEng (distinction) Biomedical Engineering	2005 - 2008

GRANTS, FELLOWSHIPS AND AWARDS

RESEARCH GRANTS

Current

- Advanced Research Innovation Agency ARIA (£6,734,605) 2025-2028
Co-I "Next generation brain-machine interface for whole brain Input/Output with ultrasound"
- Neuromod+ Multi-investors feasibility award (£79,837) 2024-2025
PI "Leveraging Multi-site Transcranial Ultrasound Stimulation of the Dorsal Anterior Cingulate Cortex for Endogenous Pain Modulation"
- Bial Foundation (£13,843) 2024-2026
Co-I "Investigating the role of the subthalamic nucleus in action inhibition with focused ultrasound stimulation"
- BRIC Pump Priming (~£5,000) 2024-2025
Co-I "Apathy and Reward Sensitivity in Mental Imagery" 2024-2025
- UKRI Future Leaders Fellow (Phase II) (£569,897) 2024-2027
PI "Towards a targeted neuromodulation intervention for substance use disorders"
- BBSRC Responsive Mode Grant BB/Y001494/1 2024-2028 (£1,223,819)
PI "Multi-site and state-dependent effects of ultrasound neuromodulation on brain function and cognition"
- Wellcome Trust Career Development Award 2023-2031 (£2,140,669)
Co-I "Characterising the circuitry underlying simulation and how it misbehaves to create worry"

Completed

Strategic Investment Fund (SIF) 2021-2022 (£116,200)

PI *"New generation of ultrasound brain stimulation device for double-blinded investigations"*

UKRI Future Leaders Fellow 2020-2024 (£1,030,995)

PI *"Mapping the neural basis of credit assignment for a new targeted intervention in addiction"*

Leverhulme 2019-2022: Award to Patric Bach (PI) (£462,995)

Co-I *"Social perception as Bayesian hypothesis testing and revision"*

Institute of Health and Care Research (PIHR) 2022-2023 (£2,947)

PI *"The effects of transcranial ultrasound stimulation of the anterior cingulate cortex in a human model of secondary hyperalgesia: a pilot study"*

Multiple BRIC Pump Priming (>£30,000)

Co-PI *"Neuromodulation of hyperalgesia with TUS on the anterior cingulate cortex"* 2022-2023

PI *"Neurochemical and functional connectivity effects of TUS in humans"* 2021-2022

Co-PI *"Effects of TUS on early visual detection"* 2021-2022

Co-I *"The Neuropsychological Markers of Specific Digital Harms: Highly Visual Social Media & Body Image Concern"* 2022-2023

Co-I *"Double dissociation of the dmPFC and TPJ in social counterfactual learning"* 2022-2023

Co-I *"Optimizing acquisition of prefrontal signal with multiband-multiecho fMRI"* 2021-2022

Praxis Clinical Grant 2012 (£2,000)

PI *"The role of emotions and impulsivity in eating disorders"*

Travel grant for J-1 exchange visitor (6 months), USC, Los Angeles, USA, 2010

PhD visitor Scholar, KAP Economics Department, University of Southern California

PhD European fellowship, 2009-2013

PhD scholarship in Neuroscience, advised by Prof. Giorgio Coricelli, Prof. Paolo Avesani

AWARDS, HONORS and FELLOWSHIPS

Best poster prize, awarded to Sophie Clarke (£200), FUN25, Hon Kong, 2025

ARIA R&D Creator (awarded by Advanced for Research & Innovation Agency), 2025 - present

John Rothwell Award for Innovation and Excellence in Neuromodulation (£1,000), 2024

Top 25 Social Science & Human Behaviour Articles of 2023, Nature Communications, 2023

PINS prize for Neuromodulation, followed by a Prize Essay in the journal *Science* (awarded to supervised PhD student Davide Folloni for co-authored papers), 2022

Vice Chancellor's Award - University of Plymouth - Research and Impact Excellence, 2022

UK Research and Innovation Future Leader Fellow, 2020 - present

Award for best Neuroscientific contribution (~\$20,000) by the Hong Kong Polytechnic University, 2019

Best poster price, Focused Ultrasound Neuromodulation (£150), Oxford University, September 2019

Best poster price, Neuroeconomics Summer School (£100), Amsterdam University, June 2012

Award for exceptional performance in Mathematics, Atomic Energy Commissariat, Toulouse, 2006

PEER-REVIEWED JOURNAL PUBLICATIONS

Publications in Top 10% Journal Percentiles: **80%** (SciVal for 2019-2025)

Highest FWCI: **12**

* indicates equal contribution

- Yaakub S*, Eraifej J*, Bault B*, ... **Fouragnan E** *Non-invasive ultrasonic neuromodulation of the human nucleus accumbens impacts reward sensitivity* Nature Communications 16 (10192), doi: 10.1038/s41467-025-65080-9 (2025)
 - Klein-Flugge MC et al. *Open Letter on Intervention Regimes and Adverse Events in Focused Ultrasound for Neuromodulation* Brain Stimulation (2025)
 - **Fouragnan E** *Response to: Brain injury during focused ultrasound neuromodulation for substance use disorder* Brain Stimulation 19 (1), 102989 doi: 10.1016/j.brs.2025.102989 (2025)
 - Attali, Schafer, **Fouragnan E**, Caskey et al. *ITRUSST Consensus on Biophysical Safety for Transcranial Ultrasonic Stimulation* Brain Stimulation (2025)
 - Bán, **Fouragnan E**, Philiastides *Early Arousal Signals Drive Reward Learning and Subsequent Choice Behaviour* bioRxiv, 2025.11. 25.690494 (2025)
 - **Fouragnan E**, A Sel Editorial overview: *Current advances in noninvasive brain stimulation* Current Opinion in Behavioral Sciences 66, 101598 (2025)
 - Algermissen, Rascu, Weber, Boer, Martin, Treeby, **Fouragnan E**, ... *Low-intensity focused ultrasound to human amygdala reveals a causal role in ambiguous emotion processing and alters local and network-level activity* bioRxiv, 2025.08. 14.670358 (2025)
 - Koutsoumpari, Algermissen, Nurbaya Yaakub, Hanneke, Bault, **Fouragnan E** *Ultrasound neuromodulation reveals distinct roles of the dorsal anterior cingulate cortex and anterior insula in Pavlovian biases* BioRxiv 659273 (2025)
 - Ntikas, Bach, Ganis, **Fouragnan E**, Parrotta *Late Event Related Potentials as prediction error signals that determine the updating of prior information with sensory evidence* OSF (2025)
 - Murphy, T Nandi, B Kop, T Osada, M Lueckel, WA N'Djin, KA Caulfield, **Fouragnan E**, le Bergmann *A practical guide to transcranial ultrasonic stimulation from the IFCN-endorsed ITRUSST consortium* Clinical Neurophysiology 171, 192-226 (2025)
 - Dunsford, M Komarnyckj, E **Fouragnan** *Leveraging transcranial for sleep and emotion regulation* Frontiers in Human Neuroscience 2025
 - Curtin, J Walinjar, EF **Fouragnan**, JJ Hendrikse, JP Coxon *Transcranial ultrasound stimulation induces white matter plasticity in the human corticospinal tract* bioRxiv, 2025.11. 10.687582 (2025)
 - Clarke, S Muggleston, M Lojkiewicz, J Marquez, N Bault, **Fouragnan E**, *Multi-focal ultrasound neuromodulation to the dorsal anterior cingulate cortex disrupts behavioural and neural pain processing* bioRxiv (* equal contribution), 2025.09. 04.674195 (2025)
 - Dunsford, Murphy, Darrietort, **Fouragnan***, Ganis* *Unilateral online ultrasound stimulation of early visual cortex suppresses responses to contralateral visual stimuli* bioRxiv (* equal contribution), 2025.08. 05.668165 (2025)
 - Ganis, **Fouragnan E**, Bach *Late Event Related Potentials as prediction error signals that determine the updating of prior information with sensory evidence* PsychArXiv doi: 10.31234/osf.io/duf7n_v1
 - Koutsoumpari N, Algermissen J, Yaakub S, den Ouden H, Bault N, **Fouragnan E** *Ultrasound neuromodulation reveals distinct roles of the dorsal anterior cingulate cortex and anterior insula in Pavlovian biases* bioRxiv 2025.06.12.659273
- FWCI > 6** - Aubry JF, Schafer M, **Fouragnan E**, Caskey C, Chen R, Darmani G, Bubrick H, Sallet J, Butler C, *ITRUSST Consensus on Biophysical Safety for Transcranial Ultrasonic Stimulation* arXiv preprint arXiv:2311.05359 Brain Stimulation

- Murphy, Nandi, Kop, Osada, N'Djin, Caulfield, Fomenko, Siebner, Ugawa, Bestmann, Martin, ... Butts Pauly, **Fouragnan**, Ole Bergmann *A practical guide to transcranial ultrasonic stimulation from the IFCN-endorsed ITRUSST consortium* Clinical Neurophysiology 2025 doi10.1016/j.clinph.2025.01.004
- Palmer T, Kadri K, Fakra E, Scholl J, **Fouragnan E** *Differential Relationship Between Meditation Methods and Psychotic-Like and Mystical Experiences* PLOS One 2024 19 (12), e0309357
- Murphy K and **Fouragnan E** *Precisely interfacing with the human brain* PLOS Biology 2024 22 (10), e3002884
- **Fouragnan E**, Hosking B, Rushworth M*, Sel A* *Timing along the cardiac cycle modulates neural signals of reward-based learning* Nature Communications. 15 (1), 2976, 2024
- Bault N, Yaakub S, **Fouragnan E** *Early-phase neuroplasticity induced by offline transcranial ultrasound stimulation in primates* Current Opinion in Behavioral Sciences. 56, 101370, 2024
- Klein-Flügge M*, **Fouragnan E***, Martin E* *The importance of acoustic output measurement and monitoring for the replicability of transcranial ultrasonic stimulation studies* Brain Stimulation. Vol 17, issue 1, P32-34, 2024

FWCI > 8 - In the Top 25 Social Science & Human Behaviour Articles of 2023:

- Yaakub S, White T, Verhagen L, Roberts J, Stagg C, Hall S, **Fouragnan E** *Transcranial focused ultrasound-mediated neurochemical and functional connectivity changes in deep cortical regions in humans* Nature Communications, 14 (5318), 10.1038/s41467-023-40998-0, 2023
- Komarnyckyj M, Retzler C, Whelan R, Young O, **Fouragnan E***, Murphy A* *Reward Dysfunction in Alcohol Dependence: An Electroencephalography Monetary Incentive Delay Task Study* Addiction Neuroscience. 8, 100116, 2023

FWCI > 12 - Yaakub S, White T, Kerfoot E, Verhagen L, Hammers A, Fouragnan E *Pseudo-CT from T1 weighted image for planning transcranial ultrasound study: an open-source tool* Brain Stimulation. Vol 16, issue 1 P75-78, 2023

FWCI > 5 - Attali D*, Tiennot T*, Schafer M, Fouragnan E, Sallet J, Caskey C, Chen R, Darmani G, Bubrick H, Butler C, Stagg C, Klein-Flügge M, Verhagen L, Yoo, Butts Pauly K*, Aubry JF* *Three-Layer Model with Absorption for Conservative Estimation of the Maximum Acoustic Transmission Coefficient Through the Human Skull for Transcranial Ultrasound Stimulation* Brain Stimulation, 2023

- Pisauro A*, **Fouragnan E***, Arabadzhyska, Apps M*, Philiastides M* *Neural Implementation of Bayesian mechanisms underlying the continuous trade-off between cooperation and competition* Nature Communications. 2022, 13 (1), 1-18
- Arabadzhyska D, Garrod O, **Fouragnan E**, De Luca E, Schyns P, Philiastides M *A common neural account for social and non-social decisions* Journal of Neuroscience. October 2022 doi:10.1523/JNEUROSCI.0375-22.2022
- Komarnyckyj M, Retzler C, Cao Z, Ganis G, Murphy A, Whelan R, **Fouragnan E** *At-risk alcohol users have disrupted valence discrimination during reward anticipation* 2022 Addiction Biology. 27 (3), e13174, doi: doi.org/10.1111/adb.13174

FWCI > 8 -Darmani G, Bergmann TO, Butts Pauly, Caskey, de Lecea, Fomenko, Fouragnan E, Legon W, Murphy, Nandi T, Phipps, Pinton G, Ramezanpour H, Sallet, Yaakub, Yoo, Chen R. *Non-invasive transcranial ultrasound stimulation for neuromodulation* 2022 Clinical Neurophysiology. 135 (51-73), doi:/10.1016/j.clinph.2021.12.010

-Folloni D*, **Fouragnan E** *, Wittmann M, Roumazeilles L, Tankelevitch L, Rushworth M *Ultrasound modulation of macaque prefrontal cortex selectively alters credit assignment–related activity and behavior* Science advances. 7 (51), 2021 eabg7700

-Trudel N, Wittmann MK, Scholl J, Klein-Flügge M, **Fouragnan E**, Tankelevitch L, Rushworth MFS, *Polarity of subjective uncertainty in ventromedial prefrontal cortex changes with behavioural adaptation across time* Nature Human Behavior. 2021 Aug 31. doi: 10.1038/s41562-020-0929-3. PMID: 32868885.

-Wittmann M K, **Fouragnan E**, Folloni D, Klein-Flügge M, Chau B, Khamassi M, Rushworth MFS. *Global reward state affects learning, the raphe nucleus, and anterior insula in monkeys.* Nature Communications. 11, 3771 (2020). doi:10.1038/s41467-020-17343-w

-Lopez-Persem A, Roumazeilles L, Folloni D, Marche K, **Fouragnan E**, Khalighinejad N, Rushworth M, Sallet J *Differential functional connectivity underlying asymmetric reward-related activity in human and non-human primates* PNAS. November 10, 2020 117 (45) 28452-28462 doi: 10.1073/pnas.2000759117

FWCI > 5 - Fouragnan E, Chau BKH, Folloni D, Kolling N, Verhagen L, Klein-Flügge M, Tankelevitch L, Papageorgiou GK, Aubry JF, Sallet J, Rushworth MFS. *The macaque anterior cingulate cortex translates counterfactual choice value into actual behavioral change.* Nature Neuroscience. 22(5), 797-808. 2019. doi: 10.1038/s41593-019-0375-6

- Queirazza F, **Fouragnan E**, Cavanagh J, Steele D, Philiastides M. *Neural signatures of reinforcement learning in unmedicated depressed patients predict response to Cognitive Behavioural Therapy–* Science Advances. 2019

FWCI > 9 -Folloni D, Verhagen L, Mars R, **Fouragnan E**, Aubry JF, Rushworth MFS, Sallet J. *Non-invasive and reversible manipulation of activity in deep structures of the primate brain using focal ultrasound neurostimulation.* Neuron. 101, 1109–1116. February 2019

FWCI > 5 -Fouragnan E, Retzler C, Philiastides MG. *Separate neural representations of prediction error valence and surprise: Evidence from an fMRI meta-analysis.* Human Brain Mapping. 2018;00:1–20. March 2018

-**Fouragnan E**, Retzler C, Mullinger K, Philiastides MG. *Spatiotemporal neural characterization of prediction error valence and surprise during reward learning in humans.* Scientific Reports. July 2017 (7):4762.

-Pisauro A, **Fouragnan E**, Retzler C, Mullinger K, Philiastides MG. *Neural correlates of evidence accumulation during value-based decisions revealed via simultaneous EEG-fMRI.* Nature Communications. July 2017 (8): 15808.

-Neveu R, **Fouragnan E**, Barsumian F, Carrier E, Lai M, Sultan J, Nicolas A, Coricelli G. *Preference for safe rather than risky options in binge eating.* March 2016. Front. Behav. Neurosci. doi: 10.3389/fnbeh.2016.0006

-**Fouragnan E**, Retzler C, Mullinger K, Philiastides M. *Two spatiotemporally distinct value systems shape reward-based learning in the human brain.* August 2015. Nature Communications (6):8107 doi:10.1038/ncomms9107

-Neveu R et D, Barsumian F, **Fouragnan E**, Carrier E, Lai M, Sultan J, Nicolas A, Coricelli G. *Improved planning abilities in binge eating.* August 2014. PLoS ONE. 9(8):e105657

FWCI > 8 - Fouragnan E, Chierchia G, Greiner S, Neveu R, Avesani P, Coricelli, G. *Reputational priors magnify striatal responses to violation to trust.* February 2013. Journal of Neuroscience. 33(8):3602–3611

TECHNICAL REPORTS AND DISSERTATION

Fouragnan E. The Neural Computation of Trust and Reputation. (April 2013) PhD thesis
<http://eprints-phd.biblio.unitn.it/970/>

Matthews R, Soussou W, **Fouragnan E**, Turner P J, Shelby R A. (June, August, October, December 2008) *Wearable Electrophysiological Sensor Array for Detection of Neurotoxic Effects*. Defence Advanced Research Projects Agency Phase II [bi-monthly reports and final reports submitted to DARPA]

Matthews R, **Fouragnan E**, McDonald N J, Soussou W, Turner P J, Shelby RA. (August, October 2008) *Real-Time Bio-Sensors for Enhanced C2ISR Operator Performance*. Air Force Research Laboratory (AFRL) Phase II [bi-monthly reports and final reports submitted to DARPA]

Soussou W, Turner PJ, **Fouragnan E**, Trejo J. (November 2008) *EEG Electrode Noise/Classification trade-off study and CMR/Classification experimentation* [QUASAR internal report]

Fouragnan E, Lofi A, Hugon E, Danoy P. (July 2002) *Which services for wellbeing, stress and anxiety management?* [Technical Reports of Nouvelles Frontières]

INVITED TALK, CONFERENCE PRESENTATIONS

Keynote speaker:

Neurotechnology Centre, Launch, University of Glasgow, March 2024

BrainBox Initiative Conference, Wellcome Centre, London, September 2023 *for the John Rothwell*

Award for Innovation and Excellence in Neuromodulation

NIMH Ultrasound Neuromodulation for Mental Health Applications, September 2023

Society for Psychophysiological Research, *Presidential Symposium*, September 2022

Welcome for Integrative Neuroscience, *Launch Symposium*, Oxford, November 2017

Chair:

Translational Meeting, Neurospin, Paris, November 2025

International Society for Therapeutic Ultrasound, ISTU, Banff, Canada, June 2025

BrainBox Initiative Conference, Wellcome Collection, London, September 2024

International Symposium of Focused Ultrasound Neuromodulation, Toronto, July 2024

International Symposium of Focused Ultrasound Neuromodulation, Mainz, September 2022

Computational Properties of the Prefrontal Cortex, Oxford, May 2021

Invited guest lecturer:

Translational Meeting, Neurospin, Paris, November 2025

International Symposium of Focused Ultrasound Neuromodulation, Hong Kong, July 2025

Institute Polytechnic of Hong Kong, Hong Kong, July 2025

International Society for Therapeutic Ultrasound, ISTU, Banff, Canada, June 2025

Symposium for Biology of Decision Making, Lyon, June 2025

Maudsley Neurotechnology Meeting, London, May 2025

Neuroeconomics seminar series, Zurich, Switzerland, March 2025

Brain Meetings hosted at the Functional Imaging Laboratory (FIL), UCL February 2025

Seminar series CUBRIC, Cardiff, January 2025

Workshop Chen Institute, San Francisco, January 2025

Building a Rich Research Environment, UHP/UoP Joint Showcase Event, July 2024

CPNN+ University of Exeter, Brain Stimulation Workshop, July 2024

University of Exeter, Brain Dynamics Seminar Series, June 2024

15th anniversary of the Centre for Cognitive Neuroimaging, University of Glasgow, June 2024

Brain Dynamic Network Unit Lecture Series, University of Oxford, June 2024

Precision Imaging, School of Medicine, University of Nottingham May 2024

MRC CBU, Chaucer Club seminars series, Cambridge, April 2024

Ultrasound Neuromodulation Series, Launch, Attune Neuroscience, San Francisco, February 2024

NIMH, Section Learning and Plasticity, West Virginia, USA, January 2024

International Meeting Neural Resources of Cognition, Magdeburg, Germany, November 2023

Centre for Human Brain Health - University of Birmingham, November 2023
Workshop Ultrasound Neuromodulation, BrainBox Initiative, Stanford University, July 2023
Focused Ultrasound Neuromodulation Conference at Stanford University, July 2023
Institute of Medical Research, Leeds Seminar, University of Leeds, May 2023
International conference of Brain Stimulation, TUS workshop, February 2023
Seminar series, Institut du cerveau et de la moelle epiniere, Paris, January 2023
Workshop Non-Invasive Brain Stimulation Copenhagen, December 2022
Seminar series, University of Liverpool, December 2022
International Symposium of Focused Ultrasound Neuromodulation, September 2022
Workshop Nijmegen on Non-Invasive Brain Stimulation, September 2022
International Congress of Clinical Neurophysiology, September 2022
NWG-funded NIBS-course "TUS: Best Practice", July 2022
Seminar on Ultrasound Neurostimulation. Oxford, July 2022
World congress of the International Neuromodulation Society, Barcelona, May 2022
International Symposium on Biology of Decision Making. Oxford, May 2020
ISAM Neuroscience Interest Group (NIG), seminar, February 2020
Seminar series Huddersfield, UK. September 2019
British Association for Cognitive Neuroscience, Glasgow, UK. September 2019
INSPIRE Interdisciplinary Meeting. School of medicine, Plymouth, April 2019
Seminar series. University of Huddersfield. Huddersfield, UK, November 2018
Seminar series. University of Plymouth. Plymouth, UK, October 2018
Cognitive & Behavioural Neuroscience Seminar. Oxford, UK, January 2017
LNiF series, Centre for Brain and Cognitive Science. Trento, Italy, June 2015
Centre for Cognitive Neuroscience. CNRS, Lyon, France, January 2015
Centre for Decision Research & Experimental Economics. Nottingham, UK, February 2013
LNiF series, Centre for Brain and Cognitive Science, Trento, Italy, April 2012
Department of Economics KAP, USC, Los Angeles, USA, November 2010
Alptis Conferences and debates. Annual congress, Pessac, France, October 2008

Poster presentation as first author:

British Association for Cognitive Neuroscience, Plymouth, UK, September 2017
Society for Neuroscience. Washington, USA, October 2017
Neuroeconomics Society, Annual Conference, Toronto, Canada. October 2017
International Symposium on Biology of Decision Making, Bordeaux, France, May 2017
Society for Neuroscience. Chicago, USA, October 2015
Organisation for Human Brain Mapping, Hamburg, Germany, June 2014
Society for Neuroeconomics. Lausanne, Switzerland, June 2013
Society for Neuroeconomics. Miami, USA, September 2012
Concepts, Actions and Object (CAOs), Rovereto, May 2011

Poster presentation as last author:

Neuromod+ Conference, Newcastle, 2025
6th Focused Ultrasound Neuromodulation Conference, Hong Kong 2025
BrainBox Initiative Conference, Wellcome Centre, London, September 2024
5th Focused Ultrasound Neuromodulation Conference, Toronto 2024
BrainBox Initiative Conference, Wellcome Centre, London, September 2023
4th Focused Ultrasound Neuromodulation Conference at Stanford University, July 2023
3rd International Symposium on Focused Ultrasound, September 2022
Federation of European Neuroscience Societies (FENS) Forum, Paris, France, July 2022
6th HBP student conference on interdisciplinary brain research, February 2022
Faculty of Health PGR showcase, Plymouth, June 2022
Computational Properties of the Prefrontal Cortex, Oxford, May 2022
International Symposium on Biology of Decision Making (online), 2021
Neurofrance (online), May 2021
SSA PhD symposium (online), November 2021
SSA Annual conference (online), November 2021
International Symposium on Biology of Decision Making (online), May 2020

MEDIA COVERAGE

ESSAY

The Conversation (French article) *Ultrasons focalisés: un nouvel outil pour soigner le cerveau avec précision*

Published: February 4, 2025

The Conversation *Ultrasound waves zapped at the brain are being used to treat everything from hand tremors to addiction* Published: May 23, 2024

ONLINE MATERIAL

Educational video on Low Intensity Focused ultrasound:

<https://www.youtube.com/watch?v=IZMM9qByvYY>

John Rothwell Award Interview

<https://www.youtube.com/watch?v=uJft6CAE8Ow>

NIMH Workshop: Ultrasound Neuromodulation for Mental Health Applications

https://www.youtube.com/watch?v=LokzdQU_F48

Stanford Online Course, invited by Prof Kim Pulls Pauly

https://www.youtube.com/watch?v=ReP_66XKl4s

Educational video on Low Intensity Focused ultrasound:

<https://www.youtube.com/watch?v=KsuqRldCspU>

NEWS ARTICLE

Guardian article: *Brain Implant that could boost mood by using ultrasound to go under NHS trial* (2025)

New Medical Life Science: *Study shows how low-intensity ultrasonic waves can modulate decision-making process in the brain* (2019)

Science Daily, EurekAlert, MedicalXpress, Technology Network, Long Room, The medical news: *Low-intensity ultrasound can change decision-making process in the brain* (2019)

Focused Ultrasound Federation: *Focused Ultrasound to Identify Behavior-specific Regions of the Brain* (2017)

MedicalXpress, *Separate brain systems process the consequences of our decisions* (2017)

SCIENTIFIC BLOGS, INTERVIEWS

FUS Forward - <https://open.spotify.com/episode/0y2WYOPh63a0IEy3Xa51x0?si=RGsKwU84QsWFPMTWT1jqMg&pi=-A8pGlaMSoaDd&t=0&nd=1&dlsi=78365978ed574404> (2025)

BJKS Podcast - <https://bjks.buzzsprout.com/1390924/episodes> Episode 114, Zurich (2025)

Neuroscience RSS Feeds - Neuroscience News Updates: *Low-intensity ultrasound can change decision making process in the brain* (2019)

ReliaWire: *Counterfactual thinking causally related to the anterior cingulate cortex* (2019)

Medical Research News and Interviews: *Pulse Ultrasound to the Brain could be Used to Affect Decision Making* (2019)

PSI-COMM newsletter, *How do we learn? Insights from the brain* (2017) video available at:

<https://www.elsafouragnan.com/news>

BBSRC, bbsrc.tumblr.com/post, *Mapping the consequences of our decisions in the brain*

TEACHING & SUPERVISION

Post-Doctoral SUPERVISION

Dr Elena Brunet, University of Plymouth, UK, 2025 – Present

Dr Dylan Curtis, University of Plymouth, UK, 2025 – Present

Dr Sophie Clarke, University of Plymouth, UK, 2024 – Present

Dr Suraya Dunford, University of Plymouth, UK, 2023 – Present

Dr Siti Yaakub, University of Plymouth, UK, 2020 – 2023

PhD SUPERVISION as DoS and co-S (6 completed, 6 current)

Eleonora Carpino, PhD in Neuroscience, University of Plymouth, UK, 2023 – Present

Niamh Cameron, PhD in Neuroscience, University of Plymouth, UK, 2023 – Present

Rimsha Mahrukh, PhD in Neuroscience, University of Plymouth, UK, 2023 – Present

Mathilde Lojkiewicz, PhD in Neuroscience, University of Plymouth, UK, 2022 – Present

Nomiki Koutsoumpari, PhD in Neuroscience, University of Plymouth, UK, 2022 – Present

Timothy Palmer, PhD in Neuroscience, University of Plymouth, UK, 2021 – 2025 - Now postdoc at the CNRS, Lyon, France

Kenza Kadri, PhD in Psychology, University of Plymouth, UK, 2020 (VIVA 2023) - Now postdoc at the Max Plank Institute, Germany
Mica Komarnyckyj, PhD in Psychology, University of Huddersfield, UK, 2018 - 2022 (VIVA 2022) - Now postdoc at the University of Manchester
Rory Baxter, PhD in Psychology, University of Plymouth, UK, 2018 - 2022 (VIVA 2022)
Eleonora Parrotta, PhD in Psychology, University of Aberdeen, UK, 2018 - 2022 (VIVA 2022)
Nadescha Trudel, PhD in Psychology, University of Oxford, UK, 2018 - 2021 (VIVA 2021) - Now postdoc at Max Planck UCL Centre for Computational Psychiatry and Ageing, London
Davide Folloni, PhD in Psychology, University of Oxford, UK, 2018 - 2021 (VIVA 2021) - Now postdoc at Icahn School of Medicine at Mount Sinai; USA; Science and PINS prize for Neuromodulation, followed by a Prize Essay in the journal *Science* (on co-authored papers).

PhD EXAMINER

Maria Miscouroudi, UCL - VIVA December 2025
Benjamin Kop, PhD at the Donders Institute, 2021 - VIVA September 2025
Daniel Graham, PhD at the university of Plymouth - VIVA passed in 2025
Lisa Spierling, PhD at Oxford, 2022 - VIVA passed in 2025
Benjamin Connell, PhD at Bristol, 2020 - VIVA passed in 2024
Kitty Ban, PhD at Glasgow, Glasgow, 2021 - VIVA passed in 2024
Joshua Bolam, PhD at Leeds, Leeds, 2021 - VIVA passed in 2023
Nicholar Clairis, PhD at the Sorbonne University, Paris, France, 2018 - VIVA passed in 2022
Paul Knytl, PhD at the University of Surrey, School of Psychology, UK, 2018 - VIVA passed in 2021
Elodie Levy, PhD at the Sorbonne University, Science and Engineering, Paris, France, 2020 - Present

LECTURING

Each course includes lectures and workshops/tutorials. In the methodological courses, I teach on a range of topics, including regions and connectivity brain analyses, model-based fMRI analyses, Bayesian model comparison and behavioural models of reinforcement learning

MA in Human Neuroscience (three modules) - *Physics of Neuroimaging (module leader 2022)* - *Fundamental in spatial and temporal neural signals - fMRI tools and analyses*, Plymouth, 2020 - present
MA in Psychology (two modules) - *Issues in Cognitive and Brain Science - The neural basis of decisions*, Plymouth, 2018 - 2022
UG in Psychology (two modules) - *From Neurons to Behaviours - Introduction to cognitive neuroscience*, Plymouth, 2018 - 2022
UNIQ (summer school) - *Dopamine and Learning*, University of Oxford, Summer 2017
MA in Cognitive Sciences - *Reinforcement Learning and Value-Based Decision*, Trento, Italy, 2012
Operating Centre, Central Air Navigation Systems, *Cognitive Properties of Human Factors and Error Models in Engineering*, Bordeaux, France, June 2007
MA in Psychotherapy - *Mental Imagery, Neurobiology, Stress*, Institute of Hydrotherapy, France, 2006
UG Sports Management - *Mental Imagery for Cognitive Science*, Bordeaux, France, 2005

TUTORING

Dissertation Project, University of Plymouth, 2018 - present
Saint Peter College, University of Oxford, Hilary term 2018
Sarah Lawrence Programme, Wadham College, University of Oxford, Michaelmas Term 2017
UNIQ summer school, University of Oxford, July 2017
Critical review, University of Glasgow, first semester 2015, 2016
Dissertation Project, University of Glasgow, second semester 2015, 2016

PROFESSIONAL SERVICE ACTIVITIES

Grant Reviewer

UKRI FLE, Agence National de Recherche ([ANR], rapporteure et lectrice), European Research Council; UK Research Council (BBSRC, MRC, ESRC), Wellcome Trust, Federation for Focused Ultrasound

Editorial and Review Boards

Current Opinion in Behavioral Science; Frontiers in Human Neuroscience

Leadership & Advisory Boards

2025 – present *Executive Director of the Brain Research Imaging Centre (BRIC)*
2022 - present *Advisor Board Member ATTUNE Neuroscience,*
2018 – present *Executive Member of ITRUSST*
2020 – 2025 *Head of the NIBS department, Brain research Imaging Center*
2017-2018 *Board Member of the Change Group, Oxford*
2020-2024, 2026 *Program Committee, Focused Ultrasound Neuromodulation*
2021 *Program Committee, Computational Properties of the Prefrontal Cortex*

Ad-hoc Reviewer

Nature Medicine; Nature Neuroscience; Nature Communications; PNAS; Nature Human Behaviour; Nature Metabolism; Current Biology; Psychological Science; Molecular Psychiatry; Biological Psychiatry; Journal of Neuroscience; Cerebral Cortex; NeuroImage; Journal of Cognitive Neuroscience; Cognition; Psychological Medicine; Journal of Experimental Social Psychology; Neuropsychopharmacology; Social, Cognitive, & Affective Neuroscience; Current Opinion in Behavioral Science; Journal of Experimental Psychology; Science Advances, Scientific Reports, Neuron, Brain Stimulation, Journal of neuroscience, Current Biology; Iscience; Frontiers; IEEE

CONFERENCE AND WORKSHOP ORGANISATION

3-days hands-on Workshop on Focused Ultrasound in humans, Plymouth, UK, May 2025
3-days Workshop on Focused Ultrasound Neuromodulation, Lyon, France, October 2024
1-day Workshop on Focused Ultrasound, CPNN+, Exter, UK, July 2024
3-days hands-on Workshop on Focused Ultrasound in humans, Plymouth, UK, May 2024
5th International Conference on Focused Ultrasound, Toronto University, July 2024
4th International Conference on Focused Ultrasound, Stanford University, July 2023
3-days hands-on Workshop on Focused Ultrasound in humans, Plymouth, UK, May 2023
3rd International Conference on Focused Ultrasound, Mainz, September 2022
5th Computational Properties of the Prefrontal Cortex, Oxford, May 2021
2nd International Conference on Focused Ultrasound, (online during COVID), September 2021
1st International Conference on Focused Ultrasound, Oxford, September 2020