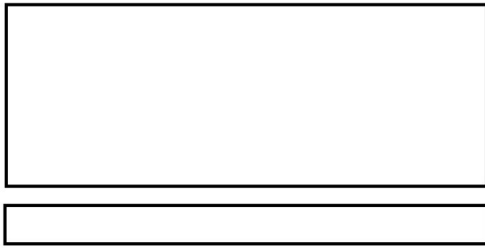


Valeria Oliva



EMPLOYMENT

Postdoctoral Research Fellow (Advisor: Fadel Zeidan)

March 2021 -
Present

Department of Anaesthesiology, School of Medicine, University of California San Diego, San Diego, CA, United States

EDUCATION

Doctor of Philosophy in Neural Dynamics

February 2021

University of Bristol, Bristol, United Kingdom – Wellcome Trust funded

Dissertation title: “Mechanistic dissection of the attentional modulation of pain in humans”

Thesis outcome: No corrections. *Thesis nominated for the best PhD thesis award.*

Advisors: Dr Jonathan Brooks, Prof Anthony Pickering, Dr Rosalyn Moran

Master of Science in Neurobiology

July 2016

University of Rome La Sapienza, Rome, Italy

Dissertation title: “Interplay of Prefrontal cortex and Amygdala during extinction of drug seeking”

Degree mark: 110/110 *cum laude*.

Advisors: Dr Gianluca Baldassarre, Prof Stefano Puglisi-Allegra, Dr Luisa Lo Iacono

Bachelor’s Degree in Biological Sciences

June 2013

University of Rome La Sapienza, Rome, Italy

Dissertation title: “Molecular identification of two species of *Knipowitschia* using PCR-RFLP”

Degree mark: 108/110

Advisors: Prof Annarita Rossi, Dr Valentina Milana

AWARDS and NOMINATIONS

- | | |
|---|---------------|
| 1. Doctoral Prize nomination for the Faculty of Life Sciences, University of Bristol | November 2021 |
| 2. Best presentation for final year PhD student talk at the School of Physiology, Pharmacology and Neuroscience away day, University of Bristol | 17/Jul/2020 |
| 3. Best presentation for first year PhD student talk at the School of Physiology, Pharmacology and Neuroscience away day, University of Bristol | 03/Jul/2018 |
| 4. Wellcome Trust - Four-year PhD Studentship in Neural Dynamics. Grant number: 203963/Z/16/Z | 2016 |
| 5. Student Collaboration Scholarship, University of Rome La Sapienza (awarded on merit) | 2011 - 2013 |

RESEARCH EXPERIENCE

Postdoctoral research projects - Department of Anaesthesiology, University of California San Diego, San Diego, CA, United States March 2021 – Present

1. *Brain mechanisms during mindfulness-based analgesia in chronic low back pain patients (lead of the study).*
Data collection ongoing.
2. *The role of endogenous opioids in mindfulness and non-mindfulness meditation for the direct alleviation of evoked radicular chronic low-back pain.*
Completed, manuscript submitted.
3. *Opioidergic mechanisms underlying sex differences in mindfulness-based analgesia in chronic low back pain patients (lead of the study).*
Completed, manuscript in preparation.
4. *Brain mechanisms supporting empathy cultivation, compassion development, and pain-relief by compassion-based mental training (lead of the study).*
Completed, manuscript in preparation.
5. *Relationship between restricting respiration rate and pain sensitivity in healthy volunteers (lead of the study).*
Completed, manuscript in revision.
6. *Effective brain connectivity during mindfulness-based analgesia in healthy volunteers.*
Completed, manuscript published.

PhD projects – School of Physiology, Pharmacology and Neuroscience,
University of Bristol, Bristol, United Kingdom

May 2017 –
September 2020

1. *Effective connectivity between cerebrum and brainstem during attentional modulation of pain in healthy volunteers (lead of the study)*. Completed, manuscript published.
2. *Brain and brainstem mechanisms of the attentional modulation of pain in Fibromyalgia patients*. Completed, manuscript published.
3. *Pharmacology and connectivity of brain, brainstem, and spinal cord during the attentional modulation of pain in healthy volunteers (lead of the study)*. Completed, manuscript published.
4. *Resting state connectivity networks in Fibromyalgia patients*. Student summer project completed.
5. *Does central noradrenergic activity account for attentional analgesia in humans? A pupillometric analysis*. Undergraduate final project completed.

Laboratory rotation - School of Biochemistry, University of Bristol, Bristol,
United Kingdom

January 2017 –
April 2017

1. *Modelling Argonaute protein interactions as predictors of local protein translation during synaptic plasticity in neurons*. Completed.

Master Thesis - *Laboratory of Computational Embodied Neuroscience, Institute of Science and Technologies of Cognition, National Research Council, Rome, Italy*

February 2015 –
June 2016

1. *Noradrenergic-dependent interplay of Prefrontal cortex and Amygdala during extinction of drug seeking*. Completed, two manuscripts published.

Undergraduate Thesis - Biology and Biotechnology Department “Charles Darwin”, La Sapienza University of Rome, Rome, Italy

January 2013 –
May 2013

1. *Molecular identification of two species of *Knipowitschia* using PCR-RFLP*. Completed.

PUBLICATIONS

1. Khatib L, Glaser-Reich J, Mosbey D, **Oliva V**, Dean J, Riegner G, Harth MN, Zeidan F. Mindfulness training reduces aggression and improves well-being in highly stressed law enforcement officers. *Journal of Police and Criminal Psychology*, 2022, <https://doi.org/10.1007/s11896-022-09554-2>.
2. Kaptan M, Vannesjo SJ, Mildner T, Horn U, Hartley-Davies R, **Oliva V**, Brooks JCW, Weiskopf N, Finsterbusch J, Eippert F. Automated slice-specific z-shimming for functional magnetic

resonance imaging of the human spinal cord. *Human Brain Mapping*, 1– 19, 2022, <https://doi.org/10.1002/hbm.26018>

3. Riegner G, Posey G, **Oliva V**, Jung Y, Mobley W, Zeidan, F. Disentangling self from pain: Mindfulness meditation-induced pain relief is driven by thalamic-default mode network decoupling. *Pain*, 2022, <https://doi: 10.1097/j.pain.0000000000002731>
4. Khatib L, Riegner G, Dean J, **Oliva V**, Cruanes G, Mulligan B, Zeidan F. The Effects of Mindfulness-Based Stress Reduction on Trauma in Victims of Gun Violence: A Pilot Study. *Mindfulness*, 2022, <https://doi.org/10.1007/s12671-022-01858-y>
5. **Oliva V**, Hartley-Davies R, Moran R, Pickering AE, Brooks J. Simultaneous brain, brainstem, and spinal cord pharmacological-fMRI reveals involvement of an endogenous opioid network in attentional analgesia. *Elife*, 2022, <https://doi.org/10.7554/eLife.71877.sa0>
6. **Oliva V**, Gregory R, Brooks J, Pickering AE. Endogenous pain modulatory mechanisms are preserved in Fibromyalgia. *Pain*, 2022, <https://doi: 10.1097/j.pain.0000000000002319>
7. **Oliva V**, Gregory R, Davies W, Harrison L, Moran R, Pickering AE, Brooks J. Parallel cortical-brainstem pathways to attentional analgesia. *NeuroImage*, 2021, <https://doi.org/10.1016/j.neuroimage.2020.117548>
8. **Oliva V**, Cartoni E, Latagliata EC, Puglisi-Allegra S, Baldassarre G. Interplay of prefrontal cortex and amygdala during extinction of drug seeking. *Brain Structure and Function*. 2017; <https://doi:10.1007/s00429-017-1533-9>
9. Latagliata, E C, Lo Iacono L, Chiacchierini G, Sancandi M, Rava A, **Oliva V**, and Puglisi-Allegra S. Single Prazosin Infusion in Prelimbic Cortex Fosters Extinction of Amphetamine-Induced Conditioned Place Preference. *Frontiers in Pharmacology* (2017); <https://doi:10.3389/fphar.2017.00530>

MANUSCRIPTS in revision

1. **Oliva V**, Baumgartner JN, Farris SR, Riegner G, Khatib L, Jung Y, Coghill RC, Zeidan F. Neural and psychological mechanisms supporting the relationship between resting breathing rate and pain sensitivity (*under revision at Mindfulness*).
2. Khatib L*, Dean J*, **Oliva V***, Riegner G, Gonzales N, Birnebaum J, Cruanes G, Hollenback N, Nazir Z, Lopez C, Allen A, Jampana N, Fuentes R, Dang T, Miller J, Chakravarathy K, Zeidan F. The role of endogenous opioids in mindfulness and non-mindfulness meditation for the direct alleviation of evoked radicular chronic low-back pain: A randomized, crossover clinical trial (*under revision at JAMA Psychiatry*)

* Authors contributed equally

MANUSCRIPTS in preparation

3. **Oliva V**, Reyes M, Dean J, Riegner G, Khatib L, Zeidan, F. Mindfulness-based analgesia is mediated by endogenous opioids in male but not female chronic lower back pain patients.
4. **Oliva V**, Dean J, Riegner G, Khatib L, Mobley W, Zeidan, F. Higher empathy for a romantic partner in pain is associated with higher precuneus activation.

TALKS at International Conferences

1. **Oliva V**, Slower Respiration Rate Predicts Lower Pain Sensitivity and Greater Supramarginal Gyrus Activation. Neuroimaging SIG, United States Association for the Study of Pain meeting, May 19, 2022, Cincinnati, Ohio.

POSTER PRESENTATIONS at international conferences

1. **Oliva V**, Riegner G, Khatib L, Dean J, Ross J, Lopez C, Allen A, Barrows D, Uvarova A, Reyes M, Fuentes R, Dhillon S, Mobley W, Zeidan F. Higher cerebral blood flow in the amygdala predicts greater empathy for a romantic partner in pain. International Society For Contemplative Research Inaugural Meeting, February 2023, San Diego, California.
2. **Oliva V**, Riegner G, Khatib L, Dean J, Ross J, Lopez C, Allen A, Barrows A, Uvarova A, Reyes M, Fuentes R, Mosbey D, Linares L, Mobley W, Zeidan F. I fear your pain: the role of the amygdala in human empathy. Society for Neuroscience Meeting, November 2022, San Diego, California.
3. Dean J, Riegner G, Posey G, **Oliva V**, Khatib L, Yungkyoo J, Wager T, Zeidan F. Mindfulness Meditation Modulates Nociceptive-specific but Not Placebo-related Pain-predictive Patterns. United States Association for the Study of Pain meeting, May 2022, Cincinnati, Ohio. DOI: 10.1016/j.jpain.2022.03.175
4. **Oliva V**, Baumgartner J, Farris S, Youngkyoo J, Coghill R, Zeidan F. Slower respiration rate predicts lower pain sensitivity and greater supramarginal gyrus activation. United States Association for the Study of Pain meeting, May 2022 Cincinnati, Ohio. DOI: 10.1016/j.jpain.2022.03.172
5. Khatib, L, **Oliva V**, Riegner G, Posey G, Dean J, Baumgartner J, Jung Y, Kraft R, Birenbaum J, Zeidan F. Weaker resting-state ventromedial prefrontal cortex-amygdala connectivity is associated with mindfulness meditation-induced depressive mood reductions. Society for Neuroscience annual meeting, November 2021, virtual.
6. Riegner G, Posey G, **Oliva V**, Khatib, L, Baumgartner J, Kraft R, Jung Y, Zeidan F. Neurofunctional connections supporting mindfulness-based pain relief. Society for Neuroscience annual meeting, November 2021, virtual.
7. Dean J, Posey G, Riegner G, Khatib, L, **Oliva V**, Baumgartner J, Jung Y, Kraft R, Zeidan F. Mindfulness meditation-induced stress reductions predict pain relief. Society for Neuroscience annual meeting, November 2021, virtual.

Oliva, Valeria - CV

8. **Oliva V**, Wilson A, Hartley-Davies R, Moran R, Pickering AE, Brooks J. Whole CNS imaging of pain modulation: from spinal cord to brain. Organization for Human Brain Mapping annual meeting, June 2020, virtual.
9. **Oliva V**, Wilson A, Hartley-Davies R, Moran R, Pickering AE, Brooks J. Imaging pain modulation from cortex to spinal cord. Society for Neuroscience annual meeting, November 2019, Chicago, Illinois).
10. **Oliva V**, Moran R, Pickering AE, Brooks J. Connectivity analysis in distraction induced analgesia. World Congress on Pain annual meeting, September 2018, Boston, Massachusetts.
11. Gregory R*, **Oliva V***, Brooks J, Pickering AE. Differences in attentional pain modulation in fibromyalgia: a forebrain-brainstem communication issue? World Congress on Pain, September 2018, Boston, Massachusetts.
12. **Oliva V**, Moran R, Pickering AE, Brooks J. Connectivity analysis in distraction induced analgesia. Federation of European Neuroscience Societies, July 2018, Berlin, Germany.

* Authors contributed equally

REVISION of scientific publications

1. Journal of Pain
2. Neuroimage:clinical

TEACHING AND MENTORING

- | | |
|---|----------------------------|
| 1. ISP Committee member in Mikaila Reyes Master's Thesis, University of California San Diego. | June 2022 |
| 2. Training and advising Laboratory members and student volunteers (Subber Dhillon, Daniel Barrows, Alexandra Uvarova, Alessandro Allen, Carolina Lopez, Richard Fuentes, Ekayyem Kanj, Ryan Van Roekens, Gabriel Riegner, Lora Khatib, Jacob Ross, Mikaila Reyes, Sophia Berberian), University of California San Diego. | March 2021 - Present |
| 3. Lab demonstrator for the Quantitative Sensory Testing practical for the Neuroscience of Pain course, University of Bristol. | 05/Dec/2018 & 02/Dec/2019 |
| 4. Supervision of Isis Terrington* and Sage Bannister for their final year undergraduate project, University of Bristol. | November 2018 – March 2019 |
| 5. Conduction of workshop on Dynamic Causal Modelling for fMRI during SPM course, University College London. | 27/Oct/2018 |
| 6. Supervision of Perianen Ramasawmy's work for student summer project, University of Bristol. | June 2018 – September 2018 |
| 7. Laboratory demonstrator (Teaching Assistant) in the laboratory practical on taste for the Neurophysiology course, University of Bristol. | November 2017 |

* Awarded the *British Journal of Anaesthesia (BJA)/Royal College of Anaesthetists (RCOA)* funded John Snow Anaesthesia Intercalated Award for this work.

OUTREACH ACTIVITIES

- | | |
|---|-------------|
| 1. Interview with La Repubblica , reported in the following article:
“Meditating even in an hospital, but in a scientific way” (original title in Italian “ <i>Meditare persino in ospedale, ma come scienza comanda</i> ”).
https://www.repubblica.it/salute/2022/04/16/news/meditare_si_ma_fa_rlo_come_scienza_comanda-345238734/ | 16/Apr/2022 |
| 2. T. Denny Sanford Institute for Empathy and Compassion Journal Club,
University of California San Diego | 2021/022 |
| 3. Neural Dynamics journal club, University of Bristol | 2017/2018 |
| 4. Bristol Neuroscience Festival, University of Bristol | 23/Mar/2017 |
| 5. Student helper during Open Day, University of Bristol | 22/Nov/2017 |

WORKSHOPS AND COURSES

- | | |
|--|---------------|
| 1. The Challenge of Chronic Pain (Wellcome Genome Campus, Hinxton, UK). | March 2019 |
| 2. Spinal Cord Toolbox course (London, UK). | February 2019 |
| 3. Basic life support training (University of Bristol Hospital, Bristol, UK). | 04/Jan/2019 |
| 4. Spinal Cord Toolbox course (Paris, France). | June 2018 |
| 5. Workshop on neural networks: from dynamical systems to psychology (Exeter, UK). | 24/Nov/2017 |
| 6. Starting to teach for Postgraduate students – lab demonstrating (Bristol, UK). | 27/Sept/2017 |
| 7. FSL course (Vancouver, Canada). | July 2017 |
| 8. British Neuroscience Association conference (Birmingham, UK). | April 2017 |

REFEREES

1. Dr Fadel Zeidan: fzeidan@health.ucsd.edu – current mentor
2. Prof Anthony Pickering: tony.pickering@bristol.ac.uk – PhD supervisor
3. Dr Jonathan Brooks: Jonathan.Brooks@uea.ac.uk – PhD supervisor
4. Dr Rosalyn Moran: rosalyn.moran@kcl.ac.uk – PhD supervisor