

## EDUCATION

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- Oct 2018 to present  
Sep 2016 - Jun 2018
- PhD Candidate - Neuroscience, University of Melbourne**  
**Master of Research - Neuroscience**, Université de Bordeaux
- » Ranked 1<sup>st</sup> in the cohort (Dux; received 'Mention Très Bien' [highest honours])
  - » Study emphases: Cognitive neuroscience, Pathophysiology of psychiatric disorders, M.R.I, Functional neuroanatomy, Statistics (using R)
- Jul 2011 - Mar 2013
- Post-graduate degree in Business Management (MBA)**, MICA, Ahmedabad
- » Study emphases: marketing, market research, consumer behaviour
  - » Master thesis: studying the behavioural response of women to the use of the colour pink in advertisements directed towards females
- Jul 2008 - Jun 2011
- Bachelor of Science (Honours) - Biochemistry**, University of Delhi
- » First Division (Highest class)
  - » Study emphases: Human physiology, metabolism, immunology, cell biology, molecular biology, genetics
- May 2008
- Rishi Valley School, ISC**
- » Ranked 1<sup>st</sup> in the cohort (science) - graduated with proficiency in Mathematics (94%), Biology (95%), Chemistry (92%) and Physics (86%)

## RESEARCH EXPERIENCE

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- Oct 2018 to present
- Doctoral Candidate - Neuroscience, University of Melbourne**
- » Studying the effects of early adverse experiences on brain development and mental health during childhood and adolescence
  - » Supervisors: A/Prof. Sarah Whittle, A/Prof. Andrew Zalesky
- Jul 2021 to present
- Research Assistant**, Melbourne Children's Research Institute
- » Systematic review the association between school connectedness and depression and anxiety during adolescence for the Wellcome Trust
  - » Supervisors: Prof. Susan Sawyer, Prof. George Patton, Dr. Monika Raniti
- Jan 2018 - Jun 2018
- Master Thesis**
- » Studied synaptic plasticity at CA3-CA3 recurrent collaterals *in vivo*.
  - » Techniques: *in vivo* patch-clamp electrophysiology, optogenetics, stereotaxic surgery, immunohistochemistry. Supervisor: Prof. Christophe Mulle and Dr. Ashley Kees (IINS, CNRS).
- Jan 2017 - Jun 2017
- Master Thesis**
- » Studied the effect of the restoration of the sleep/wake cycle, by antagonising the orexinergic system, on the cognitive and motor capabilities of mouse model of Huntington's disease. Supervisor: A/Prof. Yoon H. Cho (INCIA, CNRS).

## PUBLICATIONS

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- 2021
- [*under review*] **Rakesh, D.**<sup>1</sup>, Whittle, S<sup>1</sup>... ENIGMA consortium. The role of educational attainment and brain morphology in major depressive disorder: findings from the ENIGMA Major Depressive Disorder consortium, *Journal of Abnormal Psychology*
- 2021
- [*in submission*] Whittle, S., Pozzi., E., **Rakesh, D.**, ... Vijayakumar, N. Associations between dysfunctional discipline, brain structure, and risk for depression during childhood
- 2021
- Rakesh, D.**, Whittle, S., Socioeconomic status and the developing brain - a systematic review of neuroimaging findings in youth. *Neuroscience and Biobehavioral Reviews* [*in press*]
- 2021
- Rakesh, D.**, Zalesky, A., Whittle, S., (2021). Similar but distinct-Effects of different socioeconomic indicators on resting state functional connectivity: findings from the Adolescent Brain Cognitive Development (ABCD) Study<sup>®</sup>. *Developmental Cognitive Neuroscience*, 101005.

- 2021 **Rakesh, D.**, Cropley, V., Zalesky, A., Vijayakumar, N., Allen, N. B., & Whittle, S., (2021). Neighborhood disadvantage and longitudinal brain-predicted-age trajectory during adolescence. *Developmental Cognitive Neuroscience*, 101002.
- 2021 **Rakesh, D.**, Allen, N. B., & Whittle, S., Longitudinal changes in within-salience network functional connectivity mediate the relationship between childhood abuse and neglect, and mental health during adolescence, *Psychological Medicine [in press]*
- 2021 **Rakesh, D.**, Seguin, C., Zalesky, A., Cropley, V., & Whittle, S. Associations between neighborhood disadvantage, resting-state functional connectivity, and behavior in the Adolescent Brain Cognitive Development (ABCD) Study®: Moderating role of positive family and school environments, *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging [in press]*
- 2021 **Rakesh, D.**<sup>1</sup>, Bastin, C.<sup>1</sup>, Harrison, B. J., Davey, C. G., Allen, N. B., Muller, S., & Whittle, S. (2021). Feelings of shame and guilt are associated with distinct neural activation in youth. *Biological Psychology*, 159, 108025.
- 2020 **Rakesh, D.**, Kelly, C., Vijayakumar, N., Zalesky, A., Allen, N. B., & Whittle, S. (2020). Unraveling the consequences of childhood maltreatment: deviations from typical functional neurodevelopment mediate the relationship between maltreatment history and depressive symptoms. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 6(3), 329-342
- 2020 **Rakesh, D.**, Lv, J., Zalesky, A., Allen, N. B., Lubman, D. I., Yücel, M., & Whittle, S. (2021). Altered resting functional connectivity patterns associated with problematic substance use and substance use disorders during adolescence. *Journal of Affective Disorders*, 279, 599-608.
- 2020 **Rakesh, D.**<sup>1</sup> & Díaz-Arteche, C.<sup>1</sup> (2020). Using neuroimaging to predict brain age: insights into typical and atypical development and risk for psychopathology. *Journal of Neurophysiology*, 124(2), 400-403.
- 2020 Pozzi, E.<sup>1</sup>, Vijayakumar, N.<sup>1</sup>, **Rakesh, D.**, & Whittle, S. (2021). Neural Correlates of Emotion Regulation in Adolescents and Emerging Adults: A Meta-analytic Study. *Biological Psychiatry*, 89(2), 194-204.
- 2020 **Rakesh, D.**, Allen, N. B., & Whittle, S. (2020). Balancing act: Neural correlates of affect dysregulation in youth depression and substance use-A systematic review of functional neuroimaging studies. *Developmental cognitive neuroscience*, 42, 100775.
- 2020 **Rakesh, D.**, Fernando, K. B., & Mansour L, S. (2020). Functional dedifferentiation of the brain during healthy aging. *Journal of neurophysiology*, 123(4), 1279-1282.
- 2019 Cabanas, M., Pistono, C., Puygrenier, L., **Rakesh, D.**, Jeantet, Y., Garret, M., & Cho, Y. H. (2019). Neurophysiological and behavioral effects of anti-orexinergic treatments in a mouse model of Huntington's disease. *Neurotherapeutics*, 16(3), 784-796.
- 2019 Cabanas, M., Piquemal, M., Pistono, C., Arnaud, S., **Rakesh, D.**, Poinama, E., ... & Cho, Y. H. (2020). Correlations between mutant huntingtin aggregates and behavioral changes in R6/1 mice. *Journal of Huntington's disease*, 9(1), 33-45.

<sup>1</sup>Co-first authors

## MANUSCRIPTS IN PREP

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- 2021 **Rakesh, D.**, Zalesky, A., Whittle, S., 'Associations between school environment, brain structure and connectivity, and cognition and mental health: A multi-modal investigation'
- 2021 **Rakesh, D.**, Zalesky, A., Whittle, S., 'The independent and interactive effects of different socioeconomic indicators on brain structure'
- 2021 **Rakesh, D.**, Bastin, C., Harrison, B. J., Davey, C. G., Allen, N. B., Muller, S., & Whittle, S., 'Neurobiological basis of guilt and shame in youth MDD'
- 2021 Thomas, M., **Rakesh, D.**, Whittle, S., Upthegrove, R., Sheridan, M., Cropley, V. 'The neural, stress hormone and inflammatory correlates of childhood deprivation and threat in psychosis: A systematic review.'
- 2021 Jameei, H., **Rakesh, D.**, ... Di Biase, M. 'Linking MRI brain indices to polygenic risk for schizophrenia: a systematic review'
- 2021 Pozzi, E., **Rakesh, D.**, ... Whittle, S., 'Parenting and functional connectivity development in children'

2021	Raniti, M., <b>Rakesh, D.</b> , Patton, G., Sawyer, S. 'School connectedness and depression and anxiety during adolescence - a systematic review of prospective studies'
2021	Flournoy, J., <b>Rakesh, D.</b> , Byrne, M. 'Exclusions threaten inference in ABCD'
2021	Zhang, L., <b>Rakesh, D.</b> , ... Whittle, S. 'A systematic review of the link between the brain and resilience function in childhood and adolescence'
2021	Elzeiny, R., <b>Rakesh, D.</b> , ... Whittle, S. 'A longitudinal study of childhood maltreatment, subcortical development and subcortico-cortical structural maturational coupling from early to late adolescence'

## HONOURS AND AWARDS

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June 2021	<b>'People's Choice Award'</b> , Australian Society for Social and Affective Neuroscience (AS4SAN) annual YouTube competition
Dec 2020	<b>'Best Oral Presentation Award'</b> (PhD student category), Department of Psychiatry Annual Research Symposium, University of Melbourne
Dec 2020	<b>'Best Abstract Award'</b> , Mental Health PhD Program Annual Conference, University of Melbourne
Dec 2020	<b>Society for Biological Psychiatry (SOBP) Predoctoral Travel Fellowship (\$2000 stipend + waived registration fees for three years)</b> . Awarded based on past excellence in scholarly work, potential for scholarly growth in biological psychiatry and clinical neuroscience, and overall excellence.
Sep 2020	<b>Velma Stanley Award (\$2500)</b> for paper entitled 'Altered whole-brain functional connectivity patterns associated with substance use disorders and problematic substance use during adolescence'. Awarded annually by the University of Melbourne on essays/papers on substance use.
Feb 2020	<b>Graham Burrows Travel Scholarship (\$4500)</b> - awarded by the University of Melbourne to one student annually.
Oct 2019	<b>'Best Poster Presentation Award'</b> , Biological Psychiatry Australia, 2019
Aug 2019	<b>'Best Poster Presentation Award'</b> , Department of Psychiatry Annual Research Symposium, University of Melbourne
May 2019	<b>Nick Christopher Scholarship (\$6000p.a. *3 years)</b> , awarded by the University of Melbourne to two highest ranked incoming PhD students in the Melbourne Medical School
Nov 2018	<b>Rowden White Scholarship (\$6500)</b> , awarded by the University of Melbourne to talented, high quality PhD students.
Jun 2018	<b>Ranked 1<sup>st</sup> in the program (Dux)</b> - Masters by Research, Neuroscience
Jun 2018	<b>'Best Oral Presentation Award'</b> at 'International Scientific Day', the annual student symposium (organised by the Neuroscience in Bordeaux Association)
May 2018	<b>Melbourne Research Scholarship (\$69,000p.a. * 3.5 years)</b> - full fee remission of \$39,000p.a. + \$30,000p.a. living allowance) awarded to high achieving PhD students.
May 2018	<b>Trinity College Dublin PhD Studentship Award (€21,000p.a. * 3 years)</b> - full fee remission of €14,500p.a. + €6500p.a. living allowance), awarded to high achieving PhD students *Declined in order to accept the MRS

## CONFERENCE PRESENTATIONS

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Sep 2021	<b>Poster</b> Presentation at <b>FLUX Congress</b> [upcoming]
Jun 2021	<b>Invited to lead a workshop on functional connectivity methods</b> at AS4SAN (Australian Society for Social and Affective Neuroscience)
Jun 2021	<b>Symposium presentation (oral)</b> at Biological Psychiatry Australia Virtual Symposia Series
Jun 2021	<b>Oral</b> presentation at AS4SAN (Australian Society for Social and Affective Neuroscience) [upcoming]
Apr 2021	<b>Poster</b> Presentation at <b>Society for Biological Psychiatry (SOBP)</b>
Dec 2020	<b>Oral</b> presentation at Medicine Dentistry and Health Sciences (MDHS) Graduate Research Conference and Mental Health PhD Program Annual Conference
Nov 2020	<b>Oral</b> presentation at Department of Psychiatry Annual Symposium
Oct 2020	<b>Oral</b> presentation at Biological Psychiatry Australia (BPA) 2020
Sep 2020	<b>Oral</b> presentation at <b>FLUX Congress</b>
Jun 2020	<b>Poster</b> Presentation at <b>Organization for Human Brain Mapping (OHBM)</b>

Nov 2019	<b>Symposium presentation (oral)</b> at Society for Mental Health Research (SMHR) 2019, and
Oct 2019	<b>Symposium presentation (oral)</b> at Australian Cognitive Neuroscience Society (ACNS) 2019
Oct 2019	<b>Oral</b> presentation at Students of Brain Research Annual Symposium (SOBR) 2019
Oct 2019	<b>Poster</b> presentations at Biological Psychiatry Australia 2019
Aug 2019	<b>Poster</b> presentations at The University of Melbourne Psychiatry Symposium 2019
May 2017	<b>Poster</b> presentation at NeuroFrance 2017

## TEACHING AND SUPERVISION

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2019-Present	<b>Teaching Associate</b> , Biological Psychology and Cognitive Psychology, Melbourne School of Psychological Sciences, University of Melbourne
2021	<b>Co-supervisor of two year-long honours research projects</b> on the association between adversity, brain development, and mental health
2019	<b>Co-supervisor</b> of 1) year-long honours research project on examining aberrations in whole-brain functional connectivity in subclinical psychosis and 2) 6-month Master's thesis on the neural correlates of guilt and shame, University of Melbourne

## MEDIA AND PUBLIC OUTREACH

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2021	<i>[under review]</i> <b>Article for Frontiers for Young Minds</b> - 'How the neighborhoods we grow up in shape our brains, and why home and school environments matter'
2021	<b>Press release</b> by Biological Psychiatry: CNNI
2021	<b>Radio Interview: 3CR</b> (Radical Philosophy), ' <i>Shaping children's brains</i> '
2021	<b>Article in 'The Conversation'</b> , <u>Growing up in a rough neighbourhood can reshape kids' brains – but good parenting and schooling can help (&gt; 20,000 reads)</u>
2021	<b>Radio Interview: RRR 102.7FM</b> , Featured on Einstein a go-go's 20PhDs20Minutes
2020	<b>News Article</b> , Pursuit Magazine, " <u>The Legacy of Maltreatment on the Brain</u> "

## PROFESSIONAL EXPERIENCE

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Nov 2015 - Aug 2016	<b>Manager - Marketing</b> , Nykaa, Mumbai <ul style="list-style-type: none"> <li>» Analysing market research data and digital consumer behaviour</li> <li>» Launch of the Nykaa private label and formulating the IMC</li> </ul>
Jul 2013 - Nov 2015	<b>Assistant Manager - Marketing</b> , L'Oréal <ul style="list-style-type: none"> <li>» Responsible for all brand growth targets and brand financials for Vichy, India</li> <li>» Understanding and analysing market research data</li> <li>» Conducted consumer panels, focus group discussions and other research to derive consumer insights</li> <li>» Designed and implemented a 360° Integrated Marketing Campaign</li> </ul>

## POSITIONS OF RESPONSIBILITY

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2021-present	<b>Higher Degree by Research Course Review Panel Member</b> , University of Melbourne
2021-present	<b>Department of Psychiatry Research Committee member</b> , University of Melbourne
2020-2022	<b>Academic Board's Higher Degrees by Research Committee member</b> - member of a senior university committee that makes decisions on HDRs, University of Melbourne

2019-2020	<b>Academic Board's Academic Programs Committee member</b> - member of a senior university committee that makes decisions on academic programs, University of Melbourne
2019-2020	<b>Executive Committee Member</b> , Students of Neuropsychiatry Research (SONR) graduate group, <b>University of Melbourne</b>
2011-2013	<b>Senior Editor and President</b> , Literary Committee, <b>MICA, Ahmedabad, India</b>
2010- 2011	<b>Vice President</b> , English Debating Society, SVC, <b>University of Delhi</b> <b>Editor in Chief</b> , Science Magazine, ' <i>Expressions</i> ', SVC, <b>University of Delhi</b>

## EXTRA-CURRICULAR ACTIVITIES

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### Internships and Volunteer Work

July 2017 - Aug 2017	<b>Intern</b> , with Dr. Anil Kumar (M.D. Psychiatry) » Assisted in assessing patients and acquiring history
Dec 2014 - Apr 2015	<b>Mentor</b> , Green Batti Project, Mumbai » Mentored a child from an underprivileged background through academic and personal difficulties
Apr 2012 - Jun 2012	<b>Intern</b> , L'Oréal, Mumbai » Studied online behaviour of L'Oréal consumers in order to devise a strategy
Dec 2010 - Apr 2011	<b>Education Volunteer</b> , Naz Foundation, Delhi » Taught children with HIV and conducted AIDS awareness campaigns
May 2009	<b>Intern</b> , C.A.R.E (Cooperative for Assistance and Relief Everywhere) » Rural health initiative to implement the Integrated Child Development Scheme (ICDS), a centrally sponsored scheme to ensure proper growth and development of children in rural, tribal and slum areas of rural Jharkhand, India.
June 2009	<b>Rural auditor</b> , M.N.R.E.G.A under Jean Dreze » Raised awareness about 'Right to Employment', minimum wage and the Mahatma Gandhi National Rural Employment Guarantee Act, and audited the scheme's implementation while living in rural Jharkhand, India
<b>Skills</b>	<b>MATLAB, Python, R</b> , Microsoft Excel, Prism, Adobe Illustrator, Adobe Indesign, Adobe Lightroom
<b>Interests and Activities</b>	Portrait photography, debating, writing poetry, yoga, mridangam, bird-watching, reading, handball, Carnatic vocals
<b>Languages</b>	English (native), Hindi (native), French (B2), Bengali (B1), Urdu (B2)