

Curriculum Vitae

MD. TAUFIQ NASSEEF

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Post-doctoral Fellow

Douglas Brain Imaging Centre

McGill University

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Verdun, QC H4H 1R3, Montreal, Canada

Address: Apartment no 1210, 2055, Saint Mathieu, Montreal,
Canada, H3H2J2

Research Interest:

- Computational Neuroscience
- Brain connectivity
- Neuronal Signal & Image Processing
- Neurodegenerative Disease
- Mathematical Neuroscience
- Brain MRI

Education:

- Ph.D.** Cognitive and Brain Sciences, Center for Mind and Brain Sciences (CiMeC), University of Trento, Rovereto, Italy, December 2015 [Thesis Title: Measuring directed functional connectivity in mouse fMRI networks using Granger Causality]
- M. Sc.** Mathematics and its applications, School of Mathematics, Statistics and Actuarial Science University of Kent, Canterbury Campus, UK, October 2012 [Dissertation Topic: Counting Symmetries]
- M. Sc.** Mathematics, Jahangirnagar University (JU), Savar, Dhaka, Bangladesh, 1st Class, April 2007.
[Thesis Title: A study of solvable groups]
- B. Sc.** Mathematics, Jahangirnagar University (JU), Savar, Dhaka, Bangladesh, 1st Class, March 2005.

Research outcomes:

Journal papers:

- **Md Taufiq Nasseef**, Gabriel A. Devenyi, Anna E. Mechling, Laura-Adela Harsan, M. Mallar Chakravarty, Brigitte Lina Kieffer & Emmanuel Darcq, Deformation-based morphometry MRI reveals brain structural modifications in living mu opioid receptor knockout mice, accepted, Front. Psychiatry-Psychopharmacology, 2018
- Aliza T Ehrlich, Grégoire Maroteaux, Anne Robe, Lydie Venteo, **Md. Taufiq Nasseef**, Leon C van Kempen, Naguib Mechawar, Gustavo Turecki, Emmanuel Darcq and Brigitte L Kieffer, Expression map of 78 brain-expressed mouse orphan GPCRs provides a translational resource for neuropsychiatric research, Communications Biology, Vol. 1, Issue 1, Pages 102, July 2018,
- Sami Ben Hamida, Tanzil Mahmud Arefin, Sueli Netto, **Md. Taufiq Nasseef**, Nelson, Laura-Joy Boulos, Aliza Ehrlich, Michael McNicholas, Luc Moquin, Alain Gratton, Emmanuel Darcq, Rafael Maldonado, Harsan Laura Adela and Brigitte Lina Kieffer, "Increased alcohol seeking in mice lacking Gpr88 involves dysfunctional addiction networks", Biological psychiatry, Volume 84, Issue 3, Pages 202–212, August 1, 2018
- Pauline Charbogne, Olivier Gardon, Elena Martín-García, Helen L Keyworth, Aya Matsui, Anna E Mechling, Thomas Bienert, **Md Taufiq Nasseef**, Anne Robé, Luc Moquin, Patricia Robledo, Audrey Matifas, Katia Befort, Claire Gavériaux-Ruff, Laura-Adela Harsan, Dominik Von Everfeldt, Jorgen Hennig, Alain Gratton, Ian Kitchen, Alexis Bailey, Veronica A Alvarez, Rafael Maldonado, Brigitte L Kieffer, Mu opioid receptors in GABAergic forebrain neurons regulate heroin and food seeking, Biological psychiatry, Volume 81, Issue 9, Pages 778–788, May 2017
- **Md Taufiq Nasseef**, Commutator properties and relative theories in communication with solvable groups, Pulsus Journal of Pure and Applied Mathematics, Vol 2, No 2, Page 18-21, August, 2018
- **Md Taufiq Nasseef**, "Field Extension by Galois Theory", General Letters in Mathematics, Vol. 3., No. 3, Page 132-153, e-ISSN 2519-9277, p- 2519-9269, Dec 2017
- **Md Taufiq Nasseef**, "Counting Symmetries with Burnside's Lemma and Polya's Theorem", European Journal of Pure and Applied Mathematics, Vol. 9, No. 1, Page: 84-113, ISSN 1307-5543, 2016
- **Md Taufiq Nasseef**, Emmanuel Darcq, Praveen Kulkarni, Jai Puneet Singh, Aliza Ehrlich, Weiya Ma, Criag F. Ferris & Brigitte L. Kieffer, 'Oxycodone activation of Mu opioid receptors induces on target reduction on whole brain functional connectivity in mice', under review.
- Laura-Joy Boulos, **Md. Taufiq Nasseef**, Michael McNicholas, Anna Mechling, Laura Adela Harsan, Emmanuel Darcq, Sami Ben Hamida and Brigitte Lina Kieffer, TouchScreen-based phenotyping: altered stimulus/reward association and lower perseveration to gain a reward in mu opioid receptor knockout mice, under review

- **Md Taufiq Nasseef**, Adam Liska, Stefano Panzeri, Alessandro Gozzi, ‘Directional functional connectivity in the mouse brain’, under review
- **Md Taufiq Nasseef**, Emmanuel Darcq, Waiya Ma, Jai Puneet Singh, Naoki Dozono, Kevin Lancon, Philippe Seguela, Hiroshi Ueda & Brigitte L. Kieffer, Reduced brain functional connectivity induced by generalized pain identified by mice rs-fMRI, in preparation

Books:

- **Md Taufiq Nasseef**, “Counting Symmetries”, ISBN 978-3-659-40626-3, LAP LAMBERT Academic Publishing, Saarbrücken, Germany, total pages 80, May 2013.
- **Md Taufiq Nasseef**, “A Study of Solvable Groups”, ISBN: 978-3-659-40656-0, LAP LAMBERT Academic Publishing, Saarbrücken, Germany, total pages 64, May 2013.

Conference/Workshop/Extended Abstract:

- **Md Taufiq Nasseef**, Emmanuel Darcq, Aliza Ehrlich, Alex Ing, Gunter Schumann & Brigitte L Kieffer, A Single Nucleotide Polymorphism of the mu opioid receptor gene alters resting state functional connectivity in humans, sixth Biennial conference in resting state and brain connectivity, Montreal, Canada, 26th – 28th September 2018
- Emmanuel Darcq, **Md Taufiq Nasseef**, Lola Welsch, Jai Puneet Singh, Praveen Kulkarni & Brigitte L. Kieffer, On Target effects of Mu opioid receptor activation by Oxycodone on whole brain functional connectivity identified by mouse fMRI, sixth Biennial conference in resting state and brain connectivity, Montreal, Canada, 26th – 28th September 2018
- Jai Puneet Singh, **Md Taufiq Nasseef**, Lola Welsch, Weiya Ma, Emmanuel Darcq, Brigitte Lina Kieffer, Mouse fMRI analysis of morphine effects on whole brain activity: functional connectivity signature under two different anaesthetics, sixth Biennial conference in resting state and brain connectivity, Montreal, Canada, 26th – 28th September 2018
- **Md Taufiq Nasseef**, Emmanuel Darcq, Jai Puneet Singh, Praveen Kulkarni & Brigitte Kieffer, Oxycodone BOLD activation and connectivity signature by Mu opioid receptor in anaesthetized mice fMRI, International Society for Magnetic Resonance in Medicine (ISMRM), Joint (ISMRM-ESMRMB) annual meeting, Paris, USA, 16-21 June, 2018
- Emmanuel Darcq, **Md Taufiq Nasseef**, Praveen Kulkarni & Brigitte Kieffer, On target effects of Mu opioid receptor activation on brain activity and connectivity identified by mouse fMRI, International Narcotics Research Conference 2017 (INRC): The Study of Opioids, Chicago, Illinois, USA, July 2017
- **Md Taufiq Nasseef**, Emmanuel Darcq, Gabriel Devenyi, Jacob Ellegood, Jason Lerch, Mallar Chakravarty, Brigitte Kieffer, Identification of structural neuroadaptation dependent of MOR by in-vivo and ex-vivo MRI, Douglas research day 2017, Douglas hall, 2nd June 2017 (Selected for the prize-winning competition)
- **Md Taufiq Nasseef**, Emmanuel Darcq, Praveen Kulkarni & Brigitte Kieffer, Mu opioid receptor activation signatures on brain activity and connectivity by fMRI in mice, International Society for Magnetic Resonance in Medicine (ISMRM), 25th meeting, Hawaii, USA, April 2017
- **Md Taufiq Nasseef**, Emmanuel Darcq, Pauline Charbogne, Anna E. Mechling, Laura-Adela Harsan & Brigitte Kieffer, Rs-fMRI directional connectivity is modified in conditional mice lacking the mu opioid receptor gene in striatal neurons, Society for Neuroscience (SfN), San Diego, California, USA, November 12-16, 2016
- Emmanuel Darcq, **Md Taufiq Nasseef**, Jame Near & Brigitte Kieffer, On Target effect of Mu opioid receptor activation identified by mouse rsfMRI and Spectroscopy, Society for Neuroscience (SfN), San Diego, California, USA, November 12-16, 2016
- **Md Taufiq Nasseef**, Emmanuel Darcq, Pauline Charbogne, Anna E. Mechling, Laura-Adela Harsan & Brigitte Kieffer, The role of mu opioid receptor in directional information flow by Granger Causality, Douglas research day 2016, Douglas hall, 10th June, 2016 (Selected for the prize winning competition)
- Daniel Guterrez, **Taufiq Nasseef**, Adam Liska, Stefano Panzeri & Alessandro Gozzi, Intrinsic directional connectivity in large-scale functional networks of the mouse brain, fifth Biennial conference in resting state and brain connectivity, Vienna, Austria, 21st – 23rd September 2016
- **Md Taufiq Nasseef**, Adam Liska, Stefano Panzeri & Alessandro Gozzi, Directed connectivity in the mouse fMRI networks, International Society for Magnetic Resonance in Medicine (ISMRM), 24rd meeting, Singapore, 7th May-13th May, 2016
- **Md Taufiq Nasseef**, The dynamics of counting symmetries, 6th International Conference on Applied Physics and Mathematics (ICAPM 2016), Singapore, January 13-14, 2016
- **Md Taufiq Nasseef**, Adam Liska, Stefano Panzeri & Alessandro Gozzi, Mapping effective connectivity in the mouse brain using Granger causality, International Society for Magnetic Resonance in Medicine (ISMRM), 23rd meeting, Canada, 30th May-05th June, 2015

- **Md Taufiq Nasseef**, Adam Liska, Stefano Panzeri & Alessandro Gozzi, Directed functional connectivity mapping in the mouse brain, International Society for Magnetic Resonance in Medicine(ISMRM), Italian Chapter 2015 Annual Meeting, Verona, Italy, 16th-17th April 2015
- **Md Taufiq Nasseef**, Stefano Panzeri & Alessandro Gozzi, Analysing Resting-state Directed Functional connectivity in mice, DS Day 2013, University of Trento, 20th June 2014

Editorial Board Member/Reviewer/Judge:

- Editorial Board Member, Scholar Journal of Applied Sciences and Research, InnoVationinfo
- Reviewer, General Letters in Mathematics (GLM), Refaad
- Reviewer, Journal of Pure and Applied Mathematics, Pulsus
 - IEEE Region 10 Humanitarian Technology Conference (IEEE R10HTC 2017), 21-23 December 2017, Dhaka, Bangladesh
 - IEEE International WIE Conference on Electrical and Computer Engineering (Wiecon-ECE 2016), 19-21 December 2016, Pune, India
 - IEEE International WIE Conference on Electrical and Computer Engineering (Wiecon-ECE 2015), 19-21 December 2015, Dhaka, Bangladesh
- Judge, Douglas Undergraduate Research Expo 2017, 17th August 2017, Douglas hall basement, Douglas Mental Health University Institute, Montreal, Canada
- Judge, Douglas Undergraduate Research Expo 2016, 18th August 2016, Douglas hall basement, Douglas Mental Health University Institute, Montreal, Canada

Technical Skills:

- Neuroimaging Data Analysis Tools: FSL, AFNI, ITK-SNAP, Mango, ANTs, MIPAV, MINC, MIVA, MAGeT, MBM, pydpiper, pvconv
- Programming Language: Matlab, C, C++, Java
- Matlab Tools: Infotoolbox, Psychtoolbox, wave_clus, BrainVoyager QX, GCCA, MVGC, Gift, SPM12b, Brain connectivity toolbox, fc-toolbox, BioSig toolbox, TS Toolbox, Dynamic EC, NICE, REST, DPABI, BrainNet Viewer
- Statistical Languages: SPSS, R
- Vector graphics software: Inkscape, Adobe Illustrator
- Mathematical Software: Maple
- Microsoft Developer Tool: Visual studio
- Database: MySQL, Microsoft Access
- Query Language: SQL
- Platforms: Windows, Linux
- IDE: NetBeans

Ph.D in CiMeC (University of Trento):

Major Courses: Computational and Statistical Methods, Tools and Methods in Cognitive and Computational Neuroscience (fMRI, EEG, TMS and MEG), Hands on fMRI, Research Skills, Ethics of Research in Neuroscience and fMRI data analysis, Funding Opportunities for young researchers, Present and publish your work

Research works:

- Mapping functional connectivity and directed functional connectivity (Granger causality) in mouse default mode network(DMN) and salience network(SN) from rsfMRI(ongoing)
- To find directed functional connectivity between the two hemispheres of resting state fMRI data in mice with Asymmetry(Difference of cross-correlation), Granger Causality Modeling (GCM) & Dynamic Causal Modeling (DCM) by applying seed-based Component Analysis(SCA)(2nd year)
- Developed a balanced information theoretic calculation (based on shuffling) that could estimate how much information could be gained by state by analyzing Leech nervous system(1st year)

Grants, Scholarships and Awards:

- April 2017, Clinical Stipend, ISMRM 25th Annual Meeting in Honolulu, Hawaii, USA
- 2016-2017: CIC fellowship, McGill University, Montreal, Canada
- 2012-2015: CiMeC Doctoral Scholarship, session, University of Trento, Italy
- 2011-2012: Kent Bursary (Students Finance), session, University of Kent, UK
- 2005-2006: Scholarship for M.Sc, Jahangirnagar University, Bangladesh

- 2002-2004: Scholarship for B.Sc, Jahangirnagar University, Bangladesh
- 1997-1999: Full Scholarship, Pioneer College, Dhaka, Bangladesh

Research Supervision:

2 Master students from Strasbourg University in France (Helene Jamann and Lola Welsch)

Communication Skills:

- English (fluent; both verbal and written)
- Bangla (Mother Tongue)
- Hindi, Urdu and Italian (Basic)

Professional Experience:

- December 2008 - December 2011
Lecturer in Mathematics (Full time),
World University of Bangladesh, Dhaka, Bangladesh
Duties: Actively involved in lecturing and tutoring undergraduate Mathematics courses (Mechatronics Engineering, Electronics and Electrical Engineering & Computer Science & Engineering), advising students.
- July 18, 2008 – February 2012
Lecturer in Mathematics (part time),
Institute of Science Trade & Technology (ISTT), Dhaka, Bangladesh,
Duties: Actively involved in lecturing and tutoring undergraduate Mathematics courses (Electronics and Computer Engineering & Computer Science & Engineering, BBA), advising students, also involved in different administrative roles.

Poster Presentations (Conference and others):

- A Single Nucleotide Polymorphism of the mu opioid receptor gene alters resting state functional connectivity in humans, sixth Biennial conference in resting state and brain connectivity, Montreal, Canada, 26th – 28th September 2018
- Identification of structural neuroadaptation dependent of MOR by in-vivo and ex-vivo MRI, Douglas research day 2017, Douglas hall, 2nd June 2017
- Mu opioid receptor activation signatures on brain activity and connectivity by fMRI in mice, International Society for Magnetic Resonance in Medicine (ISMRM), 25th meeting, Hawaii, USA, April 2017
- Rs-fMRI directional connectivity is modified in conditional mice lacking the mu opioid receptor gene in striatal neurons, Society for Neuroscience (SfN), San Diego, California, USA, November 12-16, 2016
- The role of mu opioid receptor in directional information flow by Granger Causality, Douglas research day 2016, Douglas hall, 10th June, 2016
- Directed functional connectivity mapping in the mouse brain, International Society for Magnetic Resonance in Medicine (ISMRM), Italian Chapter 2015 Annual Meeting, Verona, Italy, 16th-17th April, 2015
- Analyzing Resting-state Directed Functional connectivity in mice, DS Day 2013, University of Trento, 26th September, 2014

Invited Talks, Seminars & Presentations (Other than conference):

- Rodents fMRI BOLD activation and connectivity with Opioid drug, Alkermes (A global biopharmaceutical company) invited meeting, Waltham, Massachusetts, USA, 27th September, 2017
- Directed functional connectivity in the mouse fMRI, seminar, dept. of Mathematics, Jahangirnagar University, Dhaka, Bangladesh, 20th December, 2016
- Measuring directed functional connectivity in the mouse rsfMRI networks using Granger Causality, CIC Special Lecture, Perry E3517, Douglas Research Center, Montreal, Canada, 26th January, 2016
- Directed functional connectivity mapping in the mouse salience and default mode network, Brigitte Kieffer Lab Presentation, CIC seminar room, Douglas Research Center, Montreal, Canada, 15th January, 2016
- Directed functional connectivity mapping in the mouse salience and default mode network, Neural computation Lab Presentation, seminar room 3^o floor, Palazzo Fedrigotti, Corso Bettini 31, Rovereto, University of Trento, 24th April, 2015
- Mapping directed influence over the brain using Granger causality of fMRI, IIT MRI lab Presentation, seminar room 3^o floor, Palazzo Fedrigotti, Corso Bettini 31, Rovereto, University of Trento, 13th June, 2014

- Combination Transcranial Magnetic Stimulation and Electroencephalography May Contribute to Assess the Severity of Alzheimer's Disease, TMS Presentation, Mattarello, University of Trento, 12th March, 2013
- Commutators with Solvable Groups, Mathematical Inquiry and Communication Presentation, 16th February, 2012
- A Study of Solvable Groups, Previous Thesis Presentation, invited by Tutor, University of Kent, 26th January, 2012

Professional Activities:

- Member of ISMRM(International Society for Magnetic Resonance in Medicine) 2017
- Member of SfN(Society for Neuroscience) 2016
- Member of IIT (Italian Institute of Technology) <http://cnscs.iit.it/people/iit-unitn/fellow-phd/taufiq-nasseef.html>
- Member of Organization for Computational Neuroscience (OCNS), 2885 Sanford Ave SW #15359 Grandville, MI 49418, USA
- Member of SMSAS- Mathematics Group, University of Kent, UK

Conference/Workshop (Attended):

- Sixth Biennial Conference on Resting State and Brain Connectivity, Montreal, Canada, 2018
- The Virtual Brain (TVB) Node#7 workshop, Montréal Neurological Institute (MNI), Canada, August 7-8, 2018
- International Society for Magnetic Resonance in Medicine(ISMRM), 25th meeting, Hawaii, USA, April 2017
- Society for Neuroscience(SfN), San Diego, California, USA, November 12-16, 2016
- CRBLM Workshop, Seed-based analysis of resting state (SeeBARS), the Rabinovitch House (3640, de la Montagne), Montreal, Canada, 12th February, 2016
- Rovereto Attention Workshop (RAW) 2015, Palazzo Piomarta (istruzione), corso Bettini 84 Rovereto (TN) – Italy, 5-8th November, 2015
- 9th annual Rovereto workshop on Concepts, Actions and Objects (CAOs) 2015, Palazzo Piomarta (istruzione), corso Bettini 84 Rovereto (TN) – Italy, 7-10th May, 2015
- International Society for Magnetic Resonance in Medicine(ISMRM), Italian Chapter 2015 Annual Meeting, Palazzo Gran Guardia, Piazza Bra, Verona, Italy, 16th-17th April, 2015
- Rovereto Workshop on Cognition and Evolution(CogFvo) 2014, Palazzo Piomarta (istruzione), corso Bettini 84 Rovereto (TN) – Italy, 7-9th July, 2014
- 8th annual Rovereto workshop on Concepts, Actions and Objects (CAOs) 2014, Palazzo Piomarta (istruzione), corso Bettini 84 Rovereto (TN) – Italy, 8-11th May, 2014
- Rovereto Attention Workshop (RAW) 2013, Palazzo Piomarta (istruzione), corso Bettini 84 Rovereto (TN) – Italy, 24-26th October, 2013
- 7th annual Rovereto workshop on Concepts, Actions and Objects (CAOs) 2013, Palazzo Piomarta (istruzione), corso Bettini 84 Rovereto (TN) – Italy, 23-26th May, 2013

Summer School:

- CNSII School on Neurotechniques 2014, the toolbox for investigating the function if neural circuits, 10th-14th March,2014, University of Padova, Italy (<http://www.cyberrrat.eu/school.php>)

Extra Co-Curricular Activities:

- Active member of Bangladeshi students University of Trento, Trento, Italy
- Member of Kent Union, University of Kent, Kent, UK
- Former Computer Lab Instructor, Institute of Science Trade & Technology (ISTT) (An affiliated University level Institute under National University), Dhaka, Bangladesh
- Former Hardware Administrator, Kamaluddin Hall Computer Users' Forum (KUCUF) & Math Department, Jahangirnagar University, Dhaka, Bangladesh

Personal Memoranda:

- Date of birth: October 14, 1982.
- Nationality: Bangladeshi (by birth).
- Religion: Islam
- Marital Status: Married
- Permanent Address: 37/4(1st Floor), Block F,
Jahuri Mohallah, Joint
Quarter, Mohammadpur, Dhaka-1207,
Bangladesh

References:

- | | | |
|---|--|---|
| <ul style="list-style-type: none">• Brigitte Kieffer (Supervisor)
Professor,
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Academic Associate,
Douglas Hospital Research
Center, Dept. of Psychiatry,
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emmanuel.darcq@douglas.mcgill.ca | <ul style="list-style-type: none">• M. Mallar Chakravarty
Assistant Professor,
Douglas Hospital Research
Center, Dept. of Psychiatry,
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