Baptiste Couvy-Duchesne

Researcher

Contact

Paris Brain Institute,
Hôpital Pitié Salpêtrière, 47 Boulevard de l'Hôpital,
75013 Paris, France
baptiste.couvy@icm-institute.org
b.couvyduchesne@uq.edu.au

Metrics

45+ peer-reviewed articles
incl. 12 as first author
4984 citations
h-index: 22
i10-index: 38

IT

Statistical
R (incl. OpenMx), gcta, PLINK, SAS
Languages
R, Bash, SQL, Matlab, JAVA, Python

Languages

French Mother tongue
English Full professional proficiency
Spanish Limited working proficiency
Italian Elementary proficiency

Work and Education

2021-now Inria starting faculty position — Paris Brain Institute, Paris, France
New methods for the analysis of big-data neuroimaging

2021 CNRS post-doctorate researcher — Paris Brain Institute, Paris, France
New methods for the analysis of big-data neuroimaging

2019–now NHMRC Early career fellowship — Paris Brain Institute, Paris, France
Multi-modal MRI analysis of psychiatric and neurological disorders, from brain markers to prediction

2017–2019 Post-Doctorate Researcher in human genetics — Institute for Molecular Bioscience, the University of Queensland, Brisbane, Australia
Brain MRI images and genetics of complex traits

2013–2017 PhD in Neuroimaging genetics — Queensland Brain Institute, The University of Queensland (UQ), Brisbane, Australia
Breaking down the genetics of Major Depressive Disorder using brain imaging endophenotypes

2009–2012 Master of Science in Statistics equivalent "*Diplome d'Ingénieur* " — National School for Statistics and Information Analysis (ENSAI), Rennes, France
Specialisation in Biostatistics

2011–2012 Master of Science in Epidemiology — Faculty of Health, University of Rennes 1, France
Dual degree with additional education focused on scientific research

Talks and Posters

2021 Association and prediction of phenotypic traits from neuroimaging data using a multi-component mixed model excluding the target vertex
CONFERENCE PRESENTATION, SPIE Medical Imaging, (online)

2020 Linear Mixed Models minimise false positive rate and enhance precision of mass-univariate vertex-wise analyses of grey-matter
POSTER, Organisation for Human Brain Mapping (OHBM), (online)
POSTER, International Symposium on Biomedical Imaging, Iowa (online)

2019 Widespread associations between grey-matter structure and the human phenome
CONFERENCE PRESENTATION, UK Biobank conference, London, UK

2018 CONFERENCE PRESENTATION, GENEMAPPER conference, Noosa, Australia
CONFERENCE PRESENTATION, Imaging @ Brisbane, Australia

2017 Multi-Instrument Mendelian Randomisation
INVITED SPEAKER, International Congress of Twin Studies, Madrid, Spain

2017 Inter-individual cortical and subcortical similarity is associated with differences in psychiatric, cognition and socio-economic traits
POSTER, World Congress in Psychiatry Genetics, Orlando, Florida

2016 Power of multivariate GWAS: real case scenarios using brain phenotypes from MRI
CONFERENCE PRESENTATION, Behavioural Genetics Association, Brisbane, Australia

2015 Non-linear association of anxiety-depression (SPHERE) score with cortical surface and surface area
CONFERENCE PRESENTATION, Behavioural Genetics Association, San Diego, California
POSTER, American Society of Human Genetics, Baltimore, MD

2014 Depression / Anxiety and somatoform trajectories across adolescence in relation with later diagnosis of Major Depressive Disorder: a longitudinal twin study
POSTER, World Congress of Psychiatry Genetics, Copenhagen, Denmark

2012 Heritability of resting-state functional connectivity with Broca's language area
POSTER, GENEMAPPER conference, 2012, Port Douglas, Australia

Grants, Scholarships and Awards

2021	EU Joint Program – Neurodegenerative Disease Research	3 years grant funding
2019	3rd best age prediction from MRI images	Predictive Analytics Competition
2019	UK Biobank early career researcher award (runner-up)	UK Biobank conference
2018	Early career fellowship (CJ. Martin)	National Health and Medical Research Council
2018	Best lightening talk	GENEMAPPERS
2017	Early Career Investigator Award	World Congress of Psychiatry Genetics
2016	QBI postgraduate conference, best exit seminar	Queensland Brain Institute
2015	Thompson Award, Best student presentation	Behavioural Genetic Association
2015	Bursary	PGC Analyst Training Summer School
2015	GSITA travel scholarship	UQ Graduate School
2015	Conference Travel Award	Behavioural Genetic Association
2014	International Travel Award	School of Psychology
2013	PhD living stipend and fee waiver	UQ International Scholarship
2012	Excellence scholarship of the Brittany region	"Bourse ULYSSE pour l'international"

Supervision

2021 Co-supervision of PhD student — Paris, France
study of incomplete Hippocampal Inversion

2021 Supervision of Master's student — Paris, France
Brain markers of risk taking behaviour

2020 Supervision of Master's student — Paris, France
Predicting Alzheimer's risk from polygenic risk scores and grey-matter structure

2018 Co-supervision of PhD student — Brisbane, Australia
Genetic influences on substance use behaviour and disorders and psychiatric disorders

2018 Supervision of undergraduate students — Brisbane, Australia
Factors associated with advanced brain ageing in ADNI

2017 Co-supervision of Honours students — Brisbane, Australia
Cortical and subcortical brain changes in depression

2016 Supervision of summer/winter students — Brisbane, Australia
Genetic architecture of brain phenotypes - Comorbidities in Psychiatry

2015 Supervision of a summer student — Brisbane, Australia
Studying the impact of fRMI processing options on measurement reliability

Teaching

2022 International Statistical Genetics Workshop — Boulder, USA
A review of genetic models and analyses

2021 iMind Master degree — Paris, France
Ethical issues with predictions based on OMICS or imaging data

2021 International Statistical Genetics Workshop — Boulder, USA
Practical tutor

First author papers

Main existing datasets for open data research on humans
Couvy-Duchesne, B., S. Bottani, E. Camenen, F. Fang, M. Fikere, J. Gonzalez-Astudillo, J. Harvey, R. Hassanaly, I. Kassam, PA. Lind, Q. Liu, Y. Lu, M. Nabais, T. Rolland, J. Sidorenko, L. Strike, and M. Wright
Springer book (2022)

Parsimonious model for mass-univariate vertexwise analysis
Couvy-Duchesne, B., F. Zhang, KE. Kemper, J. Sidorenko, N. Wray, PM. Visscher, O. Colliot, and J. Yang
Journal of Medical Imaging (2022)

Association and prediction of phenotypic traits from neuroimaging data using a multi-component mixed model excluding the target vertex
Couvy-Duchesne, B., F. Zhang, KE. Kemper, J. Sidorenko, N. Wray, PM. Visscher, J. Yang, and O. Colliot
Medical Imaging 2021: Image Processing (Apr. 2021)

A unified framework for association and prediction from vertex-wise grey-matter structure
Couvy-Duchesne, B., F. Zhang, KE. Kemper, J. Sidorenko, O. Colliot, N. Wray, J. Yang, and PM. Visscher
Human Brain Mapping (Feb. 2020)

Linear Mixed Models minimise false positive rate and enhance precision of mass-univariate vertex-wise analyses of grey-matter
Couvy-Duchesne, B., F. Zhang, KE. Kemper, J. Sidorenko, N. Wray, PM. Visscher, O. Colliot, and J. Yang
IEEE proceedings (Apr. 2020)

Higher Genetic Risk For Schizophrenia Is Associated With Living In Urban And Populated Areas
Colodro Conde*, L., B. Couvy-Duchesne*, G. Zhu, A. Meyer-Lindenberg, M. Rietschel, S. Medland, J. Whitfield, and N. Martin
JAMA psychiatry (Sept. 2018)

Nineteen and Up study (19Up): understanding pathways to mental health disorders in young Australian twins
Couvy-Duchesne*, B., V. O'Callaghan*, R. Parker, N. Mills, K.M. Kirk, J. Scott, A. Vinkhuyzen, D.F. Hermens, P.A. Lind, T.A. Devenport, J.M. Burns, M Connell, B.P. Zietsch, J. Scott, M.J. Wright, S.E. Medland, J. McGrath, N.G. Martin, I.B. Hickie, and N.A. Gillespie
BMJ Open (Apr. 2018)

A Fast Method for Estimating Statistical Power of Multivariate GWAS in Real Case Scenarios: Examples from the Field of Imaging Genetics
Couvy-Duchesne, B., L. Strike, K.L. McMahon, G.I. de Zubicaray, P.M. Thompson, N. Martin, S.E. Medland, and M.J. Wright

Behavior Genetics (Dec. 2018)

Lingual Gyrus surface area is associated with anxiety-depression severity in young adults: a genetic clustering approach
Couvy-Duchesne, B., LT. Strike, GI. de Zubicaray, KL. McMahon, PM. Thompson, IB. Hickie, Martin NG., and MJ. Wright
eNeuro (Jan. 2018)

A direct test of the diathesis-stress model for depression
Colodro-Conde*, L., B. Couvy-Duchesne*, G. ZU, WL. Coventry, E. Byrne, S. Gordon, MJ. Wright, GW Montgomery, PAF. Madden, MDD working group of the PGC, S. Ripke, LJ. Eaves, AC. Heath, NR. Wray, SE. Medland, and NG. Martin
Molecular Psychiatry (July 2017)

Validation and psychometric properties of the Somatic and Psychological HEalth REport (SPHERE) in a young Australian-based population sample using non-parametric item response theory
Couvy-Duchesne, B., TA. Davenport, NH. Martin, MJ. Wright, and IB. Hickie
BMC Psychiatry 17 (Aug. 2017)

Head Motion and Inattention/Hyperactivity Share Common Genetic Influences: Implications for fMRI Studies of ADHD
Couvy-Duchesne, B., JL. Ebejer, NA. Gillespie, DL. Duffy, IB. Hickie, PM. Thompson, NG. Martin, GI. de Zubicaray, KL. McMahon, SE. Medland, and MJ. Wright
PLoS ONE (Jan. 2016)

Genetics and Brain Morphology
Strike*, LT., B. Couvy-Duchesne*, NK. Hansell*, G. Cuellar-Partida, SE. Medland, and MJ. Wright
Neuropsychology Review (Feb. 2015)

Heritability of head motion during resting state functional MRI in 462 healthy twins
Couvy-Duchesne, B., GAM. Blokland, IB. Hickie, PM. Thompson, NG. Martin, GI. de Zubicaray, KL. McMahon, and MJ. Wright
NeuroImage 102, Part 2 (Nov. 2014) pp. 424–434

Consortia and collaboration papers (selection)

The role of critical immune genes in brain disorders: insights from neuroimaging immunogenetics
Brain communications,2022

Identifying health conditions associated with Alzheimer's disease up to 15 years before diagnosis: an agnostic study of French and British health records
The Lancet Digital Health,2022

Risk prediction of late-onset Alzheimer's disease implies an oligogenic architecture
Nature Communications (2020)

Comparison and validation of seven white matter hyperintensities segmentation software in elderly patients
Neuroimage Clinical (2020)

Region-specific sex differences in the hippocampus
Neuroimage (2020)

Brain aging in major depressive disorder: results from the ENIGMA major depressive disorder working group
Molecular Psychiatry (2020)

ENIGMA MDD: seven years of global neuroimaging studies of major depression through worldwide data sharing
Translational Psychiatry (2020)

Associations between brain structure and perceived intensity of sweet and bitter tastes
Behavioural Brain Research (2019)

Genome-wide association analyses identify 44 risk variants and refine the genetic architecture of major depression
Nature (2018)

Genetic Complexity of Cortical Structure: Differences in Genetic and Environmental Factors Influencing Cortical Surface Area and Thickness
Cerebral Cortex (2018)

The Genetic Relationship Between Psychological Distress, Somatic Distress, Affective Disorders, and Substance Use in Young Australian Adults: A Multivariate Twin Study
Twin Research and Human Genetics (2018)

Hair Cortisol in Twins: Heritability and Genetic Overlap with Psychological Variables and Stress-System Genes
Scientific Reports (2017)

Subcortical brain structure and suicidal behaviour in major depressive disorder: a meta-analysis from the ENIGMA-MDD working group
Translational Psychiatry (2017)

Genetic effects influencing risk for major depressive disorder in China and Europe
Translational Psychiatry (2017)

Cortical Abnormalities in Adults and Adolescents with Major Depression based on Brain Scans from 20 Cohorts Worldwide in the ENIGMA Major Depressive Disorder Working Group
Molecular Psychiatry (2016)

Genome-wide analysis of over 106,000 individuals identifies 9 neuroticism-associated loci
Molecular Psychiatry (2016)

Association of psychiatric profile measures with binocular rivalry rate (BRR): Implications for slow BRR as an endophenotype for bipolar disorder
Twin Research and Human Genetics (2016)

Subcortical Brain Alterations in Major Depressive Disorder: findings from the ENIGMA Major Depressive Disorder Working Group
Molecular Psychiatry (2015)