GENERAL INFORMATION

Dr. Nicholas J. Bradshaw, PhD

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Gender Male | Date of birth 05.10.1983 | Nationality British / Croatian

WORK EXPERIENCE

2017-present

Assistant Professor (*Docent, znanstvani suradnik*)

University of Rijeka, Department of Biotechnology (*Sveučilište u Rijeci, Odjel za biotehnologiju*), Rijeka, Croatia

2014-2017

Postdoctoral Fellow (*Wissenschaftlicher Mitarbeiter*)

Heinrich Heine University, Department of Neuropathology (*Heinrich Heine Universität,, Institut für Neuropathologie)*, Düsseldorf, Germany

2011-2014

Postdoctoral Fellow of the Alexander von Humboldt Foundation (*Forschungsstipendiat der Alexander von Humboldt Stiftung*)

Heinrich Heine University, Department of Neuropathology (*Heinrich Heine Universität. Institut für Neuropathologie)*, Düsseldorf, Germany

2009-2011

Postdoctoral Research Associate

University of Edinburgh, Centre for Translational & Chemical Biology and Institute for Genetics & Molecular Medicine, Edinburgh, United Kingdom

2008-2009

Research Associate

University of Edinburgh, Institute for Genetics & Molecular Medicine, Edinburgh, United Kingdom

EDUCTATION AND TRAINING

2005-2009

PhD

University of Edinburgh, Institute for Genetics & Molecular Medicine, Edinburgh, United Kingdom

- Thesis title: “NDE1 in the DISC1 pathway: Interactions of schizophrenia-related proteins”
- Mentors: Dr. Kirsty Millar & Prof. David J. Porteous

2002-2005

BSc, Hons in “Natural Sciences – Biology with Physics”

Durham University, College of St. Hild & St. Bede, Durham, United Kingdom

PERSONAL SKILLS

Native language English

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
German	C1	C1	C1	C1	C1
Croatian	A2	A2	A2	A1	A2
French	A2	A2	A1	A1	A1

Levels: A1/2: Basic user - B1/B2: Independent user - C1/C2 Proficient user

Scientific and laboratory skills Mammalian cell culture - Primary cell culture - Bacterial cell culture - Western blotting - Immunofluorescence microscopy - Immunoprecipitation - Confocal microscopy - PCR cloning - Mutagenesis - Protein exclusion and purification - Size exclusion chromatography - Dynamic light scattering - Circular dichroism - Protein bioinformatics

Communication skills Lectures (teaching and conference) - Poster presentation - Leading seminars - Writing scientific articles - Writing reviews - Proof reading (English: British and American) - Peer review - Grant applications

Organisational / leadership skills Student supervision - Undergraduate teaching - Graduate teaching - Project management - Project design - Project finance - Quality control

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent user	Proficient user	Independent user	Independent user	Proficient user

OTHER INFORMATION

Publications

NJ Bradshaw, SV Trossbach, S Köber, S Walter, I Prikulis, S Weggen & C Korth
"DISC1 regulates the processing of reelin in the perinatal cortex"
Schizophrenia Research (2020), **215** 506-513

NJ Bradshaw & C Korth
"Protein misassembly and aggregation as potential convergence points for non-genetic causes of chronic mental illness"
Molecular Psychiatry (2019) **24** (7) 936-951

ASK Yerabham, A Müller-Schiffmann, T Ziehm, A Stadler, S Köber, X Indurkhya, R Marreiros, SV Trossbach, **NJ Bradshaw**, I Prikulis, D Willbold, OH Weiergräber $ C Korth
"Biophysical insights from a single chain antibody directed against the disrupted in schizophrenia 1 protein"
PLOS One (2018) 13 (1) e0191162

NS Gowert, I Krüger, M Klier, L Donner, F Kipkeew, M Gliem, **NJ Bradshaw**, D Lutz, S Köber, H Langer, S Jander, K Jurk, M Frotscher, C Korth, HH Bock, & M Elvers
"Loss of reelin protects mice against arterial thrombosis by impairing integrin activation and thrombus formation under high shear conditions"
Cellular Signalling (2017) 40 210-221

NJ Bradshaw, L Ukkola-Vuoti, M Pankokoski, AB Zheutlin, A Ortega-Alonso, M Torniainen-Holm, V Sinha, S Therman, T Paunio, J Suvisaari, J Lönnqvist, TD Cannon, J Haukka & W Hennah
"The NDE1 genomic locus affects treatment of psychiatric illness through gene expression changes related to microRNA-484"
Open Biology (2017) 7 170153

NJ Bradshaw
"The interaction of schizophrenia-related proteins DISC1 and NDEL1, in light of the newly identified domain structure of DISC1"
Communicative and Integrative Biology (2017) 9 (4) e1335375

NJ Bradshaw, ASK Yerabham, R Marreiros, T Zhang, L Nagel-Steger & Korth
"An unpredicted aggregation-critical region of the actin-polymerizing protein TRIOBP-1/Tara, determined by elucidation of its domain structure"
Journal of Biological Chemistry (2017) 292 (23) 9583-9598

ASK Yerabham, PJ Mas, C Decker, DC Soares, OH Weiergräber, L Nagel-Steger, D Willbold, DJ Hart, **NJ Bradshaw*** & C Korth*
"A structural organization for Disrupted in Schizophrenia 1, identified by high throughput screening, reveals distinctly folded regions which are bisected by mental illness-related mutations"
Journal of Biological Chemistry (2017) 292 (16) 6468-6477

NJ Bradshaw & MAF Hayashi
"NDE1 and NDEL1 from genes to (mal)functions: Parallel but distinct roles impacting on neuro-developmental disorders and psychiatric illness"
Cellular and Molecular Life Sciences (2017) 74 (7) 1191-1210

NJ Bradshaw
"Cloning of the promoter of NDE1, a gene implicated in psychiatric and neurodevelopmental disorders through copy number variation"
Neuroscience (2016) 324 262-270

NJ Bradshaw, V Bader, I Prikulis, A Lueking, S Müllner & C Korth
"Aggregation of the protein TRIOBP-1 and its potential relevance to schizophrenia"
PLOS One (2014) 9 (10) e111196

ASK Yerabham, OH Weiergräber, **NJ Bradshaw*** & C Korth*
"Revisiting Disrupted in Schizophrenia 1 as a scaffold protein"
Biological Chemistry (2013) 394 (11) 1425-1437

NJ Bradshaw, W Hennah & DC Soares
"NDE1 and NDEL1: Twin neurodevelopmental proteins with similar "nature" but different "nurture""
Biomolecular Concepts (2013) 4 (5) 447-464

V Bader, L Tomppo, SV Trossbach, **NJ Bradshaw**, I Prikulis, SR Leliveld, C-Y Lin, K Ishizuka, A Sawa, A Ramos, I Rosa, Á García, JR Requena, M Hipolito, N Rai, E Nwulia, U Henning, S Ferrea, C Luckhaus, J Ekelund, J Veijola, M-R Järvelin, W Hennah & C Korth
"Proteomic, genomic and translational approaches identify CRMP1 for a role in schizophrenia and its underlying traits"
Human Molecular Genetics (2012) 21 (29) 4406-4418

JE Eykelenboom, GJ Briggs, **NJ Bradshaw**, DC Soares, F Ogawa, S Christie, ELV Malavasi, P Makedonopoulou, S Mackie, MP Malloy, MA Wear, EA Blackburn, J Bramham, AM McIntosh, DH Blackwood, WJ Muir, DJ Porteous & JK Millar
"A t(1;11) translocation linked to schizophrenia and affective disorders gives rise to aberrant chimeric DISC1 transcripts that encode structurally altered, deleterious mitochondrial proteins"
Human Molecular Genetics (2012) 21 (15) 3374-3386

NJ Bradshaw & DJ Porteous
"DISC1-binding proteins in neural development, signalling and schizophrenia"
Neuropharmacology (2012) 62 (3) 1230-1241

DC Soares*, **NJ Bradshaw***, J Zou, CK Kennaway, RS Hamilton, ZA Chen, MA Wear, EA Blackburn, J Bramham, B Böttcher, JK Millar, PN Barlow, MD Walkinshaw, J Rappsilber & DJ Porteous
"The mitosis and neurodevelopment proteins NDE1 and NDEL1 form dimers, tetramers and polymers with a folded-back structure in solution"
Journal of Biological Chemistry (2012) 287 (39) 32381-32393

NJ Bradshaw, DC Soares, BC Carlyle, F Ogawa, H Davidson-Smith, S Christie, S Mackie, PA Thomson, DJ Porteous & JK Millar
"PKA phosphorylation of NDE1 is DISC1/PDE4-dependent and modulates its interaction with LIS1 and NDEL1"
Journal of Neuroscience (2011) 31 (24) 9043-9054

DC Soares, BC Carlyle, **NJ Bradshaw** & DJ Porteous
"DISC1: structure, function and therapeutic potential for major mental illness"
ACS Chemical Neuroscience (2011) 2 (11) 609-632

DJ Obbard, FM Jiggins, **NJ Bradshaw** & TJ Little
"Recent and recurrent selective sweeps of the antiviral RNAi gene Argonaute-2 in three species of Drosophila"
Molecular Biology and Evolution (2011) 28 (2) 1043-1056

NJ Bradshaw, S Christie, DC Soares, BC Carlyle, DJ Porteous & JK Millar
"NDE1 and NDEL1: Multimerisation, alternate splicing and DISC1 interaction"
Neuroscience Letters (2009) 449 (3) 228-233

NJ Bradshaw*, F Ogawa*, B Antolin-Fontes, JE Chubb, BC Carlyle, S Christie, A Claessens, DJ Porteous & JK Millar
"DISC1, PDE4B and NDE1 at the centrosome and synapse"
Biochemical and Biophysical Research Communications (2008) 377 (4) 1091-1096

JE Chubb, **NJ Bradshaw**, DC Soares, DJ Porteous & JK Millar
"The DISC locus in psychiatric illness"
Molecular Psychiatry (2008) 13 (1) 36-64

Presentations

Mind & Brain, 59th International Neuropsychiatry Congress, Pula, Croatia
Lecture: "Chronic mental illnesses as disorders of protein aggregation"

Fourth Croatian-Russian Psychiatric Congress, Opatija, Croatia
Lecture: "Protein aggregation and insolubility as a biological component of chronic mental illness"

IV Psychiatric Congress of Bosnia & Herzegovina, Banja Luka, Bosnia & Herzegovina
Lecture: "Aggregation of specific proteins as a biological component of chronic mental illness"

6th Croatian Neuroscience Congress, with international participation, Osijek, Croatia
Poster presentation: "TRIOBP-1 aggregation and major mental illness"

SiNAPSA Neuroscience Congress '17, Ljubljana, Slovenia
Poster presentation: "TRIOBP-1 aggregation and major mental illness"

FENS Form 2016, Copenhagen, Denmark
Poster presentation: "Aggregation of TRIOBP-1 and schizophrenia: Identification of a distinct aggregation domain"

Society for Neuroscience 2015, Chicago, IL, USA
Poster presentation: "Domain analysis of TRIOBP-1 implies a common basis underlying its actin polymerization activity and its aggregation in schizophrenia"

5th Croatian Neuroscience Congress, with international participation, Split, Croatia
Lecture: "Aggregation of the protein TRIOBP-1 and schizophrenia"

Society for Neuroscience 2013, San Diego, CA, USA
Poster presentation: "TRIOBP as a NDE1-interaction partner which may form insoluble aggregates in schizophrenia"

Schizophrenia International Research Society 2012, Florence, Italy
Lecture: "Structural analyses of DISC1 pathway proteins"

DISC1 2010, Edinburgh, United Kingdom
Lecture: "NDE1 and PKA: Signalling within the DISC1 protein complex"

The Molecular Basis of Schizophrenia and Bipolar Disorder 2009, Keystone, CO, USA
Poster presentation: "PKA phosphorylation of NDE1: Links between DISC1-interacting proteins"

International Student Congress of Medical Sciences 2008, Groningen, Netherlands
Lecture: "NDE1 and DISC1: A link between schizophrenia-related genes"

Society for Neuroscience 2007, San Diego, CA, USA
Poster presentation: "NDE1 interacts with DISC1: A link between two schizophrenia-related genes"

British Neuroscience Association 2007, Harrogate, United Kingdom
Poster presentation: "Disrupted-In-Schizophrenia 1 (DISC1) and Protein Kinase A signalling"

Projects and funding

2019-2023: Doctoral student grant
Croatian Science Foundation (*Hrvatska zaklada za znanost*), Zagreb, Croatia (DOK/2018/09/5395)
Principal applicant/mentor, 500,000 HRK approx.

2018-2022: Project grant: "CANDiD: Characterisation of Aggregate proteins in Neuropsychiatric Disorders, including *Drosophila* models"
Croatian Science Foundation (*Hrvatska zaklada za znanost*) Zagreb, Croatia (IP-2018-01-9424)
Principal applicant, 1,000,000 HRK.

2018-2019: Project grant: "SUMOylation of proteins involved in mental illness"
University of Rijeka (*Sveučilište u Rijeci*), Rijeka, Croatia
Principal applicant, 28,000 HRK

2017: Equipment subsidy
Alexander von Humboldt Foundation (*Alexander von Humboldt-Stiftung*), Bonn, Germany
Principal applicant, 20,000 EUR

2014-2017: Project grant: "Function and aggregation of TRIOBP in schizophrenia"
Fritz Thyssen Foundation (*Fritz Thyssen Stiftung*), Cologne, Germany
Principal applicant, 150,000 EUR approx.

2014-2015: Travel and facility access grant: "Expression of soluble Disrupted in Schizophrenia 1 (DISC1) sub-regions for crystallization screening"
BioStruct-X (funded by EU FP7)
Co-applicant, 3000 EUR approx.

2013-2015: Project: "The *NDE1* locus in psychiatric illness and neurodevelopment"
Heinrich Heine University (*Heinrich-Heine-Universität*), Düsseldorf, Germany
Principal applicant, 75,000 EUR approx.

2011-2014: Postdoctoral fellowship: "DISC1 and reelin: Linking molecular pathways involved in schizophrenia"
Alexander von Humboldt Foundation (*Alexander von Humboldt-Stiftung*), Bonn, Germany
Principal applicant (Postdoc), 110,000 EUR approx

2005-2008: Doctoral fellowship:
Medical Research Council, London, United Kingdom
Student, 45,000 GBP approx..

Memberships

2019-present: Croatian Society for Biochemistry & Molecular Biology (*Hrvatsko društvo za biokemiju i molekularnu biologiju, HDBMB*)

2018-present: Croatian Psychiatric Society (*Hrvatsko psihijatrijsko društvo, HPD*)

2017-present: European Science Foundation Community of Experts

2017-present: Croatian Society for Neuroscience (*Hrvatsko društvo za neuroznanost, HDN*)

2017-present: Croatian Humboldtian Club (*Klub hrvatskih humboldtovaca / Kroatischer Humboldtianer-Klub*)

2012: Schizophrenia International Research Society, SIRS

2007-present (not all years): Society for Neuroscience, SfN

Citaitons

Updated: 06.05.2020

Scopus: 1051 citations H-index: 14

ResearchGate: 1168 citations, H-index: 14, RG score: 29.36

Google Scholar: 1487 citations, H-index: 15, i10-index: 16

Peer review

Articles for scientific journals:

Antioxidants *(MDPI)*
Behavioral Sciences *(MDPI)*
British Journal of Pharmacology *(British Pharmacological Society)*
Cells *(MDPI)*
Cell & Molecular Life Science *(Springer)*
Cell Communication & Signaling *(BioMed Central)*
Current Proteomics *(Bentham Science)*
Expert Opinions on Therapeutic Targets *(Taylor & Francis)*
Gene *(Elsevier)*
International Journal of Molecular Sciences *(MDPI)*
Journal of Clinical Medicine *(MDPI)*
Journal of Neurophysiology *(American Physiological Society)*
Journal of Psychiatric Research *(Elsevier)*
Journal of Psychopharmacology *(SAGE Journals)*
Life Sciences *(Elsevier)*
Marine Drugs *(MDPI)*
Medicina *(MDPI)*
Molecular Psychiatry *(Nature)*
Neurochemistry International *(Elsevier)*
Neural Regeneration Research *(Walters Kluwer)*
Neuropharmacology *(Elsevier)*
Neuroscience *(Elsevier)*
PLOS One *(Public Library of Science)*
Progress in Neuro-Psychopharmacology & Biological Psychiatry *(Elsevier)*
Psychiatric Genetics *(Wolters Kluwer)*
Schizophrenia Research *(Elsevier)*
Scientifica *(Hindawi)*
Scientific Reports *(Nature)*

Grants for funding agencies:

Croatian Science Foundation *(Hrvatska zaklada za znanost)*, Croatia
Federation for Brain Research *(Fédération pour la Recherche sur le Cerveau)*, France
Ontario Mental Health Foundation, Canada
Scientific Research Fund (*Fonds voor Wetenshappelijk Onderzoek*), Belgium

Teaching

Masters studies "Drug research & development" (Istraživanje i razvok lijekova), "Biotechnology in medicine" (Biotehnologija u medicin) and "Medicinal chemistry" (Medicinska kemija)
University of Rijeka, Department for Biotechnology

2019-present: Associate on course "Behavioural Genetics" (*Genetika ponašanja*)

2017-present: Associate on course "Introduction to Research Work" (*Uvod u istraživački rad*)

2017-2018: Associate on course "Methods in protein research" (*Metode istraživanja proteina*)

Bachelors study "Biotechnology & drug research" (Biotehnologija i istraživanje lijekova)
University of Rijeka, Department for Biotechnology

2019-present: Course leader: "Scientific communication in the English language" (*Znanstvena komunikacija u engleskom jeziku*)

2017-present: Course leader: "Biology of mental illness"

2017-present: Associate on course "Summer school: Pathophysiology of current health problems and diseases

2017-2018: Course leader: "Introduction to Neuroscience"

2017-2018: Associate on course "Microbiology" (*Mikrobiologija*)

Masters study "Philosophy" (Filizofija), University of Rijeka, Faculty of Philosophy

2019-present: Associate on course "Philosophy of Psychiatry" (*Filizofija psihijatrije*)

Teaching at the Heinrich Heine University, Düsseldorf

2016-2017: Associate on doctoral program "iBrain"

2013-2017: Associate in Masters program "Biomedicine" (*Biomedizin*)

Administrative responsibilities

2020-present: Head of Teaching in the English Language at the Department of Biotechnology

2019-present: Chair of the Committee for Recognition of Previous Education and Extracurricular Activities, Department of Biotechnology

2018-present: Associate on the infrastructure project "Strategic internationalisation of Masters studies in mathematics and biotechnology (*Strateška internacionalizacija diplomskih studija matematike i biotehnologiju*) - OPTILIFE" (UP.03.1.102.0019, European Social Funds)

2018-present: Faculty representative on the Committee for Management and Quality Improvement, Department of Biotechnology

2018-present: Member of the ERASMUS Mobility Commission, Department of Biotechnology

Mentorship of students

Current:

Beti Zaharija (Doctorate, 2019-present)

Aristea Pavešić Radonja (Doctorate, 2018-present)

Bobana Samardžija (Masters, 2018-present)

Tina Fartek (Bachelors, experimental, 2019-present)

Anja Hart (Bachelors, experimental, 2019-present)

Martina Jeremić (Bachelors, experimental, 2019-present)

Kristin Tkalčec (Bachelors, experimental, 2019-present)

Previous:

Antony Sravan Kumar Yerabham (Doctorate, co-mentor, 2017)
„Investigations on the structural organization of the Disrupted-in Schizophrenia 1 (DISC1) protein, a major risk factor for mental illness"

Ines Gvoić (Masters, 2019)
„Convergence of aggregating proteins involved in mental illness and neurodegenerative disorders"

Maja Odorčić (Masters, 2019)
"Defining the aggregation-critical region of the schizophrenia-related protein TRIOBP-1"

Beti Zaharija (Masters, 2018)
"*In vitro* SUMOylation of proteins involved in mental illness"

Giovanna Dashi (Bachelors, experimental, 2019)
"Screening of proteins with the potential to aggregate in mental illness"

Perina Šiljeg (Bachelors, literature review, 2019)
"Genetic overlap between schizophrenia and bipolar disorder"

Lana Anet Zuber (Bachelors, literature review, 2019)
"Evidence for links between schizophrenia and gluten-related disorders"

Carla Marion (Bachelors, literature review, 2019)
"DISC1 as an important molecule involved in the process of neurodevelopment"

Popularization of science

2018-2019: STEM Games, Poreč, Croatia
Designing student tasks for the "Science Arena" (2018) and acting as a jury member

2019: Department of Biotechnology Open Day 2019, Rijeka, Croatia
Demonstrations and lectures on the theme "What causes mental illness?"

2019: SciCafé, Rijeka, Croatia
Informal lecture to medical students in a café/pub, entitled "Mental illnesses: Are they genetic?"

2010: I'm a Scientist, Get Me Out of Here!, United Kingdom
Web based school communication program

2007: Harrow School, Harrow-on-the-Hill, United Kingdom
Guest lecture to final year students entitled "Genetics & Schizophrenia"