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| BIOGRAPHICAL SKETCH |
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| NAMEPierluigi Selvaggi | POSITION TITLE-PhD Student – Institute of Psychiatry, Psychology & Neuroscience, King’s College London-Consultant Psychiatrist (permanent), UOC Psichiatria Universitaria, Azienda Ospedaliero-Universitaria Policlinico di Bari  |
| eRA COMMONS USER NAME (credential, e.g., agency login)N/A |
| EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)* |
| INSTITUTION AND LOCATION | DEGREE | MM/YY | FIELD OF STUDY |
| University of Bari Aldo Moro (UNIBA), Italy | Medical Degree | 10/2011 | Medicine |
| University of Bari Aldo Moro (UNIBA), Italy | Specialty training | 07/2017 | Psychiatry |
| Institute of Post-Rationalist Psychology (IPRA), Italy | Postgraduate training | 08/2017 | Psychiatry/Psychotherapy |
| King’s College London, UK | MPhil | 10/2018 | Neuroimaging |

A. Personal Statement

I am interested in neurobiological mechanisms of psychiatric disorders and changes in neurobiology associated with pharmacological treatment. As both clinician and researcher, my motivation is to move from simplistic research on neural correlates of psychiatric disorders towards the identification of biomarkers which are more directly translatable into the clinical setting. I obtained my medical degree at the University of Bari, Italy with honors in 2011 and subsequently in 2017 I have completed my clinical training in Psychiatry in the same university. During the course of my training in psychiatry I worked in the Psychiatric Neuroscience Group of Prof. Alessandro Bertolino receiving extensive training in neuroimaging analysis and imaging genetics. In October 2015 I started working at the Department of Neuroimaging, King’s College London, UK as visiting researcher with Prof. Mitul Mehta and Prof. Steven Williams. During my period at KCL I have further developed my skills in neuroimaging analysis with a particular focus on multivariate techniques and predictive models. At KCL I have also received additional training in clinical trials with the use of MRI (i.e. pharmaco-MRI) to determine treatment response, mechanisms of drug efficacy and side effects, and potentially advance CNS drug development. In October 2017 I have started my PhD at the funded by the National Institute for Health Research Biomedical Research Centre (NIHR-BRC) at South London and Maudsley NHS Foundation Trust and King’s College London. During my PhD, supervised by Prof. Mitul Mehta, I am investigating the effects of antipsychotics on brain physiology with a multimodal approach that integrates the use of MRI and PET. I am developing new approaches to operate this integration in collaboration with Dr. Mattia Veronese, King’s College London, UK. My PhD project is running in collaboration with Prof. Oliver Howes group at the Institute of Clinical Sciences (ICS), Imperial College London, UK where I have also been trained in administration of PET radioligands and PET data acquisitions and analysis. I am currently working part-time towards the end on my PhD that is scheduled for March 2021. In my period in the UK I have also worked as Specialty Registrar for the National Psychosis Unit at South London and Maudsley NHS Foundation Trust lead by Sir Robin Murray where I received additional training in the management of patients with treatment-resistant psychosis. of In March 2019 I have obtained a permanent position as consultant psychiatrist at the ‘Policlinico di Bari’, Bari, Italy where I currently work as staff clinician. My long-term goal is to build a synergistic relationship between research and medical practice to develop biomarkers and prognostic tools that could be translatable into clinical practice for patient benefit.

1. Positions and Honors

Positions and Employment

*Oct 2011– Jul 2012* Honorary contract with medical capacity (Internship)**,** UOC Psichiatria Universitaria, Azienda Ospedaliero-Universitaria Policlinico di Bari, Bari, Italy

*Oct 2015 – Oct 2017* Visiting researcher**;** Department of Neuroimaging - Institute of Psychiatry, Psychology & Neuroscience, King’s College London, London, UK

*Jul 2017 – Sep 2017* Freelance clinician in mental health rehabilitation services;Cooperativa ‘CSISE’ Triggiano (BA), Italy; Cooperativa ‘Spazi Nuovi’, Bari, Italy; Cooperativa ‘Progetto Popolare’, Martina Franca (TA), Italy

*Jul 2017 – Sep 2017* Staff clinician – (‘Dirigente Medico’)Fixed term; ASL Brindisi – Psychiatry Unit, ‘A. Perrino’ Hospital, Brindisi, Italy

*Jun 2018 – Sep 2019* Honorary Registrar**;** National Psychosis Unit (NPU), South London and Maudsley NHS Foundation Trust, London, UK

*Mar 2019 – Nov 2019* Staff clinician (‘Dirigente Medico’) Fixed term; UOC Psichiatria Universitaria, Azienda Ospedaliero-Universitaria Policlinico di Bari, Bari, Italy

*Oct 2017 – Mar 2019* PhD Student (full time); Department of Neuroimaging, Institute of Psychiatry, Psychology & Neuroscience, King’s College London, London, UK

*Oct 2017 – Mar 2019* Clinical Research Fellow; MRC London Institute of Medical Sciences, Hammersmith Hospital, London, UK

*Mar 2019 – ongoing* PhD Student (part time); Department of Neuroimaging, Institute of Psychiatry, Psychology & Neuroscience, King’s College London, London, UK

*Dec 2019 – ongoing* Consultant Psychiatrist (permanent); UOC Psichiatria Universitaria, Azienda Ospedaliero-Universitaria Policlinico di Bari, Bari, Italy

Other Experience

* I have worked as sub-investigator with medical capacity in several clinical trials:

Potential impact of genetic variations of dopamine D2 receptors on response to cognitive stimulation with bromocriptine - (Dec 2010 - Oct 2015) - Double blind, randomized, placebo controlled clinical trial. Site: University of Bari - Bari, Italy PI: Prof A. Bertolino

SearchLyte Schizophrenia Clinical Trial - (Nov 2012 - Dec 2014) - Schizophrenia with Glyt Evaluation. Protocol: WN25308 & WN25305. Sponsor: Hoffman- La Roche. Phase III, multi-centre, randomized, double-blind, parallel-group, placebo-controlled studies to evaluate efficacy and safety of RO4917838 (bitopertin) in stable patients with predominant negative symptoms & sub-optimally controlled symptoms. Role in the study: sub-investigator. Site: University of Bari - Bari, Italy PI: Prof A. Bertolino.

EVP-6124-016 Clinical Trial - (Dec 2014 - Oct 2015) - A 26-Week Extension Study of EVP-6124 (Alpha-7 nAChR) as an Adjunctive Pro-Cognitive Treatment in Schizophrenia Subjects on Chronic Stable Atypical Antipsychotic Therapy. Sponsor: FORUM Pharmaceuticals Inc. Role in the study: sub-investigator. Site: University of Bari - Bari, Italy PI: Dr G. Caforio.

Noradrenergic Mechanisms in Improving Cognition: a Haemodynamic Evaluation by the challenge of atomoxetine (NICHE) - (June 2016 - ongoing) - Double-Blind Placebo-Controlled Clinical Investigation (non-CTIMP). Sponsor: King’s College London. Role in the study: sub-investigator. Site: Centre for Neuroimaging Sciences, IoPPN King’s College London, UK- PI: Dr M. Mehta.

Rumination as a mechanism for ketamine’s antidepressant action: a placebo controlled, acute dose fMRI study (KARMA) - (June 2016 - ongoing) - Double- Blind Placebo-Controlled Clinical Investigation (non-CTIMP). Sponsor: Johnson and Johnson. Role in the study: sub-investigator. Site: Centre for Neuroimaging Sciences, IoPPN King’s College London, UK- Prot. Num.: CNS2015-2; PI: Dr M. Mehta.

The psychopharmacology of social and emotional cognition (MOLLY) – (June 2016 - Sep 2016) Double-Blind Placebo-Controlled Clinical Investigation (non-CTIMP). Sponsor: King’s College London. Role in the study: sub-investigator. Site: Centre for Neuroimaging Sciences, IoPPN King’s College London, UK- Prot. Num.: CNS2015-1; PI: Prof M. Mehta

A Randomized, Double-Blind, Placebo Controlled, Two-Period Cross-Over, Proof of Activity Study to Evaluate the Effects of TAK-041 on Motivational Anhedonia as Add-On to Antipsychotics in Subjects With Stable Schizophrenia (Oct 2017 – Mar 2019) Sponsor: Takeda. Role in the study: sub-investigator. Site: Centre for Neuroimaging Sciences, IoPPN King’s College London; PI: Dr. James Stone

Neuroreceptor Modulation of Brain Structure and Function (NECTAR) - (Jan 2019 - ongoing) Single Blind Placebo-Controlled Clinical Investigation (non- CTIMP) Sponsor: Imperial College London. Role in the study: sub-investigator. Site: Imperial College London, London, UK. PI: Prof Oliver Howes

* Teaching experience:

“Genetic variants, neurophysiology and pathophysiological mechanisms of dopaminergic transmission” - Special seminar for medical students, University of Bari, Bari, Italy (Dec 2013)
“Application of neuroimaging in Psychiatry” – Module 6BYN3010 Imaging the Brain, Reading the Mind – Neuroscience undergraduate – King’s College London (From Oct 2017 - ongoing)

Training and lecturing in the the Clinical Training Programme in Psychiatry at the University of Bari, Bari, Italy (Mar 2019 – ongoing)

* Other Experience:
* British Association for Psychopharmachology (BAP) Certificate in Non-Clinical Psychopharmacology (Mar 2018)
* British Association for Psychopharmachology (BAP) Summer meeting 2019 SYMPOSIUM5 **“**From neuro-receptor binding to brain function: translational value of multimodal approaches in psychopharmacology”, Chair
* Since 2018 Peer-review activity for journals in the field of Psychiatry, Neuroscience and Neuroimaging (verified by Publons, Web of Science Researcher ID: [AAB-2481-2019](https://publons.com/researcher/AAB-2481-2019/))

Professional Memberships

Full specialist registration with license to practice – General Medical Council (GMC reference number: 7533190, Specialist Register: General Psychiatry)

Full membership – Board of physicians, surgeons and orthodontists (Italian Medical register, Province of Bari; number:14566)

Federation of European Neuroscience Societies (FENS)

Schizophrenia International Research Society (SIRS)

British Association for Psychopharmacology (BAP)

Maudsley Psychedelic Society

Honors

* PhD Studentship – NIHR Maudsley Biomedical Research Centre and Department of Neuroimaging King’s College London
* ISMRM-ESMRMB 2018 Conference Educational Stipend
* ISMRM-ESMRMB 2018 Conference Magna cum Laude Award
1. Contributions to science
2. My early publications in the Group of Psychiatric Neuroscience lead by Prof. Alessandro Bertolino focused on the investigation of the effect of single nucleotide polymorphisms on brain phenotypes relevant in the pathophysiology of Schizophrenia (imaging genetics) and the interaction with pharmacological challenges
3. Gelao B, Fazio L, **Selvaggi P**, Di Giorgio A, Taurisano P, Quarto T, Romano R, Porcelli A, Mancini M, Masellis R, Ursini G, De Simeis G, Caforio G, Ferranti L, Lo Bianco L., Rampino A, Todarello O, Popolizio T, Blasi G, Bertolino A, 2014. DRD2 genotype predicts prefrontal activity during working memory after stimulation of D2 receptors with bromocriptine. *Psychopharmacology*. doi:10.1007/s00213-013-3398-9
4. Di Giorgio A, Smith RM, Fazio L, D'Ambrosio E, Gelao B, Tomasicchio A, **Selvaggi P**, Taurisano P, Quarto T, Masellis R, Rampino A, Caforio G, Popolizio T, Blasi G, Sadee W, Bertolino A, 2014. DRD2/CHRNA5 interaction on prefrontal biology and physiology during working memory. *PLoS ONE* 9, e95997. doi:10.1371/journal.pone.0095997
5. Blasi G, **Selvaggi P**, Fazio L, Antonucci LA, Taurisano P, Masellis R, Romano R, Mancini M, Zhang F, Caforio G, Popolizio T, Apud, J, Weinberger DR, Bertolino A, 2015. Variation in Dopamine D2 and Serotonin 5-HT2A Receptor Genes is Associated with Working Memory Processing and Response to Treatment with Antipsychotics. *Neuropsychopharmacology*. doi:10.1038/npp.2015.5
6. Quarto T, Paparella I, De Tullio D, Viscanti G, Fazio L, Taurisano P, Romano R, Rampino A, Masellis R, Popolizio T, **Selvaggi P**, Pergola G, Bertolino A, Blasi G. Familial risk and a genome-wide supported *DRD2* variant for schizophrenia predict lateral prefrontal-amygdala effective connectivity during emotion processing. *Schizophrenia Bullettin*. doi:10.1093/schbul/sbx128.
7. **Selvaggi P**, Pergola G, Gelao B, Di Carlo P, Nettis MA, Amico G, Fazio L, Rampino A,SambataroF, Blasi G, Bertolino A. Genetic Variation of a *DRD2* Co-Expression Network is Associated with Changes in Working Memory Processing After Bromocriptine Challenge. *Cerebral Cortex*, 13, 903. <http://doi.org/10.1093/cercor/bhy022>
8. During my period at the Department of Neuroimaging, King’s College London I developed new neuroimaging analysis approaches for pharmaco-MRI that integrate data from different modalities (fMRI, PET, mRNA expression data) to reveal pharmacokinetic/pharmacodynamic (PK/PD) interactions.
9. Selvaggi P, Hawkins PCT, Dipasquale O, et al. Increased cerebral blood flow after single dose of antipsychotics in healthy volunteers depends on dopamine D2 receptor density profiles. *Neuroimage*. 2019;188:774–784. doi:10.1016/j.neuroimage.2018.12.028
10. Dipasquale O, Selvaggi P, Veronese M, Gabay AS, Turkheimer F, Mehta MA. Receptor-Enriched Analysis of functional connectivity by targets (REACT): A novel, multimodal analytical approach informed by PET to study the pharmacodynamic response of the brain under MDMA. *Neuroimage*. 2019;195:252–260. doi:10.1016/j.neuroimage.2019.04.007
11. Patania A, Selvaggi P, Veronese M, Dipasquale O, Expert P, Petri G.Topological gene expression networks recapitulate brain anatomy and function. *Netw Neurosci*. 2019;3(3):744–762. Published 2019 Jul 1. doi:10.1162/netn\_a\_00094
12. In my PhD at the Department of Neuroimaging, King’s College London in collaboration with the MRC London Institute of Medical Sciences I am investigating the effect of antipsychotic medication on brain structure and metabolism and the interaction with brain metabolic trajectories in psychosis
13. Turkheimer FE, **Selvaggi P**, Mehta MA, Veronese M, Zelaya F, Dazzan P, Vernon AC. Normalizing the abnormal: do antipsychotic drugs push the cortex into an unsustainable metabolic envelope? *Schizophrenia Bullettin* 2020 Apr 10;46(3):484-495. doi: 10.1093/schbul/sbz119. PMID: 31755955; PMCID: PMC7147598.
14. Selvaggi P, Jauhar S, Kotoula V, Pepper F, Veronese M, Santangelo B, Zelaya F, Federico Turkheimer F, Mehta M, Howes O. Reduced Cortical Cerebral Blood Flow in First Episode Psychosis (under review)

**Complete List of Published work:**

Scopus (ID: 6602508519): No. of Documents: 12; Citations: 171; h-index: 6.

Google Scholar: No. of Documents: 12; Citations: 248; h-index: 7.

ORCID: [orcid.org/0000-0001-9069-0700](http://orcid.org/0000-0001-9069-0700)

Web of Science Researcher ID: [AAB-2481-2019](https://publons.com/researcher/AAB-2481-2019/)

KCL Pure: https://kclpure.kcl.ac.uk/portal/en/persons/pierluigi-selvaggi(53d67943-9874-4def-acb3-8bfe5a83964a).html

# D. Additional Information:

Ongoing Research Support

PhD Studentship – NIHR Maudsley Biomedical Research Centre and Department of Neuroimaging King’s College London