



NEUROSCIENCES	
CYCLE	XL
COORDINATOR	Prof. Luca BONINI email: luca.bonini@unipr.it Department of Medicine and Surgery
DURATION	3 years
STARTING DATE OF THE PHD PROGRAM	01/11/2024
CURRICULA	1. Neuroscience 2. Behavioural Biology
POSITIONS PUT OUT TO COMPETITION	11
ADMISSION PROCEDURES	Assessment of QUALIFICATIONS and Research Project Oral Exam in PRESENCE or REMOTELY
ADMISSION REQUIREMENTS	Regardless of age and citizenship, applicants holding at least one of the following academic qualifications can apply for admission: <ul style="list-style-type: none"> – Laurea specialistica or Laurea magistrale (second cycle master's degree) – Laurea Vecchio Ordinamento (degree obtained under the previous Italian regulations); – Second cycle Master's degree obtained abroad, equivalent to the above mentioned Italian degrees and recognized as suitable for the admission to doctoral program Undergraduates can also apply for admission to the selection, with the obligation to obtain the degree by 31.10.2024
TRAINING OBJECTIVES	
<ul style="list-style-type: none"> • Provide a global and interdisciplinary view of the proposed research areas, ensuring a high degree of specialization in research within these fields; • Acquire skills and abilities for the autonomous use of at least one neuroscientific investigation technique; • Promote the development of national and international networks and exchanges aimed at sharing and deepening the research topic addressed. 	
RESEARCH AREAS	
<ul style="list-style-type: none"> • Integrated Neurosciences: comparative neurophysiology and neuroethology, cognitive and social neurosciences, cognitive psychology, psychology of perception and action, psychobiology, psychophysiology. • Behavioral Biology: biological bases of social, agonistic, and parental behavior, gene/environment interactions on behavioral development, cognitive and emotional ethology in animals and humans. 	

Position with Scholarship		
N°	<i>Funding entity</i>	<i>Research Topic, if any</i>
3	Scholarship funded by University of Parma (Ministerial funds)	
1	Scholarship co-funded by Fondazione Cariparma	

Position with Scholarship LINKED TO SPECIFIC TOPICS (art. 6 of the Competition notice) * Modified with Rector Decree n. 1556 of 02.07.2024		
N°	Funding entity	BOUND RESEARCH TOPIC
1	Scholarship partly financed with UNIVERSITY funds and co-financed by the Department of Chemistry, Life Sciences and Environmental Sustainability (funds Project PRIN 2022 PNRR CUP D53D23009910006 Sector ERC SH4 "At origins of sound symbolism. A comparative investigation")	Exploring sound symbolisms in the domestic dog
1	Scholarship partly financed with UNIVERSITY funds and co-financed by the Department of Medicine and Surgery (funds Project PRIN 2022 COMPACT CUP D53D23023030001)	Application of imaging techniques for the comparative parcellation of the primate brain
1	Scholarship co-funded by Department of Medicine and Surgery (funds Project ERC CoG "EMACTIVE") and by the University Claude Bernard Lyon (France)	Computational neuroscience applied to the analysis and modeling of neural signals from extracellular recordings
1	Scholarship funded by Higher Institute of Health (ISS)	Use of Prebiotics (Inulin) and Metformin as a Combined Therapy for Metabolic and Mental Disorders Associated with Insulin Dysfunction
1	Scholarship funded by EMILIA ROMAGNA REGION CUP D92J24000010002 	The physiological mechanisms and neural bases of sustainable food consumption
1	Scholarship co-financed with funds under the PNRR - Mission 4 component 2 (Ministerial Decree 630/2024) and co-financed by the Company Blackrock Neurotech (USA) CUP D92J24000270004 	Bioengineering Methods for Analyzing Multielectrode Recordings in Human and Non-Human Primate Cerebral Cortex

POSITION RESERVED	
Reserved to Holders of RESEARCH GRANT for the scientific disciplinary sector BIO/09 in the research topic "Neural bases of the interaction between perception of space and social cognition" - C.N.R. Institute of Neurosciences"	1

ADMISSION PROCEDURES
<p>Assessment of QUALIFICATIONS: up to 40 points (a minimum score of 20 points shall be required to be admitted to the Oral Exam)</p> <p>ORAL EXAM: up to 80 points</p> <p>Minimum score for ELIGIBILITY: 70/120</p>

ORAL EXAM PROGRAM
<p>THE ORAL EXAM TAKES IN THE PRESENCE and with the possibility of carrying out the interview REMOTELY for candidates residing abroad or temporarily abroad for study / work reasons. To this end, candidates must submit a motivated REQUEST as per the model attached to the competition announcement)</p>

The ORAL test includes: 1) the verification of the candidates' general preparation on topics related to the research topics of the PhD course, 2) the presentation and discussion of the research project, 3) the verification of the knowledge of the English language.

Foreign Language

the fluency of which shall be assessed during the Oral Exam

ENGLISH

The evaluation of the knowledge of this language will be oral and will consist in the discussion of the research project presented in English)

SCHEDULE OF THE ADMISSION EXAMS

ASSESSMENT OF QUALIFICATIONS

It is the candidate's responsibility to verify the outcome of the evaluation of qualifications, which can be consulted in their reserved area by connecting to the page <http://unipr.esse3.cineca.it/Home.do> in the days preceding the date of the Oral Exam

ORAL EXAM

DATE

2nd September 2024 (with possible extension to the following day)

TIME

09:00 am (Italian Time)

PLACE

ROOM B
Department of Medicine and Surgery
Integrated Biotechnological Plexus
Via Volturmo, 39/E – 43125 PARMA - ITALY

FURTHER INFORMATION

The choice of the Research Topic to be expressed in Annex A is not binding on the assignment of the research project, and it is intended to assess candidates skills during the admission exam. The PhD research topic will be assigned by the Academic Board.

THE INTERVIEW MAY ALSO TAKE PLACE ENTIRELY IN ENGLISH

For foreign candidates, the admission examinations may be held in English at the candidate's choice.

LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT

MANDATORY DOCUMENTS TO BE ATTACHED TO THE ON-LINE APPLICATION

ANNEX A

(art. 3.2 of the Competition notice)

Identification Document

Scanned Copy of a valid identity document with photo (i.e. identity card, passport)

Curriculum Vitae et studiorum

No specific CV format is required (see art. 3.2 of the Competition notice)

Degree thesis

the full thesis in pdf format. Undergraduate applicants must submit the draft of the thesis approved by their supervisor. Undergraduate applicants must submit the draft of the thesis approved by their supervisor (abstract/draft of the thesis: 10.000 characters including spaces)

Academic Qualifications

Certificates and academic transcript of records for both Bachelor' and Master' degrees containing the following details for each degree held: (art. 3.2 of the Competition notice): University that granted the degree - Type of degree (first cycle/second cycle/single cycle)

	Name of the degree program - Date of graduation - Final mark - List of exams and corresponding scores (academic transcript of records) - Translation into Italian or English (only for degrees issued in languages other than Italian or English).	
Research Project	<p>Written in English, 3 pages with single spacing in Times New Roman 12, including bibliography, it must focus on an original research topic (unpublished, developed personally by the candidate. It should be noted that the Examination Board can use of IT tools useful for verifying the originality of the submitted Project) and it shall be structured as follows: introduction of the problem in the scientific context, relevance of the problem, objectives, expected results.</p> <p><u>It does not represent a constraint with respect to the following choice of the doctoral thesis, which will be assigned by the Academic Board.</u></p>	
LIST OF EVALUABLE QUALIFICATIONS		
(only qualifications attested by a document drawn up in Italian or in English)		
Curriculum Vitae et studiorum	<p>Including academic career and postgraduate experience, accompanied by a statutory declaration in lieu of the certification of the exams passed with the relevant marks, as well as the final graduation mark.</p> <p>The marks of the exams and the graduation mark will be the most relevant element of the evaluation.</p>	Up to 40 points
Curriculum Vitae et Studiorum will be evaluated based on the following qualifications and scores:		
Graduation mark	<p>Score related to the final mark:</p> <ul style="list-style-type: none"> - 110 with honours (magna cum laude): 10 points; - 110: 7 points - From 108 to 109: 5 points - From 106 to 107: 3 points - 104-105: 1 point - Under 104: 0 points 	Up to 10 points
Average of the exam marks (if the candidate will attain the degree no later than 31 October 2023)	<p>Score related to the average of the exam marks:</p> <ul style="list-style-type: none"> - From 29/30 to 30/30: 10 points - From 28/30 to 28.99/30: 7 points - From 27/30 to 27.99/30: 5 points - From 26/30 to 26.99/30: 3 points - From 25/30 to 25.99/30: 1 point - Under 25/30: 0 points 	Up to 10 points
Graduation thesis	<p>Congruence with the research topics of the PhD course and methodological quality of the experimental or bibliographic work.</p> <ul style="list-style-type: none"> o Experimental thesis related to the PhD program of Neuroscience: 10 points o Non-experimental and relevant thesis: 5 points o Thesis not relevant: 0 points 	Up to 10 points
Research Project	<p>Project evaluation score:</p> <ul style="list-style-type: none"> o scientific value: 2.5 points o structure of the proposal: 2.5 points o proposal feasibility in relation to the specific research topics of the PhD course: 2.5 points o originality of the proposal: 2.5 points 	Up to 10 points
Statement of Research Interest	Short text – maximum 1 page – in Italian or in English	Up to 2 points
Scientific Publications	<ul style="list-style-type: none"> o Each article in a peer-reviewed international journal: 1 point o Each book chapter: 0.4 points o abstracts/papers/posters presented at conferences or symposia: 0.3 points <p>The same categories are half valued if in Italian. The points of the publications are normalized for post-graduate years, that is, divided by the numbers of post-graduate years.</p>	Up to 5 points

Other Academic qualifications	Other academic qualifications consistent with the research topics of this PhD program	Up to 3 points
EVALUATION ORAL EXAM		
Interview Program	Evaluation CRITERIA	POINTS
<p>The ORAL examination includes:</p> <p>A1) Neurosciences: the oral report on 2 topics drawn at random (one from list 1 and one from list 2) among those indicated below:</p> <ol style="list-style-type: none"> 1.1. Genesis and transmission of the nervous impulses 1.2. The synapses 1.3. The reflexes 1.4. Molecular and cellular bases of signal Transduction 1.5. Neural bases of plasticity <ol style="list-style-type: none"> 2.1 The motor system 2.2. The visual system 2.3. The somatosensory system 2.4. The autonomic nervous system and emotions 2.5. Neurobiology of language <p>A2) Behavioural Biology: the oral report on 2 topics chosen by lot from those indicated in the list below:</p> <ol style="list-style-type: none"> 1) Individual and social learning 2) Imprinting and development of behavior 3) Genetic and epigenetic of behavior 4) Parental effort and sexual selection 5) Social behavior, reproductive systems and parental care 6) Aggression, assault and social hierarchies 7) Hormones, neurotransmitters and behavior 8) Parental selection and altruism 9) Behavioral evolution 10) Communication and emotions emozioni <p>B) The presentation and discussion of the research project, aimed at verifying the candidate's aptitude for scientific research. The discussion will take in English to evaluate the knowledge and the fluency of the language</p>	<ul style="list-style-type: none"> ○ Up to 40 points for the oral report on one of the first 5 and one of the second 5 topics, extracted from the list alongside (up to 20 points per topic); ○ Up to 20 points for the project presentation; ○ Up to 20 points for knowledge of the foreign language 	Up to 80 points