




NEUROSCIENCES	
CYCLE	XXXVIII
COORDINATOR	Prof. Luca BONINI email: luca.bonini@unipr.it Department of Medicine and Surgery
DURATION	3 years
STARTING DATE OF THE PHD PROGRAM	01/11/2022
CURRICULA	1. Neurosciences 2. Behavioural Biology
RESEARCH TOPICS (The candidate MUST mandatorily indicate one research topic in the form ANNEX A and submit a RESEARCH PROJECT in the relevant field)	
<ul style="list-style-type: none">• Integrated neuroscience: comparative neurophysiology and neuroethology, cognitive and social neuroscience, cognitive psychology, psychology of perception and action, psychobiology, psychophysiology.• Behavioral biology: biological basis of social, competitive and parental behavior, gene/environment interactions on the development of behavior, cognitive ethology and emotions in animals and humans	
TRAINING OBJECTIVES	
<ul style="list-style-type: none">• Provide a global and interdisciplinary vision of the proposed research sectors, guaranteeing a high degree of specialization in research in these areas;• Acquire skills and abilities in the autonomous use of at least one neuroscientific investigation technique;• Promote the development of networks of national and international relations and exchanges aimed at sharing and deepening the research topic addressed.	
ADMISSION REQUIREMENTS	Regardless of age and citizenship, applicants holding at least one of the following academic qualifications can apply: <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 within the deadline set for enrollment, that is by 24.10.2022

POSITIONS PUT OUT TO COMPETITION	14	With Scholarship	12
		Reserved for employees of companies or public institutes and research centers engaged in highly qualified activities	2
Position with Scholarship			
N°	Funding entity	Research Topic, if any	
2	Scholarship funded by University of Parma (Ministerial funds)	---	
1	Scholarship funded by University of Parma (University funds)	---	
1	Scholarship co-funded by Fondazione Cariparma	---	



Position with Scholarship LINKED TO SPECIFIC TOPICS (art. 11 of the Competition notice)

During the Oral Exam, applicants may express and/or confirm their interest of being assigned a scholarship linked to a specific research topic. The Examination Board will evaluate their eligibility based on specific competences, experience and specific aptitudes of the applicants.

N°	Funding entity	BOUND RESEARCH TOPIC
1	Scholarship partly financed with UNIVERSITY funds and co-financed by the Department of Medicine and Surgery (Project ERC CoG "EMACTIVE")  <small>European Research Council Established by the European Commission</small>	<ul style="list-style-type: none"> Telemetric monitoring of autonomic parameters in freely moving macaques during neural recordings
1	Scholarship partly financed with UNIVERSITY funds and co-financed by the Department of Medicine and Surgery (Project ERC CoG "EMACTIVE")  <small>European Research Council Established by the European Commission</small>	<ul style="list-style-type: none"> Implementation of techniques for optogenetic and chemogenetic manipulation of neural activity in the macaque
1	Scholarship partly financed with UNIVERSITY funds and co-financed by the Department of Medicine and Surgery (Project ERC CoG "EMACTIVE")  <small>European Research Council Established by the European Commission</small>	<ul style="list-style-type: none"> Neuroethology of non-human primate motor and social behavior
1	Scholarship funded by Neurexlore S.r.l.	<ul style="list-style-type: none"> Artificial Intelligence Applied to Neuromarketing
1	Scholarship co-financed with funds under the PNRR - Mission 4 component 2 (Ministerial Decree 352/2022) and co-financed by the Company Lombardini22  Finanziato dall'Unione europea NextGenerationEU  <i>Ministero dell'Università e della Ricerca</i> 	<ul style="list-style-type: none"> Interaction between motor system and architecture in action and emotion perception
1	Scholarship co-financed with funds under the PNRR - Mission 4 component 2 (Ministerial Decree 352/2022) and co-financed by the Company Toyota Motor Europe SV.SA  Finanziato dall'Unione europea NextGenerationEU  <i>Ministero dell'Università e della Ricerca</i> 	<ul style="list-style-type: none"> Emotional state classification via kinematic, neurovegetative and electrophysiological monitoring in ecological contexts
1	Scholarship co-financed with funds under the PNRR - Mission 4 component 2 (Ministerial Decree 352/2022) and co-financed by the Company HENESIS S.r.l.  Finanziato dall'Unione europea NextGenerationEU  <i>Ministero dell'Università e della Ricerca</i> 	<ul style="list-style-type: none"> Electrophysiological correlates and predictors of motor learning via action observation
1	Scholarship co-financed with funds under the PNRR - Mission 4 component 2 (Ministerial Decree 352/2022) and co-financed by the Company Ernst & Young Business School S.r.l.  Finanziato dall'Unione europea NextGenerationEU  <i>Ministero dell'Università e della Ricerca</i> 	<ul style="list-style-type: none"> The multifaceted interplay between environment and multisensory integration. The research project concerns the study of the influence of environmental factors on the plasticity of multisensory integration processes. The grant will support the execution of both behavioural studies using virtual environments and functional neuroimaging studies.



Position reserved for EMPLOYEES of companies or public institutes and research centers engaged in highly qualified activities	
N°	Company/Institution
1	Reserved to employees of A.S.S.T. Grande Ospedale Metropolitano Niguarda
1	Reserved to employees of HENESIS S.r.l.

ADMISSION PROCEDURES	Assessment of QUALIFICATIONS: up to 40 points (a minimum score of 20 points must be obtained to be admitted to the Oral Exam) ORAL EXAM: up to 80 points Minimum score for ELIGIBILITY: 70/120
Foreign Language	During the Oral Exam it will be verified the proficiency in the following language: ENGLISH . The evaluation of this language will be oral and will consist in the discussion of the research project presented in English.
APPLICANTS ADMITTED TO THE ORAL EXAM WILL TAKE THE EXAM IN PRESENCE*	
*The Oral Exam can be taken in remote mode with audio and video connection only for candidates residing abroad or temporarily abroad for study / work reasons who submit a motivated request as per the model attached to the competition announcement. It is also possible to ask for the remote examination for those in isolation/quarantine for COVID-19 virus infection, at the moment of the exam, by submitting a motivated REQUEST as per the model attached to the competition announcement)	
THE INTERVIEW MAY BE HELD ALSO IN ENGLISH	
LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT	
MANDATORY DOCUMENTS TO BE ATTACHED TO THE ON-LINE APPLICATION	
ANNEX A	(art. 5 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. 4 of the Competition notice)
Abstract of degree thesis	Abstract of the second cycle master's degree thesis and the full thesis in pdf format. Undergraduate applicants must submit the draft of the thesis approved by their supervisor.
Academic qualifications	Certificates and academic transcript of records for both Bachelor' and Master' degrees containing the following details for each degree held: (art. 4 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	Written in English, 3 pages with single spacing in Times New Roman 12, including bibliography, it must focusing 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. <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>



FURTHER QUALIFICATIONS THAT MAY BE ATTACHED TO THE APPLICATION, IF IN POSSESSION OF THE APPLICANT

(only qualifications attested by a document drawn up in Italian or in English)

Statement of Research interest	Short text – maximum 1 page – in English, aimed at explaining the candidate's motivation to attend the PhD program and at describing her/his specific research interests
Scientific Publications	Articles on national and international journals with peer reviewing, abstracts of papers presented at conferences or symposia, book chapters etc.
Other Academic qualifications	First or second level Master's degree obtained in Italy and/or specialization degree in subjects consistent with the research topics of this PhD program
Other experiences (training, work, research, teaching, etc.) related to the topic of PhD course	<ul style="list-style-type: none"> – Research activity (basic, applied, translational, etc.) carried out in any capacity, including when covered by research grant, and as a staff member of research units – Working activity – Professional and/or training internship – Language proficiency certificates – Periods of study abroad, outside the country of origin (e.g. Erasmus programme or other similar mobility programmes) – Other qualifications attesting the suitability of the applicants (scholarships, awards, etc.)

EVALUATION CRITERIA

QUALIFICATION	EVALUTATION CRITERIA	POINTS
Curriculum Vitae et studiorum	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.	Up to 40 points

Curriculum Vitae et Studiorum will be evaluated based on the following qualifications and scores:

Graduation mark	Score related to the final mark: - 110 with honours (magna cum laude): 10 points; - 110: 7 points - From 108 to 109: 5 points - From 106 to 107: 3 points - 105-106: 1 point - Under 105: 0 points	Up to 10 points
Average of the exam marks (if the candidate will attain the degree no later than 24 October 2022)	Score related to the average of the exam marks: - 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 - Under 26/30: 0 points	Up to 10 points
Graduation thesis	Congruence with the research topics of the PhD course and methodological quality of the experimental or bibliographic work. ○ Experimental thesis related to the PhD program of Neuroscience: 10 points ○ Non-experimental and relevant thesis: 5 points ○ Thesis not relevant: 0 points	Up to 10 points
Research Project	Project evaluation score: ○ scientific value: 2.5 points ○ structure of the proposal: 2.5 points ○ proposal feasibility in relation to the specific research topics of the PhD course: 2.5 points ○ 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"> ○ Each article in a peer-reviewed international journal: 1 point ○ Each book chapter: 0.4 points ○ 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
ORAL EXAM	EVALUATION CRITERIA	POINTS
<p>The ORAL examination includes:</p> <p>A1) <u>Neurosciences</u>: the oral report on 2 topics chosen by lot from those indicated in the list below:</p> <ol style="list-style-type: none"> 1) The origin of the nervous impulses 2) The synapses 3) The reflexes 4) Molecular and cellular bases of signal transduction 5) The motor system 6) The visual system 7) The somatosensory system 8) The autonomic nervous system 9) Neurobiology of language 10) Neurobiology of attention 11) Neurobiology of emotions 12) Memory and learning <p>A2) <u>Behavioural Biology</u>: 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 	<ul style="list-style-type: none"> ○ Up to 40 points for the oral report on the two topics extracted (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



8) Parental selection and altruism		
9) Behavioral evolution		
10) Communication and emotions emozioni		
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		
SCHEDULE OF THE ADMISSION EXAMS		
ORAL EXAM	DATE	15 September 2022
	TIME	09:00 AM (Italian Time)
	PLACE	Department of Medicine and Surgery Neuroscience Unit - Building E - 1 st Floor Via Volturno, 39 - 43125 PARMA - ITALY
OTHER INFORMATION	For foreign candidates, the admission examinations may be held in English at the candidate's choice.	