



| NEUROSCIENCES | |
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| CYCLE | XXXVII |
| COORDINATOR | Prof. Vittorio GALLESE email: vittorio.gallese@unipr.it Department of Medicine and Surgery |
| DURATION | 3 anni |
| STARTING DATE OF THE PHD PROGRAM | 01/11/2021 |
| CURRICULA | 1. Neurosciences 2. Behavioural Biology |
| RESEARCH TOPICS (The candidate MUST mandatorily indicate one research topic in the ANNEX A) | |
| <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 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 Undergraduate applicants may also submit applications with the obligation of getting their degree by October 31st 2021 . |

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| POSITION PUT OUT TO COMPETITION | 11 | With Scholarship | 10 |
| | | Reserved to employees of companies having an "Industrial Doctorate" arrangement | 1 |
| Position with Scholarship | | | |
| N° | Funding entity | Research Topic, if any | |
| 3 | 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) | | |
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| During the Oral Exam, applicants may express and / or confirm their interest to the Examination Board in being assigned a scholarship dedicated to a specific research topic.. The Board will express its judgement on eligibility to be assigned the scholarship in consideration of the specific competences, experience and specific aptitudes of the applicants. | | |
| N° | Funding entity | BOUND RESEARCH TOPIC |
| 1 | Scholarship funded by Department of Medicine and Surgery | <ul style="list-style-type: none"> Neurophysiological mechanisms for the coding of actions performed and observed in the cortico-basal ganglia circuits. |
| 1 | Scholarship partly financed with UNIVERSITY funds and co-financed by the Department of Engineering and Architecture | <ul style="list-style-type: none"> Development of IoT (internet of Things) systems for monitoring a car driver psychophysiological state |
| 1 | Scholarship funded by Neuroscience Institute (Italian National Research Council C.N.R.) | <ul style="list-style-type: none"> Development of Action observation Training protocols in the recovery and acquisition of sport gestures |
| 1 | Scholarship co-funded by the Department of Engineering and Architecture and co-funded by University of Trento | <ul style="list-style-type: none"> Number-space association: A comparative, developmental and neurobiological approach |
| 1 | Istituto Superiori di Sanità | <ul style="list-style-type: none"> Investigate the potential beneficial effect of early life (birth to weaning) dietary supplementation with 3 nutrient blends alone or in combination on cognitive functions in mice |
| Position reserved for "INDUSTRIAL DOCTORATE" (according to art. 2 paragraph 2, lett. e) of Ministerial Decree n. 45/2013) | | |
| N° | Company/Institution | |
| 1 | Reserved to employees of A.S.S.T. Grande Ospedale Metropolitano Niguarda | |

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| ADMISSION PROCEDURES | Assessment of QUALIFICATIONS: up to 40 points (a minimum score of 20 points shall be required to be admitted to the Oral Exam) ORAL EXAM: up to 80 points Minimum score for ELIGIBILITY: 70/120 |
| Foreign Language | Language the fluency of which shall be assessed during the Oral Exam: ENGLISH . The knowledge of this language will be tested in oral form and will consist of a short conversation in English. |
| CANDIDATES ADMITTED TO THE ORAL TEXT CAN TAKE THE EXAM IN PRESENCE OR REMOTELY IN AUDIO AND VIDEO TELECONFERENCE (Candidates who intend to take the Oral Exam remotely must submit request, to this purpose, as per the model attached to the competition notice) | |
| 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) |



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| 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. Undergraduate applicants must submit the draft of the thesis approved by their supervisor (abstract/draft of the thesis: 10.000 characters including spaces) | |
| Qualifications | <p>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).</p> | |
| <p>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)</p> | | |
| Research Project | <p>The research project shall consist of a maximum of 3 pages, be written in Italian or in English, focused 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, significance of the problem, methodology and experimental design/data analysis, expected results.</p> <p>The Research Project <u>not represent a constraint with respect to the following choice of the doctoral thesis</u>, that shall be defined together with the supervisor and approved by the Academic Board</p> | |
| Statement of Research interest | Short text – maximum 1 page – in Italian or in English, aimed at explaining the candidate's reasons to attend the PhD program and at describing her/his specific research interests | |
| Scientific Publications | Articles on national and international journals, papers presented at conferences or symposia, book chapters etc. | |
| Reference Letters | A maximum of 2 written by professors or researchers at the University of origin of the candidate or from other universities or from experts in the research areas working in public or private research facilities, attached to the online application | |
| 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.) | <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 |



| The candidate's Curriculum Vitae et Studiorum will be evaluated based on the following qualifications and scores: | | |
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| Graduation mark | Score related to the final mark: - 110 with honours (magna cum laude): 10 points - 110: 7 points; - From 105 to 109: 4 points; - Under 105: 0 points | Up to 10 points |
| Average of the exam marks (if the candidate will attain the degree no later than 31 October 2021) | Score related to the average of the exam marks: - From 29/30 to 30/30: 10 points - From 27/30 to 28.9/30: 8 points - Under 27/30: 0 points | Up to 10 points |
| Graduation thesis | <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 | Points relating to the research project shall be allocated on the basis of the following criteria: <ul style="list-style-type: none"> o Scientific value and ground-breaking nature of the proposal: 2.5 points o description and structure of the proposal: 2.5 points o proposal feasibility: 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 |
| Reference Letters | maximum 2 reference letters | Up to 2 points |
| Other Academic qualifications | Other academic qualifications consistent with the research topics of this PhD program | Up to 1 points |
| ORAL EXAM | EVALUATION CRITERIA | POINTS |
| <p>The ORAL examination includes:</p> <p>A1) Neurosciences: 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 | <ul style="list-style-type: none"> o Up to 40 points for the oral report on the two topics extracted (up to 20 points per topic) o Up to 20 points for the project presentation o Up to 20 points for knowledge of the foreign language | Up to 80 points |



- 8) The autonomic nervous system
- 9) Neurobiology of language
- 10) Neurobiology of attention
- 11) Neurobiology of emotions
- 12) Memory and learning

A2) Behavioural Biology: the oral report on 2 topics chosen by lot from those indicated in the list below:

- 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
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B) The presentation and discussion of the research project, aimed at verifying the candidate's aptitude for scientific research

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| ORAL EXAM | DATE | 14 September 2021 (with possible extension in the following days) |
| | TIME | 09:00 am (Italian Time) |
| | PLACE | Department of Medicine and Surgery Neuroscience Unit - Building E - 1 st Floor Via Volturmo, 39 - 43125 PARMA - ITALY |
| OTHER INFORMATION | For foreign candidates, the admission examinations may be held in English at the candidate's choice. | |