



NEUROSCIENCES		
<b>Cycle</b>	XXXV	
<b>Coordinator</b>	Prof. Vittorio GALLESE Department of Medicine and Surgery email: <a href="mailto:vittorio.gallese@unipr.it">vittorio.gallese@unipr.it</a>	
<b>Duration</b>	3 years	
<b>Starting date of the PhD program</b>	01/11/2019	
<b>Partner Institution</b>	<ul style="list-style-type: none"><li>Neuroscience Institute (Italian National Research Council C.N.R.)</li></ul>	
<b>Research Topics</b>		
<ul style="list-style-type: none"><li>Integrative Human neurosciences: integrative neurophysiology; social and cognitive neurosciences: cognitive psychology</li><li>Behavioral biology: ethological, psychobiological and behavioral study of development, social cognition, agonistic and sexual behavior, in animals and humans</li></ul>		
<b>Training Objectives</b>		
<ul style="list-style-type: none"><li>To give a global and interdisciplinary view of the proposed research fields providing a deep research focus</li><li>To acquire skills and abilities in the autonomous use of at least one neuroscientific technique</li><li>To promote an effective dissemination of the research through the development of national and international scientific networks</li></ul>		
<b>Admission requirements</b>		
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"><li>- Laurea specialistica or Laurea magistrale (second cycle master's degree)</li><li>- Laurea Vecchio Ordinamento (degree obtained under the previous Italian regulations);</li><li>- Second cycle Master's degree obtained abroad, equivalent to the above mentioned Italian degrees and recognized as suitable for the admission to doctoral programs</li></ul> Undergraduate applicants may also submit applications with the obligation of getting their degree by <b>October 31<sup>st</sup> 2019</b> .		
<b>POSITIONS PUT OUT TO COMPETITION</b>		
<b>With Scholarship</b>		6
	<b>TOTAL</b>	<b>6</b>
<b>Positions with University Scholarship</b>		
<b>N°</b>	<b>Funding entity</b>	<b>Research Topic</b>
<b>3</b>	Scholarship University funds	<ul style="list-style-type: none"><li>Human integrative neurosciences</li><li>Behavioral biology</li></ul>
<b>1</b>	Scholarship co-funded by Fondazione Cariparma	



## Position with Scholarship LINKED TO SPECIFIC TOPICS (art. 11 of the Call for applications)

During the Written Exam, applicants may express their interest in being assigned a scholarship dedicated to a specific research topic to the Examination Board. 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
2	Funded by Neuroscience Institute (Italian National Research Council C.N.R.)	<ul style="list-style-type: none"><li>• Electrophysiological study of the cortical mechanisms underpinning action recognition in virtual reality</li><li>• Action Observation Treatment as a clinical preventive tool and as prosthetic tool for motor learning</li></ul>

## ADMISSION PROCEDURES

**Assessment of QUALIFICATIONS:** up to 40 points

(a minimum score of 20 points shall be required to be admitted to the Written Exam)

**WRITTEN EXAM:** up to 40 points

**ORAL EXAM:** up to 40 points

**Minimum score for ELIGIBILITY:** 70/120

<b>Foreign Language</b>	Language the fluency of which shall be assessed during the Oral Exam: <b>ENGLISH</b> . The evaluation of the knowledge of this language will be oral and will consist in translating of a scientific text.
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## 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 Call for Applications)
- Scanned Copy of a **valid identification document** with photo
- **Curriculum Vitae et studiorum** (art. 4 of the Call for Applications)
- **Abstract of the second cycle master's degree thesis.** Undergraduate applicants may submit the draft of the thesis approved by their supervisor (abstract/draft of the thesis: 10.000 characters including spaces)
- **Certificates and academic transcript of records for both Bachelor' and Master' degrees** containing the following details for each degree held: (art. 4 of the Call for Applications):
  - 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)

### 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)

- **Research Project:** The research project shall consist of a maximum of 3 pages, be written in Italian or in English, focus on an original research topic and it shall be structured as follows: introduction of the problem in the scientific context, significance of the problem, expected results, argumentation. It does not represent a constraint with respect to the following choice of the doctoral thesis, that shall be defined together with the supervisor and approved by the Academic Board;



- **Scientific Publications:** Articles on national and international journals, papers Articles and/or reviews in scientific journals with peer reviewing, abstracts/papers/posters presented at conferences or symposia, book chapters etc.;
- **Academic qualifications:** First or Second Master's degree and/or specialization degree in subjects consistent with the research topics of this PhD program;
- **Mobility experience abroad** (e.g. Erasmus or similar);
- **Any other document** certifying the applicant's training and abilities (grants, awards, etc.)

## EVALUATION CRITERIA

QUALIFICATION	EVALUTATION CRITERIA	POINTS
<b>Graduation mark</b>	Score related to the final mark: - 110 with honours (magna cum laude): 10 points - 110: 6 points; - From 105 to 109: 3 points; - Under 105: 0 points	<b>Up to 10 points</b>
<b>Average of the exam marks</b> (if the candidate will attain the degree no later than 31 October 2019)	Score related to the average of the exam marks: - 30 with honours (magna cum laude): 10 points - 30/30: 6 points - From 25/30 to 29/30: 3 points - Under 25/30: 0 points	<b>Up to 10 points</b>
<b>Graduation thesis</b>	<ul style="list-style-type: none"> <li>○ Experimental thesis related to the PhD program of Neuroscience: 10 points</li> <li>○ Non-experimental and relevant thesis: 5 points</li> <li>○ Thesis not relevant: 0 points</li> </ul>	<b>Up to 10 points</b>
<b>Research Project</b>	Points relating to the research project shall be allocated on the basis of the following criteria: <ul style="list-style-type: none"> <li>○ Scientific value and ground-breaking nature of the proposal: 2.5 points</li> <li>○ description and structure of the proposal: 2.5 points</li> <li>○ proposal feasibility: 2.5 points</li> <li>○ originality of the proposal: 2.5 points</li> </ul>	<b>Up to 10 points</b>
<b>Scientific publications</b>	<ul style="list-style-type: none"> <li>○ Each article in a peer-reviewed international journal: 1 point</li> <li>○ Each book chapter: 0.4 points</li> <li>○ abstracts/papers/posters presented at conferences or symposia: 0.3 points</li> </ul> <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>	<b>Up to 5 points</b>
<b>Other qualifications</b>	1 point for every important post-graduate experience (research grant, scholarship, non-curricular internships, mobility experience abroad, a post graduate master's degree, specialization degree, etc)	<b>Up to 5 points</b>



WRITTEN EXAMINATION		EVALUATION CRITERIA AND POINTS
Written examination themes for Human Integrative <b>Neuroscience</b> :		<p style="text-align: center;"><b>Up to 40 points:</b></p> <ul style="list-style-type: none"> <li>○ 40 points if the written examination is exhaustive and well argued</li> <li>○ 0 points if the written examination is insufficient</li> </ul>
<ol style="list-style-type: none"> <li>1) The origin of the nervous impulses</li> <li>2) The synapses</li> <li>3) The reflexes</li> <li>4) Molecular and cellular bases of signal transduction</li> <li>5) The motor system</li> <li>6) The visual system</li> <li>7) The somatosensory system</li> <li>8) Neurobiology of language</li> <li>9) Neurobiology of attention</li> <li>10) Memory and learning</li> <li>11) Analytic methods of electroencephalographic signal in time and frequencies domains</li> <li>12) Functional connectivity methods for electrophysiological signals</li> <li>13) Source localization methods of electrophysiological signals</li> </ol> <p>Themes 11, 12 and 13 are aimed at candidates who intend to compete for the bound research topic "Electrophysiological study of the cortical mechanisms underpinning action recognition in virtual reality".</p>		
Written examination themes for <b>Behavioral Biology</b> :		
<ol style="list-style-type: none"> <li>1) Individual and social learning</li> <li>2) Imprinting and development of behavior</li> <li>3) Genetic and epigenetic of behavior</li> <li>4) Parental effort and sexual selection</li> <li>5) Social behavior, reproductive systems and parental care</li> <li>6) Aggression, assault and social hierarchies</li> <li>7) Hormones, neurotransmitters and behavior</li> <li>8) Parental selection and altruism</li> <li>9) Behavioral evolution</li> <li>10) Communication and emotions</li> </ol>		
<p><b>Three themes will be sorted for human integrative neuroscience. Two themes will be sorted for behavioral biology. Among the sorted themes, candidates will have the faculty to choose which one address</b></p>		
ORAL EXAMINATION	EVALUATION CRITERIA	POINTS
<p>The oral examination will focus on the candidate's written exam and research project, as well as, on the discussion of her/his motivation to attend the doctoral course. Knowledge of the English language (or of any optional foreign language) will be assessed.</p>	<ul style="list-style-type: none"> <li>○ knowledge of foreign languages: 10 points</li> <li>○ research project presentation: 20 points</li> <li>○ general knowledge of issues connected to the PhD course and candidate's motivation: 10 points</li> </ul>	<b>Up to 40 points</b>



SCHEDULE OF THE ADMISSION EXAMS		
<b>WRITTEN EXAM</b>	<b>DATE</b>	16 September 2019
	<b>TIME</b>	10:00 am
	<b>PLACE</b>	Reading room Department of Medicine and Surgery Neuroscience Unit - Building E - 1 <sup>st</sup> Floor Via Volturmo, 39 - 43125 PARMA - ITALY
<b>ORAL EXAM</b>	<b>DATE</b>	17 September 2019
	<b>TIME</b>	10:00 am
	<b>PLACE</b>	Reading room Department of Medicine and Surgery Neuroscience Unit - Building E - 1 <sup>st</sup> Floor Via Volturmo, 39 - 43125 PARMA - ITALY
<b>OTHER INFORMATION</b>	For foreign candidates, the admission examinations may be held in English at the candidate's choice.	