

# Neuromotor Science, Ph.D.

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## COLLEGE OF PUBLIC HEALTH

Learn more about the Doctor of Philosophy in Neuromotor Science.

## About the Program

The study of human movement, both as an outcome of health and functioning and as a means to understand the mechanisms underlying neuromotor system integration and behavior, is foundational to many health professions. The skills needed to be successful in fields of related study require fluency across the disciplines of engineering, movement science, neuroscience, and rehabilitation. The need exists for rigorously trained scientists with interdisciplinary training in neurobiology and biomechanics of the sensorimotor system, with a focus on how human movement is impacted by health conditions, disease, disability, and development.

Our Neuromotor Science (NMS) program trains students to advance the science of neuromotor control and biomechanics of human posture and movement in individuals across the lifespan and spectrum of health and disability levels. The Ph.D. in Neuromotor Science (PhD-NMS) program is designed for individuals in the fields of engineering, exercise science, kinesiology, occupational therapy, physical therapy, rehabilitation science, and the like, preparing them to:

- advance the science and understanding of neuromotor processes, including assessment and evaluation of human movement, neuromotor function and integration, and how they are impacted by age, health, functioning, and disability; and
- contribute to the development of interventions to improve human movement, particularly posture and locomotor control, and function across the lifespan.

**Time Limit for Degree Completion:** 7 years

**Campus Location:** Main, Health Sciences Center

**Full-Time/Part-Time Status:** Full-time study is expected. This research-focused doctoral degree program requires 4 to 7 years of full-time study post-baccalaureate or 2 to 3 years of full-time study after completion of the M.S. in Neuromotor Science degree.

PhD-NMS students are initially advised by the NMS Program Director during admission and in the first term if an academic advisor has not been identified. Within two terms of matriculation, students are assigned an academic advisor from the core program faculty — or an available Graduate Faculty member with expertise in the student's cognate area, as approved by the NMS Program Director. Students develop an "Individualized Development Plan of Graduate Studies," which is reviewed with their advisor every term, and by the NMS Program Director and/or the Program Advisory Committee on an annual basis.

**Interdisciplinary Study:** Students may use their elective coursework to pursue interdisciplinary study throughout the University. The PhD-NMS program participates in the interdisciplinary program in Neuroscience at Temple University.

**Areas of Specialization:** All students complete the same core course requirements, but may focus their elective coursework and research experiences on preparing them for future work in areas related to their specific interests.

**Job Prospects:** Graduates of the PhD-NMS degree program are prepared for research or teaching/research positions at Carnegie Research I institutions. They are also prepared for employment as faculty members in other academic settings, in clinical research settings, or in industry positions.

**Non-Matriculated Student Policy:** Non-matriculated students may enroll in up to three graduate courses with permission from the NMS Program Director.

**Financing Opportunities:** Assistantship packages consisting of a stipend, tuition remission, and subsidized health benefits are available. Admission to the PhD-NMS program does not, however, guarantee financial support. Research and Teaching Assistantships are highly competitive, with awards varying based on faculty-funded areas of research and the teaching needs of the College. Please contact the NMS Program Director for additional information.

## Admission Requirements and Deadlines

### Application Deadline:

*Fall:* January 5

*Spring:* November 1

All applicants to the Ph.D. in Neuromotor Science program must apply via the Centralized Application Service for Public Health (SOPHAS). The system can be accessed at <https://sophas.liaisoncas.com/>. Applications received after the stated deadlines will be reviewed as space and funding allow.

### Letters of Reference:

*Number Required:* 3

*From Whom:* Letters of recommendation should be obtained from individuals who can speak to the applicant's potential for graduate study. At least one should be from a faculty member who is familiar with the applicant's academic abilities.

**Master's Degree in Discipline/Related Discipline:** A master's degree is not required.

**Bachelor's Degree in Discipline/Related Discipline:** All applicants must present credentials that are the equivalent of a baccalaureate degree at Temple University.

A WES course-by-course transcript evaluation is required for applicants who completed their bachelor's degree outside of the United States. This can be requested at <https://www.wes.org/> and submitted through SOPHAS.

**Statement of Goals:** In a one-page statement, articulate why you want to enroll in the PhD-NMS program at Temple. State your career goals and research interests.

**Standardized Test Scores:**

GRE: Required. Scores from a test taken within the last 5 years must be at or above the 50th percentile in the verbal and quantitative components, with a score of 4 or higher on the writing component. Official scores should be sent directly to SOPHAS using code 0151.

Applicants who earned their baccalaureate degree from an institution where the language of instruction was other than English, with the exception of those who subsequently earned a master's degree at a U.S. institution, must report scores for a standardized test of English that meet these minimums:

- TOEFL iBT: 79 (send officially to SOPHAS using the SOPHAS-specific TOEFL code 5688)
- IELTS Academic: 6.5
- PTE Academic: 53
- Duolingo: 110

**Interview:** Students may be invited to interview with the program faculty. An interview may take place in person or through technology if cost prohibits travel to Temple.

**Resume:** Current resume or CV required.

## Program Requirements

**General Program Requirements:**

*Number of Credits Required to Earn the Degree:* 45

*Required Courses:*

Code	Title	Credit Hours
<b>Core Courses</b>		
HRPR 5001	Current and Emerging Issues in Public Health and Health Professions	0
HRPR 5999	Research Experience in Health Professions (work on publishable paper for two terms)	0
NMS 9621	Neuromotor Science 1: Neural Factors	3
NMS 9622	Neuromotor Science: Instrumentation	3
NMS 9623	Neuromotor Science: Programming	3
NMS 9624	Neuromotor Science 2: Mechanics and Models	3
NMS 9627	Neuromotor Science 3: Cognition and Learning	3
NMS 9653	Grantsmanship	3
Statistics and Research Design courses		9
Teaching Practicum <sup>1</sup>		0
<b>Electives <sup>2</sup></b>		<b>12</b>
<b>Research Courses</b>		
NMS 9994	Doctoral Preliminary Exams	1
NMS 9998	Dissertation Proposal	2
NMS 9999	Dissertation Research	3
<b>Total Credit Hours</b>		<b>45</b>

- 1 Each student serves as a Teaching Assistant for one academic term during the degree program. If the student selects the Teaching in Higher Education Seminar as one of the required electives, s/he can then use the Teaching Practicum to complete the Teaching in Higher Education certificate.
- 2 Electives are chosen from existing 5000-, 8000-, or higher-level courses to provide a cognate area based on the student's interest in, for example, engineering, kinesiology, neuroscience, psychology, public health, rehabilitation science, or teaching in higher education. The NMS Program Director and faculty advise on and approve the selection of electives.

**Minimum Grade to be Earned for All Required Courses: B-**

**Culminating Events:**

In addition to completing the required coursework, students are expected to complete an area paper, a preliminary written and oral examination, and a dissertation research proposal prepared in the form of a grant proposal. Students are also expected to write and submit an abstract for their research and present that research at a scientific or professional meeting. The dissertation must include a publishable article.

*Area Paper:*

Prior to the preliminary examination, students must write a paper of publishable quality in their chosen area. Students could enroll in an elective course, a laboratory rotation, or independent study to complete this paper. The paper can be a report of research completed with a faculty member, a systematic review of literature related to the projected area of dissertation work, or a representation of theoretical work. In each instance, the student is expected to be the lead or sole author. Students are encouraged to select and submit the paper for peer review to an appropriate journal, but the publishable quality of the paper will be determined by faculty members with sufficient background in the area to judge the quality of the work. Students who have published a peer-reviewed paper in a journal as lead author prior to entry into the doctoral program can request a waiver of this requirement.

*Preliminary Examination:*

All students must pass a preliminary examination (NMS 9994) prior to defending their dissertation research proposal. This qualifying examination consists of assessment of both didactic knowledge and research skills in neuromotor science. The didactic knowledge portion of the exam consists of a written examination followed by an oral examination of core concepts taught within the core neuromotor science courses. The research skill portion of the exam consists of skills acquired in a research lab presented in a lab practicum format.

*Dissertation Proposal and Defense:*

In conjunction with the academic advisor and with the approval of the NMS Program Director, each student is expected to identify a Doctoral Advisory Committee. The committee shall be comprised of at least three members. Two of the members shall be from within the Department of Health and Rehabilitation Sciences, and at least one shall be from outside the department. At least two of the three members must hold full Graduate Faculty status.

Students are required to prepare and submit a dissertation proposal and successfully defend it orally in front of their committee. As appropriate, they must obtain IRB approval for their proposed research and submit a copy of the dissertation proposal to the Graduate School. Students are expected to have developed and defended their dissertation proposal within one year of successfully completing their preliminary examination.

Any student who does not adhere to this timeline must petition the Program Advisory Committee for an exception to this requirement. Extensions are not guaranteed. If a student does not receive an extension, her/his case will be considered at the time of the Annual Review of Progress toward the degree. Failure to pass NMS 9998 within one year can result in dismissal from the program.

*Dissertation Research:*

Students are required to complete and orally defend their dissertation research. Students must be enrolled continuously in NMS 9999 until their dissertation is successfully defended. The Graduate School requires at least 6 credits of dissertation research coursework. Students must be enrolled in the term that they graduate.

The dissertation must be successfully defended in a public oral defense as determined by the student's Dissertation Examining Committee. This committee evaluates the student's ability to express verbally her/his research question, methodological approach, primary findings, and implications. The Dissertation Examining Committee votes to pass or fail the dissertation and the defense at the conclusion of the public presentation.

Students who are preparing to defend their dissertation must confirm a time and date for the oral defense with their Dissertation Examining Committee at least 15 days before the desired defense date. After the student and department have arranged the time, date, and room for the defense, the student must provide the official announcement to the Graduate School at least two weeks before the defense.

## Contacts

### Program Web Address:

<https://www.temple.edu/academics/degree-programs/neuromotor-science-phd-hp-nms-phd>

### Department Information:

Dept. of Health and Rehabilitation Sciences  
Ritter Hall Annex, 6th Floor  
1301 Cecil B. Moore Avenue

Philadelphia, PA 19122-6091  
deptpt@temple.edu  
215-204-9066

**Submission Address for Application Materials:**

<https://sophas.liaisoncas.com/>

**Department Contacts:**

*Program Director:*

W. Geoffrey Wright, Ph.D.  
wrightw@temple.edu  
215-204-9008

*Interim Chairperson:*

Scott Burns, PT, D.P.T., OCS, FAAOMPT  
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