

KINESIOLOGY (KNES)

Graduate Degree Program
College: Public Health

Abstract

A vital part of the School of Public Health, the Department of Kinesiology offers programs leading to the Master of Arts (thesis and non-thesis options) and Doctor of Philosophy degrees. Research emphases within the three broadly defined areas of exercise physiology, cognitive motor neuroscience, and physical cultural studies are offered. Within each of these cognate areas, students develop specialized programs with faculty guidance and consistent with faculty expertise. Details of faculty research interests and additional information can be found at the department website <http://www.sph.umd.edu/KNES/>

Financial Assistance

Teaching and research graduate assistantships are offered each academic year. At the present time, over two-thirds of the graduate students are financially supported. Teaching assistants work as discussion leaders and laboratory assistants as well as instructors in physical activity classes. Many research assistants are supported by grants. The department is active in seeking University fellowships for its outstanding applicants. Currently the department provides partial financial support for all graduate students who are selected to present their research at scholarly meetings.

Contact

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Website: <http://www.sph.umd.edu/knes> (<http://www.sph.umd.edu/knes/>)

Courses: KNES (<https://umd-curr.courseleaf.com/graduate/courses/knes/>) SPHL (<https://umd-curr.courseleaf.com/graduate/courses/sphl/>)

Relationships: Bioengineering (BIOE) (<https://academiccatalog.umd.edu/graduate/programs/bioengineering-bioe/>) Neurosciences and Cognitive Science (NACS) (<https://academiccatalog.umd.edu/graduate/programs/neurosciences-cognitive-science-nacs/>)

Admissions

General Requirements

- Statement of Purpose
- Transcript(s)
- TOEFL/IELTS/PTE (international graduate students (<https://gradschool.umd.edu/admissions/english-language-proficiency-requirements/>))

Program-Specific Requirements

- Letters of Recommendation (3)
- Graduate Record Examination (GRE)
- CV/Resume
- Teaching Assistantship form (<https://gradschool.umd.edu/sites/gradschool.umd.edu/files/uploads/admissionsforms/umdsupplementaryapplicationknes.pdf>)

Students may qualify for admission with a 3.0 GPA for M.A. or 3.5 GPA for Ph.D. programs, strong GREs, and a focused letter detailing academic and research goals as well as previous research experiences. In addition, each applicant should submit a minimum of three strong recommendations from people knowledgeable about the applicant's prior academic achievements and research potential. Appropriate background course work closely aligned with the intended research specialization is expected. Graduate faculty sponsorship is also necessary for admission; each faculty member has only a limited number of openings and only the most highly qualified applicants are selected. Faculty review of applications does not occur until all required parts of the application are received. This review is done in early January; therefore applicants are encouraged to have all their application materials submitted by January 1 for best consideration for admission and financial support.

For more admissions information or to apply to the program, please visit our Graduate School website (<https://gradschool.umd.edu/admissions/application-process/step-step-guide-applying/>).

Application Deadlines

Type of Applicant	Fall Deadline	Spring Deadline
Domestic Applicants		
US Citizens and Permanent Residents	4 Dec	4 Sep
International Applicants		
F (student) or J (exchange visitor) visas; A, E, G, H, I and L visas and immigrants	4 Dec	4 Sep

Other Deadlines: Please visit the program website at <http://www.sph.umd.edu/knes> (<http://www.sph.umd.edu/knes/>)

Requirements

- Kinesiology, Doctor of Philosophy (Ph.D.) (<https://academiccatalog.umd.edu/graduate/programs/kinesiology-knes/kinesiology-phd/>)
- Kinesiology, Master of Arts (M.A.) (<https://academiccatalog.umd.edu/graduate/programs/kinesiology-knes/kinesiology-ma/>)

Facilities and Special Resources

The Department has three areas of specialization: Cognitive Motor Neuroscience, Exercise Physiology, and Physical Cultural Studies. Laboratories are maintained, which support original investigations in each of the three areas. Laboratories include equipment for measuring metabolic parameters, strength, body composition, postural sway, ground reaction forces, amount of physical activity in daily life, as well as muscle biopsies and movement analysis. The response of the human body to physical activity/exercise can be viewed through ECG, EEG, EMG and systematic behavior observation systems. Each of the three research

areas has interfaced computer hardware and software to support data collection and analysis. Collaborations with the School of Medicine at the Baltimore campus and with NIH often result in the availability of other facilities and equipment. All graduate students have access to computers and other forms of technology. Details and pictures of current facilities and equipment are available at our website: www.sph.umd.edu/KNES/. (<http://www.sph.umd.edu/KNES/.html>)

Cognitive Motor Neuroscience Lab Various tools provide students with opportunities to measure, postural sway, ground reaction forces, multi-digit pressing and moments in 3-D, and movement analysis. These tools include:

1. A three wall rear-projected monoscopic CAVE display system with three XGA digital projectors. The system is designed for standing humans to be immersed in a visual world to test questions about how the nervous system processes visual information to maintain upright stance.
2. A hydraulically-controlled moveable force platform for recording center of pressure and ground reaction forces inside the CAVE.
3. An Optotrak motion analysis system, capable of tracking up to 24 LEDs simultaneously for whole body analysis.
4. A touch plate consisting of a miniature force plate capable of resolving .01 N of force in three directions.
5. A Logitech 6D ultrasonic tracking system consisting of a control unit, two triangular receivers and one triangular transmitter. Each receiver provides three components of translation (x, y, z) and three components of rotation (yaw, pitch, roll) with a resolution of .006 cm.
6. A 16 channel EMG Neuraxon system for recording muscle activity. Because responses of the human body can be viewed through Electrocardiographic (ECG), Electroencephalic (EEG), and Electromyographic (EMG), we collaborate with the University of Maryland, School of Medicine at Baltimore and the National Institutes of Health. This results in the availability of other facilities and equipment whereby students may join forces on projects involving neuroimaging and virtual reality environments.

Exercise Physiology Lab The Exercise Physiology group has various laboratories capable of supporting a wide-range of exercise-related studies, including metabolic testing, Bod-Pod body composition, muscular strength and power testing, and various clinical blood-based assays. Moreover, the group collaborates with various nearby facilities for high-quality measurement of body composition, including muscle size, bone density, and visceral adiposity. A 6,000 sq. ft. training facility is fully equipped with aerobic exercise training equipment and 20+ Keiser strength training machines for all major muscle groups. In addition to these general facilities, the group maintains other specialized laboratories. The Functional Genomics Lab studies the role of genetic variation in disease susceptibility and the responses and adaptations of different individuals to various exercise programs. The lab has state of the art equipment for genetic analysis, including extensive computer resources. The Molecular Biology Lab has extensive scientific resources for examining the effects of exercise and inactivity on muscle, adipose, and other cell types utilizing both in vivo and in vitro approaches. website: www.sph.umd.edu/KNES/ (<http://www.sph.umd.edu/KNES/>).

Physical Cultural Studies (PCS) advances the critically and theoretically-driven analysis of physical culture, in all its myriad forms. These include sport, exercise, health, dance, and movement related practices, which PCS research locates and analyzes within the broader social, political, economic, and technological contexts in which they are situated. More specifically, PCS is dedicated to the contextually based understanding

of the corporeal practices, discourses, and subjectivities through which active bodies become organized, represented, and experienced in relation to the operations of social power. PCS thus identifies the role played by physical culture in reproducing, and sometimes challenging, particular class, ethnic, gender, ability, generational, national, racial, and/or sexual norms and differences.