Department of Physical Therapy
and Human Movement Sciences

Northwestern
University

Contents

PTHMS History

1927 - Physical therapy education is established at Northwestern as an 8-month certificate program for nurses and physical education instructors.
1928 - The program receives accreditation along with the first 6 schools of PT. Northwestern now has the oldest, continuously operating and continuously accredited PT school in the country!
1945 - A post-professional, graduate program is established in cooperation with Department of Anatomy and Physiology, awarding a Master of Science degree.
1953 - The program begins offering a baccalaureate degree which continues until 1990.
1990 - The program begins offering a Master of Physical Therapy degree.
2000 - PTHMS becomes a department in the Feinberg School of Medicine.
2001 - PTHMS begins offering the Doctor of Physical Therapy (DPT).
2006 - A joint DPT/PhD degree program is established in cooperation with the McCormick School of Engineering
2007 - A PhD specialty in Human Movement Sciences is established at the NU Institute for Neuroscience.
2009 - DPT curriculum is revamped to accommodate sequencing of didactic and clinical education components.
2013 - The Shirley Ryan AbilityLab (formerly the Rehabilitation Institute of Chicago) and PTHMS sign an agreement for a clinical and academic partnership resulting in the integration of research, education, and clinical care.
2014 - Most recent, successful CAPTE accreditation site visit. The program is fully accredited until 2024.
2016 - DPT is ranked as the 6th best physical therapy degree program in the nation by *US News and World Report*

PTHMS Faculty

Our accomplished faculty (http://www.feinberg.northwestern.edu/sites/pthms/faculty/index.html) is committed to both teaching and research. Faculty members come from physical therapy and other science backgrounds and represent a wide range of practice settings. Many hold American Physical Therapy Board certified clinical specialties including orthopedic, neurological, geriatric, pediatric, and cardiopulmonary and several are involved with the American Physical Therapy Association. Additionally, due to the program's place in the Feinberg School of Medicine, faculty from other departments are involved in teaching DPT students.

PTHMS Students

We have a talented, passionate, community-minded student body. Many are active in the state and national PT Associations, as well as numerous organizations and committees. Our students include those who have recently completed their undergraduate degree, those who have taken time off work to complete additional coursework prior to PT school, and those who have been working in another field and are making career changes. Academic backgrounds also vary with undergraduate majors ranging from the sciences to business and the performing arts. While a bachelor's degree is the minimum requirement for admission, several of our students have earned masters or doctoral degrees before entering the program. 90-95 new students enter the program each year.

PTHMS Partnership with Shirley Ryan AbilityLab (formerly Rehabilitation Institute of Chicago)

In April 2013, PTHMS and the Shirley Ryan AbilityLab (https://www.sralab.org/), the nation's premiere rehabilitation hospital, established a formal partnership to leverage the strengths of both organizations and promote innovation. Through collaborations across clinical, academic, and research endeavors, the organizations strive to advance the fields of physical therapy, physical medicine, and rehabilitation. Under the agreement, PTHMS and AbilityLab researchers have greater access to clinicians, data, and potential trial participants, allowing them to better pursue investigative questions and develop innovative science-based devices, technologies, and treatments. For patients, the joint commitment has resulted in even more research being translated into evidence-based clinical care. The agreement also called for a joint physical therapy residency program, provided for more PTHMS students to learn at the nation's top-ranked physical medicine and rehabilitation hospital, and offered PTHMS faculty appointments to eligible AbilityLab clinical physical therapists.

Northwestern Medicine

In 2009, Northwestern University Feinberg School of Medicine, Northwestern Memorial Hospital, and the Northwestern Medical Faculty Foundation joined under the name Northwestern Medicine (http://northwesternmedicine.org) establishing a common vision to guide the long-term direction of the Northwestern academic medical center. This collaboration committed Northwestern to lead the transformation of healthcare and become one of the top ten academic medical centers in the US through excellence in patient care, scientific discovery and innovation, and teaching and the development of people, culture, and resources.

The DPT Curriculum

Basic science and clinical courses are offered within a movement sciences framework integrating the physiologic, neurologic, biomechanical, and behavioral factors that contribute to normal and abnormal movement. There is strong emphasis on decision-making based on scientific principles and clinical evidence. Learning is interactive and clinical work is interspersed with academic content allowing students to have significant involvement with patients in a variety of settings. The following sequence prepares students to effectively manage patients across the lifespan and continuum of care. Courses are organized so each is a prerequisite for those that follow; students use learned material to solve increasingly complex patient problems as they progress through the curriculum.

FALL, YEAR 1

501-0 MEDICAL TERMINOLOGY (0.5 credits)
An online assessment of medical terminology completed prior to enrollment in the DPT program.

505-1 CLINICAL PRACTICE SEMINAR I (2 credits)
The first of a six course series addressing ongoing, clinical activities that supplement and amplify the content of classroom and laboratory coursework in the current trimester; provides the opportunity to observe and/or practice various aspects of decision making and patient care skills in a clinical setting.
510-1 GROSS ANATOMY I (5.5 credits)
The first of two courses that address the gross structures of the human body with emphasis on musculoskeletal and neurovascular structures and their relationship to human movement and the motor control framework. This course covers thorax, back, upper extremity, head and neck, and includes cadaver dissection and palpation.
511-1 KINESIOLOGY I (4 credits)
The first of two courses examining biomechanical factors contributing to the control of human movement, with application of quantitative kinematic (motion) and kinetic (force) concepts of movement analysis to specific joints, regions, and/or whole body movement patterns in individuals with and without impairments. This course concentrates on static analysis of forces and torques, kinesiology of the upper extremity region, and task analysis.
514-1 PHYSIOLOGY I (4 credits)
The first of two courses that examine physiology of all major body systems with fundamentals of pathophysiology presented from various perspectives: etiology; pathogenesis; signs and symptoms; diagnosis, including typical laboratory tests and diagnostic imaging options; and pharmacological intervention.
521-1 PSYCHOSOCIAL ASPECTS OF HUMAN BEHAVIOR I (2.5 credits)
The first of two courses designed to increase knowledge and skills used to address psychosocial issues faced by individuals and their significant reference groups at points on the continuum of health and disability. Personal and professional attitudes and values, communication skills, and professional ethics are stressed as components of effective and culturally appropriate therapeutic relationships.
523-0 INTRODUCTION TO CLINICAL DECISION MAKING (3 credits)
The course introduces a conceptual framework for analyzing and treating human movement problems by linking the scientific bases of movement control with the physical therapy process. The conceptual framework guides the entire curriculum as well as the physical therapist's clinical practice.
530-1 EXAMINATION AND EVALUATION I (3 credits)
The first of two courses focused on a physical therapist's examination and evaluation of patients across the lifespan using a hypothesis driven process, including interview skills, basic system screens, and documentation of the examination and evaluation findings.
570-1 SYNTHESIS PROJECT I (1 credit)
An opportunity to conduct inquiry into a narrowly defined topic relevant to physical therapy. All elements of the research process are addressed in this faculty-guided group process that spans 6 trimesters.

WINTER, YEAR 1
505-2 CLINICAL PRACTICE SEMINAR II (1 credit)
510-2 GROSS ANATOMY II (5 credits)
Continuation of Gross Anatomy I, this course covers abdomen, pelvis and lower extremity.
511-2 KINESIOLOGY II (2.5 credits)
Continuation of Kinesiology I, concentrating on dynamic analysis of forces and torques, kinesiology of the lower extremity, kinesiology of the axial skeleton, biomechanical analysis of gait and balance, and task analysis.
514-2 PHYSIOLOGY II (4 credits)
Continuation of Physiology I with an integrated examination of the major body systems.
520-1 PROFESSIONAL ROLE DEVELOPMENT I (1.5 credits)
This if the first of four courses that address issues in physical therapy education, research, administration, consultation, and practice, and the transition from student to physical therapist. Courses focuses on healthcare in the United States, members of the health care team, and the physical therapist as educator and consultant.

530-2 EXAMINATION AND EVALUATION II (3 credits)
Continuation of Examination and Evaluation I. The course continues to develop the knowledge and skills necessary for the physical therapy examination of people with movement problems. Topics covered include screening for the musculoskeletal and neuromuscular systems, joint mobility, muscle force, balance and gait examination, and use of outcome assessment measures.
540-1 FOUNDATIONS OF PHYSICAL THERAPY I (3 credits)
The first of two courses preparing students to choose appropriate interventions using a motor control framework, the clinical decision-making model, and results of the patient examination, and to implement interventions safely. Interventions addressed, including bed positioning, bed mobility, activities of daily living, transfers, wheelchair skills, and gait training with assistive devices, are applied to specific patient populations in other clinical science courses. Environmental adaptations and impact on individuals with mobility problems are explored.
570-2 SYNTHESIS PROJECT II (1.5 credits)

SPRING, YEAR 1
505-3 CLINICAL PRACTICE SEMINAR III (1 credit)
513-1 NEUROSCIENCE I (2.5 credits)
This course provides the foundation for physical therapy management of individuals with neuromuscular control problems by focusing on peripheral neuroanatomic structures and neurophysiologic processes.
520-2 PROFESSIONAL ROLE DEVELOPMENT II (1 credit)
The second course in the series emphasizes principles of reimbursement, legal issues impacting the practice of physical therapy, and the role of physical therapists as advocates for health care.
531-1 CLINICAL MANAGEMENT, CARDIOVASCULAR & PULMONARY DYSFUNCTION I (2 credits)
The first in a two-course sequence designed to develop examination and treatment skills to manage problems presented by individuals with cardiovascular and pulmonary dysfunction across the continuum of care. An underlying premise of this course is that all patient problems and interventions have a potential impact on the cardiovascular and pulmonary systems.
537-1 CLINICAL MANAGEMENT, NEUROLOGICAL DYSFUNCTION I (2.5 credits)
The first of three courses addressing physical therapy examination, evaluation, diagnosis, prognosis and intervention for individuals across the lifespan with movement problems stemming from dysfunction of the peripheral nervous system.
540-2 FOUNDATIONS OF PHYSICAL THERAPY II (5 credits)
Continuation of Foundations of Physical Therapy I. Interventions studied include therapeutic exercise and supplementary agents including heat, cold, and hydrotherapy as applied to specific populations.
560-1 CLINICAL EXPERIENCE I (8 credits – 6 weeks)
This is the first of four full-time clinical experiences providing for application and synthesis of previously learned knowledge and skills under the supervision and guidance of qualified physical therapists. The experience provides a context for courses to follow while developing the clinical reasoning process through students' contributions to the clinical facility. Placements are in facilities that allow students to use the knowledge and skills acquired in the classroom. Given their academic preparation to date, students are expected to require close supervision and assistance to make effective clinical decisions.
570-3 SYNTHESIS PROJECT III (1 credit)

FALL, YEAR 2
505-4 CLINICAL PRACTICE SEMINAR IV (1 credit)
513-2 NEUROSCIENCE II (2.5 credits)
This course provides the foundation for physical therapy management of individuals with neuromuscular control problems by focusing on central neuroanatomic structures and neurophysiologic processes.
521-2 PSYCHOSOCIAL ASPECTS OF HUMAN BEHAVIOR II (1.5 credits)
The course is designed to further increase knowledge of and skills needed to address selected

psychosocial issues encountered by individuals and their significant reference groups at various points on the continuum of health and disability. Issues inherent in the role of the physical therapist are also discussed. Develop strategies for effective interaction with clients, healthcare professionals, and others.

531-2 CLINICAL MANAGEMENT, CARDIOVASCULAR & PULMONARY DYSFUNCTION II (2.5 credits)
The second in a two-course sequence designed to develop examination and treatment skills to manage problems presented by individuals with cardiovascular and pulmonary dysfunction. Content will emphasize fitness and health across the healthcare continuum.

536-1 CLINICAL MANAGEMENT, MUSCULOSKELETAL DYSFUNCTION I (4 credits)
The first of three courses that develop the physical therapist's ability to examine, evaluate, and provide interventions for patients with problems of the musculoskeletal system. The course includes a spectrum of clinical orthopedic pathologies, overview of the diagnostic procedures used in determining care, various health-care providers who care for patients with musculoskeletal dysfunction, medical and surgical procedures for managing disorders, and the impact of this care on the PT management of the patient with musculoskeletal dysfunction.

537-2 CLINICAL MANAGEMENT, NEUROLOGICAL DYSFUNCTION II (2.5 credits)

538-1 MANAGEMENT OF PATIENTS THROUGHOUT THE LIFESPAN I (2 credits)
The course covers physical therapy principles and special issues related to human development and maturation across the lifespan, from birth through older adulthood. Content is presented through a series of special topics that illustrate issues to be considered when providing care to patients of all ages.

570-4 SYNTHESIS PROJECT IV (1.5 credits)

WINTER, YEAR 2

505-5 CLINICAL PRACTICE SEMINAR V (1 credit)

513-3 NEUROSCIENCE III (2.5 credits)
This course provides the foundation for physical therapy management of individuals with neuromuscular control problems by focusing on complex, integrative neuroscience concepts.

520-3 PROFESSIONAL ROLE DEVELOPMENT III (1.5 credits)
The third course in the series includes principles of program planning and development, including budgeting, marketing, and evaluation.

533-0 ELECTROPHYSICAL AGENTS (3 credits)
The course presents the principles and use of electrical stimulation of nerve and other tissues for the purpose of pain management, edema control, muscle contraction and wound healing.

536-2 CLINICAL MANAGEMENT, MUSCULOSKELETAL DYSFUNCTION II (4 credits)

537-3 CLINICAL MANAGEMENT, NEUROLOGICAL DYSFUNCTION III (2.5 credits)

538-2 MANAGEMENT OF PATIENTS THROUGHOUT THE LIFESPAN II (2 credits)

570-5 SYNTHESIS PROJECT V (1.5 credits)

SPRING, YEAR 2

560-2 CLINICAL EXPERIENCE II (8 credits – 6 weeks)
The second of four full-time clinical experiences.

505-6 CLINICAL PRACTICE SEMINAR VI (0.5 credits)

520-4 PROFESSIONAL ROLE DEVELOPMENT IV (1 credit)
The fourth course in the series focuses on making a successful transition from student to licensed physical therapist, including resume writing, interviewing, and the licensure process.

536-3 CLINICAL MANAGEMENT, MUSCULOSKELETAL DYSFUNCTION III (4 credits)

541-0 CLINICAL MANAGEMENT, AMPUTATIONS (1.5 credits)
The course addresses the physical therapy care of individuals with extremity amputations from pre-prosthetic through prosthetic training, with emphasis on the lower extremity. Components, materials, design, fabrication, principles of fitting, alignment, biomechanics, prescription, training and total patient management are discussed.

546-0 CLINICAL MANAGEMENT, LYMPHATIC OR INTEGUMENTARY DYSFUNCTION (2.5 credits)
The course addresses the examination, evaluation, prognosis, intervention and prevention of problems of the lymphatic and integumentary systems, with or without secondary movement problems.
548-0 CLINICAL MANAGEMENT OF THE COMPLEX PATIENT (2 credits)
Through the use of complex patient cases, this course provides an opportunity to integrate material from all courses to manage patients/clients with unique, complex or multisystem problems.
570-6 SYNTHESIS PROJECT VI (1 credit)

FALL, YEAR 3
560-3 CLINICAL EXPERIENCE III (11.5 credits – 13 weeks)
This is the third of four full-time clinical experiences that provide for application and synthesis of knowledge and skills under the supervision and guidance of qualified physical therapists. By the conclusion of this course, students will demonstrate entry-level practice in the assigned practice area.

WINTER, YEAR 3
560-4 CLINICAL EXPERIENCE IV (11.5 credits – 13 weeks)
This is the final full-time clinical experience that provides for application and synthesis of knowledge and skills under the supervision and guidance of qualified physical therapists. By the conclusion of this course, students will be safe, effective, and independent physical therapists in a variety of settings across the health care continuum. Students will demonstrate entry-level practice, and commitment to patients, ongoing self-development, and ability to assist with growth of the facility and development of the physical therapy profession.

Clinical Education (CE)

There are 2 types of CE experiences, integrated (part-time) and full-time. Integrated CE experiences occur throughout the curriculum, beginning in the first fall trimester of the program. These assigned experiences are conducted in facilities within Chicago and nearby suburbs. Students can be assigned to one full day experience or multiple half-day experiences typically totaling 8-10 hours per trimester. Integrated clinical education experiences are coordinated by a faculty member and contribute to grades in the Clinical Practice Seminar course series. These experiences are intended to expose students to a variety of patient care settings, diagnoses, and age levels.

Examples of Integrated Clinical Education Experiences
Patient Management Experiences Students manage a patient's examination and/or treatment under the supervision of a physical therapist in an inpatient, outpatient, or home health setting. Typically, first and second year students are partnered and participate in the patient interaction and document the treatment session, in accordance with their level of skill/education. Full-time physical therapy clinicians provide supervision during these experiences; however, faculty may act as facilitators on site. Following the clinic experience, in small groups, students discuss the patients they encountered during Patient Management Rounds to gain experience with presenting clinical patient cases to a group of peers and faculty, to present evidence supporting an examination or intervention completed during the experience, and to provide feedback and comments to peers.
Healthcare Provider Observation Trips Students observe a variety of healthcare providers (including physical therapists) to gain insight into other members of the healthcare team. Opportunities are provided in inpatient, outpatient, and home health settings. Once the observation trips are completed, students participate in small group discussions regarding their experiences.
Intensive Care Unit Trips Students accompany a physical therapist to an intensive care unit setting to observe equipment and PT interventions that may be used with a critically ill patient.

Full-time Clinical Education Experiences FAQ
When does full-time CE occur?
There are 4 full-time CE experiences:
CEI – (6 weeks) during the summer between years 1 & 2

CEII – (6 weeks) during the spring of year 2
CEIII – (13 weeks) beginning in fall of year 3
CEIV – (13 weeks) beginning in winter of year 3

How many clinical facilities does PTHMS have available to students? Where are they located?
We have agreements with many clinical facilities across the country. Although not every facility offers placements on an annual basis, the Directors of Clinical Education (DCEs) work with clinical sites to ensure there are placements for every student during each clinical experience.

- Most sites are in the Midwest but students may be able to select additional facilities throughout the country.
- All students must travel a minimum of 50 miles outside of Chicago for at least one full-time CE experience.
- PTHMS requires diversity in CE including patient age, clinical setting, facility size, socioeconomic/cultural background, clinic ownership, and geographic location.
- Although there are multiple facilities in Chicago, many clinical education experiences are located within the Chicago suburban areas, as well as states outside of Illinois.

What types of facilities are available for CE?
We have agreements with almost every type of clinical setting in which PTs practice, including acute care and rehabilitation hospitals, pediatrics, schools, sports medicine, skilled nursing, health & wellness/occupational health, outpatient, home health and specialty areas including lymphedema, women's health, and hippotherapy.

"I think I want to work in acute care; can I do all my full-time CE experiences in that setting?"
The mission of PTHMS is to train students to be competent in a **variety** of settings that represent common physical therapy practice so they can be successful on the licensing exam and be prepared to enter the practice of physical therapy. For that reason, all students are required to complete CE in EACH of the following situations:

1. Outpatients who have a variety of musculoskeletal conditions
2. Patients (inpatients or outpatients) with neurological conditions (adult or pediatric)
3. Inpatients whose medical conditions may change quickly (e.g. acute care, ICU, etc)
4. Patients whose conditions complement the other three clinical experiences and meet the expectations of a well-rounded, diverse clinical education schedule.

When and how are full-time CE placements chosen?
First and second year students select placements for CE I, CE II, and CE III in the fall and winter trimesters of year 1 and 2. Third year students select CE IV during the spring/summer trimester of year 2. We use the Exxat STUDENT TRAINING AND EDUCATION PLACEMENT SOFTWARE (STEPS) to match students' preferences with clinical placements. STEPS is a comprehensive, fully integrated tool that allows schools, Students, and Clinical Sites manage all information related to clinical placements in a centralized system. The placement system is deployed on the cloud, ensuring secure, real-time access to clinical site information. Students are able to search through all available clinical slots to determine their preferred choices. They can sort through sites based on setting, location, and interview requirement status. The system allows students to submit and rank their preferred slots. STEPS will then match students with a slot from their wish lists. If no match occurs, students will create a second wish list using the slots remaining after the first round.

Early Selection/Application
Some CE sites allow students to request a placement prior to the scheduled PTHMS match process. The DCE team will notify students of these placements and interested students may apply prior to the scheduled match process described above. We also have sites that request an application and interview prior to selecting students; these sites accept applications across the nation to determine the best match for their facility.

How do students get information about the CE sites?
From facility websites, the DCEs, and the Exxat system which lists when the CE experience is being offered, types of patients seen, clinical faculty, health requirements, work schedules, clinic locations, etc. In some cases,

information regarding housing, transportation, and work schedule is also available.

Does every facility offer slots for students for each CE experience?

No, facility issues such as staffing, patient population, and commitments to other PT schools factor into if/how many students can be accommodated. Center Coordinators of Clinical Education (CCCEs) at our partner facilities specify how many and which educational level students (1st year, 2nd year, etc.) they will accept. Northwestern is unable to dictate if and when sites offer placements, we can only offer slots offered by the CCCEs.

How is a student's performance in full-time CE evaluated?

The majority of PT schools use a web-based platform, the Physical Therapist Clinical Performance Instrument (PT CPI Web), to evaluate a student's clinical performance. The Clinical Instructor (CI) and student complete the PT CPI Web at the mid and final points in the CE experience. The CI provides ratings and written information about the student's performance. In consultation with the CI, the University assigns a grade of Pass or Fail.

I worked as an aide in a great facility. Can I do a CE there?

No, students may not do a CE at a facility in which they have previously worked. This places the facility at risk of being biased and limiting the staff's ability to be honest and candid in assessing a student's clinical performance.

What if I need to be in Chicago during a particular CE because of personal or financial reasons?

We believe clinical education is a great opportunity to experience and provide care in settings across the country. The Exxat STEPS match process allows students to independently schedule their CE needs. PTHMS cannot promise students will be placed in Chicago for personal reasons unless a rationale is documented by an appropriate health care provider or Accessible NU. All students must complete at least one placement 50+ miles outside Chicago.

What if I need to attend to a family emergency during my clinical education experience?

Contact your clinical instructor (CI) and assigned DCE as soon as possible. You will develop a plan with your CI to make up time away and inform your assigned DCE.

Is housing provided on CE experiences?

Some facilities will offer suggestions on housing, but we have found students are extremely resourceful on their own when it comes to finding housing by networking with family and friends, contacting local organizations, or using the APTA listserv, Craigslist, Physical Therapy Student Facebook page, Rotating Room, Airbnb, etc.

Will there be other students at my CE site?

Facilities specify how many students they can accommodate for each experience. In some settings, there may be more than one student, either from PTHMS or another university.

Will I be expected to perform additional tasks beside treat patients during CE experience?

In addition to direct patient care, students are expected to experience a variety of the roles of a physical therapist during CE experiences, such as educator, administrator, consultant, assessment of patient risk factors, and health and wellness promotion. This includes:

- Collaboration with their clinical supervisors during CE I and II to contribute back to the facility as a thank you for helping to participate in their education;
- Completing a project during CEIII and IV. Potential contributions/projects might include presentation of an in-service, updating or translating the clinic's patient handouts, website, or student manual.

During a CE experience, as the student progresses and demonstrates that they are meeting expectations, additional opportunities may be available. Depending on the facility resources, these might include activities such as surgical observation or participation in specialty therapy programs.

What faculty members are involved in full-time CE?

Three Directors of Clinical Education (DCEs) coordinate full-time CE. Their role is to recruit clinical sites, develop new sites, manage the legal clinical education agreement process, conduct continuing education seminars to

develop clinical educators' skills, and monitor quality of sites and the experiences of students during CE.

If I know of a facility that is not on the list, can I do a CE there?
Students do not arrange new sites but the DCEs will accept a maximum of two documented recommendations from students for new sites. As we have an extensive amount of outpatient orthopedic clinical sites, we only accept new site recommendations for acute care, pediatrics, inpatient/outpatient rehabilitation, skilled nursing, or specialty centers (e.g. Pelvic health, sports medicine, etc.). Once a student makes a new site recommendation, faculty contact/visit the site to determine if it is an appropriate placement. If an agreement is signed and the staff offers clinical placements, that facility will be available to all students during the selection process.

The Synthesis Project FAQ

What is the Synthesis Project?
The purpose of the Synthesis Project is for students to learn how to conduct inquiry into a narrowly defined topic of relevance to the profession of physical therapy. Through supervised group work, students will learn to construct an operationally feasible proposition for inquiry, develop a plan of action, make observations about that proposition, and interpret and conclude from those observations. Conclusions will be intended to serve as a vehicle to integrate the new information within the narrow field and acquired in the program at Northwestern.

Is this course required, how is it graded?
Yes, all students are required to complete and pass the course. This course is graded Pass/Fail.

What will I do while working on the project?
You will formulate a narrow research hypothesis or tightly focused, purposive project; review specifically-related literature; analyze costs and procure necessary resources; develop a feasible plan of action and method for achieving successful completion of the project; defend the project proposal verbally and modify the plan according to feedback received; implement the plan according to agreed upon method of action; perform primary data-gathering and data analysis; present final project to peers and engage in scholarly discussion.
Do I have to come up with my own project idea? Can I choose my group?
No, projects are developed by full-time faculty of PTHMS, representative of their own scholarly activity, and offered to students in the first trimester. In some cases, a student may approach a faculty member about an idea for a project. A process that matches each student's interests with faculty needs forms the groups.

What types of projects are available?
Depending on faculty and student interest, typically three types of projects exist including research (quantitative and qualitative; lab based and clinical), program development (educational and clinical), and advocacy.

PTHMS Research FAQ

What kind of research do PTs do?
PTs do research across a broad spectrum of topics and levels of analysis. For example, some PTs do research on the ionic mechanisms of neurotransmitter actions within motor neurons of the spinal cord. Others do research on the delivery of health care in third world countries. There is a particular emphasis of PT research on evidence-based practice. This means that empirical research methods are used to quantify the effectiveness of existing and novel methods of treatment used in PT. This research ensures that the practices used by PTs are effective and continue to improve and evolve with conjunction with advancements in technology and scientific knowledge.

What sort of research is being done in Physical Therapy at Northwestern?
A broad spectrum of research is being conducted within the Department of PTHMS. Research in Physical Therapy and rehabilitation at Northwestern extends well beyond the department and includes collaborative work with the Departments of Physical Medicine and Rehabilitation, Biomedical Engineering, Mechanical Engineering,

Orthopedics, Neurology, Physiology, and Biostatistics as well as extensive collaborations with the Shirley Ryan AbilityLab (formerly the Rehabilitation Institute of Chicago).

Do students conduct research as part of their professional training (DPT) program?
All students in the DPT program are required to complete a Synthesis Project over the duration of the program. The purpose of the Synthesis Project is for the student to learn how to conduct inquiry into a narrowly defined topic of relevance to the profession of physical therapy. Specifically, through supervised group work, students will learn how to construct an operationally feasible proposition for inquiry, how to determine methods of data collection about that proposition and how to interpret and conclude from those observations. The conclusions will be intended to serve as a vehicle to integrate the new knowledge with that existing in the narrow field and that acquired over the course of the program at Northwestern. There is additionally the specific purpose of developing students' ability to communicate verbally and in writing about professional matters.

Do all faculty conduct research?
Yes, all faculty are required by the University and the American Physical Therapy Association to conduct scholarly research. This may take the form of studies of education delivery, clinical education, survey based population studies or laboratory studies. Some faculty members have appointments with more of an emphasis on research whereas others have appointments that have more emphasis on teaching or clinical service.

How can students get involved in research? Are research assistant positions available?
Students may volunteer to assist with research projects including data collection, coordination of participants, assistance with mailings etc. Assistant or Coordinator positions may be available in individual labs. Positions are typically funded by grants so availability varies; opening are posted by HR (http://www.northwestern.edu/hr).

The Dual DPT/MPH Degree

PTHMS has partnered with the Program in Public Health to offer students the option to complete both the DPT and the Master of Public Health in 3 years. This dual degree will prepare physical therapists for careers as leaders, spanning boundaries between physical therapy and public health. For details about the application process and curriculum, visit: https://www.feinberg.northwestern.edu/sites/pthms/our-programs/dpt-mph.html.

The Interdisciplinary DPT/PhD Degree Program

PTHMS and the Departments of Biomedical Engineering, Mechanical Engineering, and Electrical Engineering & Computer Science offer a joint degree program that awards the DPT from the Feinberg School of Medicine and a PhD from the McCormick School of Engineering (http://www.mccormick.northwestern.edu/). This marries two disciplines for one clear benefit: improved rehabilitation therapies and technologies for patients with movement disorders. Rehabilitation and engineering, as it relates to movement science, is a distinct and novel research field that requires an interdisciplinary graduate education and training program. Although this discipline has its roots in the fields of medicine, engineering and neuroscience, work at the interface of these fields requires training that is not available in the traditional curriculum. Students who receive this interdisciplinary training are expected to become leaders in engineering, rehabilitation sciences, physical therapy, and device development for the study and restoration of human function in academic, government, healthcare, and industry settings. Their scientific and engineering contributions will have a significant impact on rehabilitation related healthcare costs. DPT/PhD students are funded by Northwestern, Feinberg School of Medicine, and NIH/Howard Hughes Medical Institute.

Mission: Prepare graduates for careers in rehabilitation and engineering research with strong relevance to physical therapist patient care.
Purpose: Research engineers are making important contributions to the science underlying rehabilitation and disability but many lack formal training and experience in clinical care. Graduates will be licensed physical therapists with expertise in engineering approaches to movement science and rehabilitation. They will bridge faculty appointments in engineering and rehabilitation and be strong competitors for national research funding.

Faculty Support: Joint advising from select faculty in Physical Therapy & Human Movement Sciences, Physical Medicine & Rehabilitation, Physiology, and Biomedical, Mechanical, and Computer Science/Electrical Engineering.

Course of Study:
Years 1-2: Required engineering graduate coursework and advancement to PhD candidacy; depending on the program, this may require completion of the qualifier exam or proposal defense.
Years 3-5: DPT coursework with ongoing PhD research; some of the coursework to satisfy PhD elective requirements; research that leads to completion of a portion of PhD level project.
Years 6-7: PhD research completed and clinical involvement to acquire advanced clinical problem solving skills; special courses in motor control physiology, engineering in the research lab (programming and measurements), rehab engineering, special topics and tutorials.

Student Funding:
Years 1-2 (PhD coursework): University Fellowship and NIH Training Grant funds (tuition support and stipend)
Year 3-5 (DPT coursework and completion): Tuition support and stipend from Feinberg School of Medicine
Years 6-PhD completion: Tuition and stipend support from NIH training grant funds, independent pre-doctoral awards or research advisor with supplement from part time clinical practice

Physical Therapy Residencies

An important trend in physical therapy training is the emergence of residency and fellowship programs. Physical Therapy Residency programs are open to licensed physical therapists pursuing advanced specialty practice in one of the specialty areas recognized by the American Board of Physical Therapy Specialties. Under the Department's partnership with the Shirley Ryan AbilityLab, joint Orthopaedic and Neuroscience residencies are now offered: https://www.feinberg.northwestern.edu/sites/pthms/our-programs/residencies/index.html.

Financial Aid

Northwestern University's primary objective in providing financial assistance is to ensure that students with financial need will not be denied enrollment due to a lack of financial resources. Financial status has no bearing on the admissions process. The Department of Physical Therapy and Human Movement Sciences is committed to making the cost of education manageable for students of all income levels. Many physical therapy students receive financial aid from a variety of sources including government-funded loan programs and federally subsidized loans. There are several scholarships available to DPT students who meet specific criteria. In addition, a number of private organizations offer grants, scholarships, and loans. The Chicago campus Office of Financial Aid serves all DPT students; for additional resources including the current tuition rates, please visit the Office of Financial Aid website to learn more: http://chicagofinancialaid.northwestern.edu/landing/physical_therapy.html.

DPT Student Scholarships for 1st Year Students

Early Decision Applicant Scholarships: Three scholarships of $10,000 may be awarded annually.
Merit Scholarships: Ten scholarships of $5,000 may be awarded annually.
Alumni Scholarship: One award of $2,000 may be awarded annually.
Diversity Scholarship: One scholarship of $5,000 may be awarded to a first year student with $2,500 awarded the first year, and pending service to PTHMS, $2,500 the second year.
Janet L. Hemzacek Memorial Scholarship: One scholarship of $4,000 may be awarded annually.
Edna Foster Wright Scholarship: One scholarship of $4,000 may be awarded annually.
Sally C. Edelsberg Scholarship: One scholarship of $4,000 may be awarded annually.

Scholarship applications are separate from the application from admission and due each November: https://www.feinberg.northwestern.edu/sites/pthms/our-programs/dpt/admissions/tuition-scholarships.html.

Additional Information

Location: PTHMS is located on the NU Chicago campus in the neighborhood of Streeterville. Some students live within walking distance of campus while others choose to live in nearby neighborhoods or suburbs. The Chicago Neighborhood and City Guide (http://www.chicagoneighborhoods.cc) has detailed information and the chart below summarizes distance from campus for some of the popular city neighborhoods.

Chicago Neighborhood	Zip Code(s)	Miles from NU Campus
Streeterville	60611	NU Chicago Campus
Gold Coast/Old Town	60610	0.5-1.1 miles
River North	60654	1.1 miles
Lincoln Park	60614	3.5 miles
Bucktown/Wicker Park	60622, 60647	3.6 miles
Lakeview	60613, 60657	4.5 – 5.2 miles
Rogers Park	60626	9.1 miles
Evanston	60201, 60202	14.1 miles

Housing: Campus housing for graduate students is available on the Evanston Campus. For information, visit the Residential Services website: http://www.northwestern.edu/living/. The majority of graduate students choose to live off-campus. Northwestern University does not provide apartment-finding services but resources can be found through the Office of Off-Campus Life: http://www.northwestern.edu/offcampus/index.html.

Public Transportation: Parking is available on campus but most DPT students do not have a car as city buses and trains provide sufficient options for accessing campus. A discounted Chicago Transit Authority (CTA) pass, included in the required student fees, provides unlimited rides while school is in session: http://www.transitchicago.com.

Sample 1st Year Student Schedule

<table>
<tr><th>Time</th><th>Monday</th><th>Tuesday</th><th>Wednesday</th><th>Thursday</th><th>Friday</th></tr>
<tr><td>8:00</td><td rowspan="2">Kinesiology</td><td rowspan="2">Examination & Evaluation</td><td rowspan="2">Kinesiology</td><td rowspan="2">Physiology</td><td rowspan="2">Anatomy Lecture</td></tr>
<tr><td>9:00</td></tr>
<tr><td>10:00</td><td rowspan="2">Intro to Clinical Decision Making</td><td rowspan="2">Psychosocial/ Human Behavior</td><td rowspan="2">Intro to Clinical Decision Making</td><td rowspan="2">Psychosocial/ Human Behavior</td><td rowspan="2">Anatomy Lab</td></tr>
<tr><td>11:00</td></tr>
<tr><td>12:00</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>1:00</td><td rowspan="4">Synthesis Research Project</td><td rowspan="4">Anatomy Lab</td><td rowspan="4">Patient Experiences/ Clinical Field Trips</td><td>Examination and Evaluation Lab</td><td rowspan="2">Kinesiology</td></tr>
<tr><td>2:00</td></tr>
<tr><td>3:00</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>4:00</td></tr>
</table>

Student Survey Classes of 2018-2022					
Hometown	**2018**	**2019**	**2020**	**2021**	**2022**
Chicago & suburbs	25%	36%	57%	34%	39%
Midwest – not Chicago area	35%	26%	13%	21%	28%
West Coast	12%	15%	15%	21%	13%
East Coast	12%	13%	9%	17%	9%
Southeast	7%	4%	2%	2%	0%
Southwest	5%	3%	2%	0%	1%
Other	4%	3%	2%	5%	10%
Undergraduate Schooling	**2018**	**2019**	**2020**	**2021**	**2022**
4 year public university/college	59%	64%	62%	60%	55%
4 year private university/college	37%	38%	36%	38%	45%
Some courses at 2 year institutions	13%	7%	6%	9%	10%
Multiple institutions	7%	8%	6%	3%	4%
Enroll in PT school directly from undergraduate?	**2018**	**2019**	**2020**	**2021**	**2022**
Yes	53%	61%	47%	59%	49%
No, had to complete prerequisites	17%	8%	11%	15%	16%
No, had been working in another field	30%	31%	42%	26%	35%
Undergraduate Major	**2018**	**2019**	**2020**	**2021**	**2022**
Basic Sciences	19%	17%	45%	19%	23%
Movement or Exercise Sciences	44%	54%	34%	48%	42%
Behavioral Sciences	12%	18%	4%	8%	13%
Other Liberal Arts	5%	6%	6%	7%	6%
Performing Arts (music, dance, etc.)	4%	0%	4%	2%	3%
Other	21%	11%	15%	17%	20%
Number of PT school applications?	**2018**	**2019**	**2020**	**2021**	**2022**
Only Northwestern	13%	15%	11%	24%	19%
2-5	17%	25%	34%	24%	25%
6-10	56%	44%	36%	33%	41%
More than 10	13%	15%	19%	19%	16%

Factors for choosing Northwestern?	2018	2019	2020	2021	2022
Reputation	97%	99%	94%	93%	97%
Location	89%	92%	94%	95%	91%
Curriculum	68%	80%	49%	62%	62%
Length of program	23%	19%	26%	28%	30%
Faculty	61%	71%	55%	55%	45%
Research Opportunities	51%	39%	47%	48%	46%
Facilities	55%	54%	45%	50%	41%
Contact with Alumni	41%	21%	32%	40%	23%
Area you live in while in school?	**2018**	**2019**	**2020**	**2021**	**2022**
Streeterville or Downtown	9%	4%	6%	9%	20%
Lincoln Park/Old Town	13%	8%	17%	14%	19%
South or West loop	1%	6%	2%	3%	4%
Gold Coast	11%	7%	2%	5%	1%
Bucktown/Wicker Park	3%	7%	4%	2%	6%
Lakeview	36%	49%	45%	52%	33%
Uptown/Rogers Park	12%	6%	9%	2%	0%
Suburbs	8%	8%	9%	10%	12%
Other	7%	6%	6%	3%	4%
Living situation while in school?	**2018**	**2019**	**2020**	**2021**	**2022**
Live alone	12%	10%	11%	12%	13%
Live with 1 roommate	34%	26%	11%	34%	35%
Live with multiple roommates	43%	51%	57%	40%	35%
Live with parents/family	11%	13%	21%	14%	17%
Your rent/mortgage while in school?	**2018**	**2019**	**2020**	**2021**	**2022**
$0 (live with family, no housing costs)	13%	15%	17%	16%	17%
$700 or less/month	19%	15%	11%	3%	7%
$700 - $1,000/month	51%	54%	60%	52%	48%
Over $1,000/month	17%	15%	13%	29%	28%
Do you use a car while in school?	**2018**	**2019**	**2020**	**2021**	**2022**
Yes, I own a car	29%	28%	34%	31%	28%

Borrow cars occasionally when needed	9%	11%	13%	5%	9%
Use short-term rentals (I-Go, Zip cars)	4%	4%	2%	4%	1%
No	61%	57%	53%	60%	64%
How do you commute to school?	**2018**	**2019**	**2020**	**2021**	**2022**
Walk	27%	19%	13%	21%	32%
Drive	7%	8%	4%	7%	13%
Bike			15%	10%	6%
CTA	76%	83%	87%	88%	72%
Metra train	3%	8%	9%	5%	7%
Average one-way commute?	**2018**	**2019**	**2020**	**2021**	**2022**
Less than 15 minutes	16%	8%	7%	12%	19%
15-30 minutes	50%	58%	55%	46%	62%
30-45 minutes	20%	26%	17%	26%	4%
45-60 minutes	9%	4%	15%	9%	9%
Over 60 minutes	5%	3%	6%	7%	6%
Do you have a job while in school?	**2018**	**2019**	**2020**	**2021**	**2022**
No	76%	72%	60%	72%	71%
Yes – work less than 10 hours/week	23%	28%	36%	26%	28%
Yes – work more than 10 hours/week	1%	0%	4%	2%	1%
Average book/supply $ per trimester?	**2018**	**2019**	**2020**	**2021**	**2022**
Less than $300	61%	99%	98%	79%	87%
More than $300	39%	1%	2%	21%	13%
Average hours/week studying?	**2018**	**2019**	**2020**	**2021**	**2022**
0-20 hours	40%	58%	60%	60%	61%
More than 20 hours	60%	42%	40%	40%	39%