

**Proposal for  
GRADUATE CERTIFICATE IN NEUROLOGICAL REHABILITATION**

Program in Physical Therapy  
School of Health Sciences  
Oakland University

## **SUMMARY**

Oakland University offers several degree programs in Physical Therapy including an entry-level Doctorate of Physical Therapy (DPT), the post-professional Master of Science in Physical Therapy (MSPT), and the post-professional Doctorate of Science in Physical Therapy (DScPT). The entry-level DPT prepares graduates to practice as generalists in a wide variety of settings within the field of physical therapy. This program provides comprehensive preparation in the basic and applied sciences and in the fundamentals of research design. The entry-level program recently transitioned (September 2002) from a Master of Physical Therapy degree to the current DPT. Since first offering a Physical Therapy degree in 1979, Oakland University has continued to meet the expanding educational needs of the entry-level student.

Oakland University has also strived to meet the educational needs of the professional, practicing therapist. Post-professional educational opportunities offered through the Program of Physical Therapy include the MSPT, the DScPT, and two graduate certificates. The current programs prepare expert clinicians to practice in autonomous environments, conduct clinical research, participate in formal and informal education programs, and contribute to their professional and social communities. In 2001, the University Board of Trustees approved the DScPT. In April 1996, the Graduate Council approved the Graduate Certificate in Orthopedic Manual Physical Therapy (GCOMPT) and, in February 1997, approved the graduate Certificate in Pediatric Rehabilitation (GCPR). Both certificates address the needs of physical therapists interested in specializing in the orthopedic and pediatric areas of practice, respectively.

The proposed **Graduated Certificate in Neurological Rehabilitation (GCNR)** would provide advanced theoretical and clinical training for therapists interested in specializing in the areas of Neurorehabilitation and Geriatrics. The GCNR would fill a void that exists within the current Michigan educational programs. Six universities within the state of Michigan offer entry-level physical therapy educational programs, however, none provide graduate study specifically in the area of Neurorehabilitation. Therefore, Oakland University would be the first physical therapy program in the state to offer the GCNR and the first to provide a comprehensive neurorehabilitation curriculum for the DScPT students.

The GCNR would allow practicing therapists to take graduate level courses aimed at developing the specialty skills of a master clinician in treating those individuals with a neurological injury such a stroke, multiple sclerosis, traumatic brain injury, and Parkinson's disease. Often these individuals are treated within a multidisciplinary team format. Because of this, the GCNR will be offered to both physical and occupational therapists. In addition, similar to the other Oakland University graduate certificates, physical therapists may apply the 17 GCNR credits towards completion of the 90 credit post-professional DScPT degree or the 36 credit post-professional MSPT degree. Occupational therapists will gain specialization in neurological rehabilitation, however, are not eligible for the DScPT

degree. Since this program is being offered to working professionals, alternative scheduling and Web-enhanced coursework will allow flexibility for students enrolled in this program. Courses will be offered such that students will be able to complete the certificate in a two year period. Oakland University full-time and part-time faculty, adjunct instructors and expert clinicians will provide the GCNR instruction. The primary full-time faculty include Cathy A. Larson and Susan Saliga. Dr. Larson has a doctorate degree in Kinesiology from the University of Michigan with an academic focus in motor control, neuroscience, biomechanics and movement analysis and over 20 years clinical experience in Adult Neurorehabilitation. Susan Saliga has a masters degree in Health Science and is currently working on a doctorate degree in Health Science with an emphasis in neurorehabilitation at the University of St. Augustine. Professor Saliga has 18 years clinical experience in neurorehabilitation and geriatrics and is APTA board certified as a Neurological Clinical Specialist.

## **I. RATIONALE**

Currently many graduates are educated as generalists in the field of physical therapy. Healthcare is changing rapidly and with it, the need for advanced knowledge, understanding, and skill in managing patient care. In today's healthcare environment, therapists are being challenged to be efficient and effective in a variety of specialty areas. This is evidenced by the seven Board Certified Specialty programs offered by the American Physical Therapy Association (APTA), of which Neurological Certification is one. The GNCR provides advanced theoretical and clinical training in Neurorehabilitation and Geriatrics, specifically to design to emphasize clinical decision-making, case management skills, utilization of technology, and advanced intervention skills. The GCNR will begin to prepare physical therapists for Board Certification in Neurology. Ultimately, students will gain new levels of knowledge which will ultimately improve the care of individuals with neurological dysfunction.

Like the Graduate Certificate in Pediatric Rehabilitation, this certificate would be open to Physical and Occupational therapists. Often these two professions work towards the same patient goals; thus, patient management will be most efficient and effective when both physical and occupational therapists operate using the same philosophy and updated strategies of patient care. Offering this certificate is a concerted effort to enhance neurorehabilitation knowledge and master skills within both professions thus providing the most impact on patient care. In the state of Michigan, there are over 4,000 practicing physical therapists and approximately 2,500 practicing occupational therapists. A significant number of the physical therapists belong to the neurological section of the APTA and/or work in settings that treat patients with a neurological injury. This certificate will be marketed to these professionals. Physical therapists who complete this certificate may apply these credits to the DScPT at Oakland University. In addition, other DScPT students and those enrolled in the GCPR program may take GCNR classes as electives.

## **II. RELATIONSHIP OF DPT, MSPT, DScPT, GCOMPT, GCPR AND GCNR Programs**

The current entry level DPT prepares students for practice in the profession of physical therapy. Course work emphasizing knowledge in the basic and applied sciences (122-130 credits) prepares the student to successfully perform the entry-level professional skills needed in physical therapy practice. This degree allows the graduate to take the

professional licensure examination. Following completion of a four year Bachelor's degree and pre-requisite courses, the student is admitted to the three year physical therapy professional program.

The Doctorate of Science in Physical Therapy develops the intricacies of advanced clinical problem solving and research within a clinical specialty. Advanced graduate course work (90 credits beyond a Bachelor's degree and 54 credits beyond a Master's degree) with the completion of an individual research project is the capstone experience that leads to a well versed clinical specialist with sound research knowledge. The duration of this program when taken on a part-time basis is approximately 5 -6 years with a maximum of eight years allowed for completion. For those students not interested in obtaining a Doctorate degree, a Masters of Science in Physical Therapy (36 credits) is offered in the same specialty areas as the DScPT.

The Graduate Certificate in Neurological Rehabilitation (GCNR) allows for specialization in the area of Neurological Rehabilitation and Geriatrics. Students will take 17 credits of graduate coursework emphasizing updated knowledge in the areas of motor control, motor learning, neuroscience, movement analysis, geriatrics and aging issues, clinical decision-making, evidence-based practice, case management skills, utilization of technology, and advanced intervention skills. There is considerable interest in the GCNR as evidenced by numerous inquiries as to when Oakland University will be expanding our current certificate programs from primarily focusing on orthopedics (OMPT) and pediatrics (GCPR) to neurorehabilitation and geriatrics (the proposed GCNR). This certificate offers course work that compliments existing programs yet draws upon a new segment of the physical therapy profession. Past continuing education programs offered through Oakland University specifically focusing in the area of neurological rehabilitation have been well attended and clinicians continually complain that few educational opportunities exist locally focusing on neurorehabilitation.

For physical therapists, the 17 credits offered in the proposed certificate can be applied to the DScPT or the MSPT. The proposed certificate's courses will be open to all DScPT and MSPT students and may be utilized as electives for the other certificate programs. This will allow students to structure an individualized curriculum to meet their specific goals and needs. To best utilize the resources within the physical therapy program, to maximize class sizes and to efficiently meet the scheduling needs of the students, the currently proposed GCNR has been integrated with the GCPR course offerings. Coordination between all graduate programs will continue to occur.

The GCNR will also begin to prepare graduates to meet the requirements to obtain the APTA Neurologic Clinical Specialist (NCS) Board certification specifically in the areas of patient care, patient education, consultation and interpretation of research. Following completion of the GCNR, physical therapists wishing APTA NCS certification still need to acquire 4,000 hours of neurological clinical practice and experience in administration. Currently there are only 12 physical therapists in Michigan with NCS certification. Completing the proposed GCNR will be a major step forward for those wishing to obtain this prestigious APTA NCS certification.

### III. PROGRAM PLAN

#### A. ADMISSIONS CRITERIA

Admission requirements for Oakland University's Graduate Certificate in Neurological Rehabilitation include the following:

1. Graduation from an accredited university with an entry-level Bachelor's, Master's or Doctorate degree in Physical Therapy or Occupational Therapy or its equivalency with a 3.0 cumulative GPA.
2. Candidates must complete an application for admission to Oakland University's graduate school and submit it to the Office of Graduate Study. All candidates must meet all admissions criteria of Oakland University's Graduate School.
3. Eligibility for licensure as a physical therapist or occupational therapist in the State of Michigan.
4. Two years of clinical experience in neurorehabilitation is required. The graduate PT Admissions Committee may waive the two year requirement under special circumstances.
5. Physical Therapy students pursuing the MSPT or DScPT degrees will be required to present their GRE scores at the time of application to the MSPT and DScPT programs.
6. Foreign educated students must present TOEFL scores.

#### B. GRADUATE CERTIFICATE REQUIREMENTS

The proposed graduate certificate consists of **17 credits** of practical, clinical, and theoretical course work as follows:

PT 536	Motor Control and Motor Learning: Theory and Application	(4)
PT 537	Foundations of Geriatric Practice	(3)
PT 502	Understanding Evidence-based Practice	(2)
PT 538	Assessment of Neurological Dysfunctions	(3)
PT 539	Developing Interventions in Neurorehabilitation	(3)
PT 610	Clinical Neurophysiology	(2)

#### C. COURSE DESCRIPTIONS

##### **PT 536 - MOTOR CONTROL AND MOTOR LEARNING: THEORY AND APPLICATION (4)**

The goal of this course is to integrate recent theories in neuroscience, motor learning, motor control, biomechanics and movement analysis in order to enhance and expedite patient recovery following neurological injury. Construction of intervention sessions and patient interaction to optimize the learning capabilities of the patient will be examined. Examination of motor control principles within functional activities will be analyzed with patient case examples common to neurological rehabilitation. Lectures, lab experiences, web materials, case studies and discussion will enhance the learning and integration of the course material.

**PT 537 - FOUNDATIONS OF GERIATRIC NEUROLOGICAL PRACTICE (3)**

This course reviews the pertinent physiological changes that occur with aging and their impact on the therapeutic effects of intervention with those individuals that have sustained a neurological injury. Psychosocial and cognitive aspects of aging and their influence on the recovery of the geriatric adult will be discussed.

Factors affecting the patient, family, and the patient/family relationship in situation of chronic illness and loss will be examined. Learning formats will include lecture, web-based materials, case studies, and small group discussions.

**PT 502 - UNDERSTANDING EVIDENCE-BASED PRACTICE (2)**

An overview of evidence-based practice and its application to examination, evaluation, diagnosis, prognosis, and intervention in physical and occupational therapy. The course will also include a review of frameworks for clinical decision making, qualitative and quantitative research designs, and methods of assessing professional literature related to approaches used by healthcare professionals.

**PT 538 - ASSESSMENT OF NEUROLOGICAL DYSFUNCTION (3)**

This course is designed to enhance the examination and evaluation skills of therapists working with individuals with neurological dysfunctions. Evidence supporting or questioning current and new neurological examination procedures will be scrutinized. A number of objective function outcome measures will be presented and appropriate utilization of these measures will be discussed. Utilization of current technology such as motion analysis systems, force plates, electromyography, electrogoniometry, etc. used to enhance and objectify the examination and evaluation of individuals with neurological dysfunction will be significant part of this class. Lecture, lab experiences, web-based material, case studies, small group problem solving and discussion will enhance the learning and integration of course material.

**PT 539 - DEVELOPING INTERVENTIONS IN NEUROREHABILITATION (3)**

This course examines the clinical problem-solving skills necessary for the management of functional limitations as a result of a neurological dysfunction. Specifically, the use of observations skills to identify movement deficits during functional tasks will be discussed. Evidence from a variety of sources supporting these clinical interventions will be examined. Medical management of relevant symptoms displayed by individuals with neurological dysfunction will be investigated. Integration of pre-requisite classes will assist in determining intervention for presented case studies. The format for this class will include lectures, laboratories, video-tape reviews, small-group problem-solving and discussion. Pre-requisites: PT 538

**PT 610 - CLINICAL NEUROPHYSIOLOGY (2)**

Lecture and laboratory related to the morphology, development, function and integration within the neurological system. The clinical significance of neurological lesions to physical therapy practice will be discussed.

**D. RECRUITMENT AND RETENTIONS PLANS**

Students will be recruited from within Michigan and nationwide. Courses will be offered in a flexible format which may include evening classes, block scheduling or via the Internet to meet the needs of working professionals. The proposed certificate will be advertised statewide and nationally using publications of the Michigan Physical Therapy Association, Michigan Occupational Therapy Association, American Physical Therapy Association,

American Occupational Therapy Association and American Physical Therapy Association Neurology Section Newsletters. Brochures advertising the program will be sent to all clinical facilities affiliated with Oakland University. In addition, this program will be marketed via the web using sites appropriate to this audience. At present, we are not aware of any similar certificate programs for physical and occupational therapists in Michigan.

#### **E. PLANNED ENROLLMENT LEVELS**

For this certificate, it is anticipated that there will be an enrollment of 5- 8 students per year. In addition, students enrolled in the MSPT and DScPT who are not enrolled in the certificate may take these courses as electives, therefore actual class size may be higher.

#### **F. ASSESSMENT OF CERTIFICATE PROGRAM**

A minimum of three forms of assessment will be used. All courses and instructors will be evaluated using the standard forms provided by the School of Health Sciences. In addition, graduates of the program will be surveyed as they exit the program, and again at three years post graduation regarding successful completion of program goals, impact of certificate on practice, and satisfaction with the program and it's resources. Data related to numbers of potential students, enrolled students, and graduates will be tracked and reported.

### **IV. NEEDS AND COSTS OF THE PROGRAM**

#### **A. Additional Resources Needed**

The proposed certificate program is an outgrowth of the existing DScPT and MSPT. Three of the six proposed courses will be taught for the first time. Existing physical therapy faculty will teach the courses and no major equipment purchases are anticipated for the program. We are requesting two additional Graduate Assistantships to support students enrolled in this certificate.

#### **Tentative Budget for this Certificate Program:**

<u>Year 1</u>	<u>Income</u>	<u>Expenses</u>
<b>5 students taking 9 credits each</b>	<b>\$9,927.00</b>	
1 Graduate Assistantship		\$8,000.00
Marketing		\$1,000.00
Supplies		\$ 927.00
<b>TOTAL</b>	<b>\$9,927.00</b>	<b>\$9,927.00</b>
<u>Year 2</u>		
5 students taking 8 credits each	\$8,824.00	
5 students taking 9 credits each	\$9,927.00	
2 Graduate Assistantships		\$16,000.00
Marketing		\$ 1,500.00
Supplies		\$ 1,251.00

#### **B. Plan for Meeting Program Costs**

All courses offered through this certificate program will be offered for university credit. Tuition dollars generated will support the program. It is anticipated that the time for completion of this program on a part-time basis will be two years.

**C. Program Impact**

Oakland's current program in physical therapy has a strong reputation for excellence and attracts undergraduate and graduate students from around the state as well as nationwide. The proposed program will further strengthen our standing in the community. Attracting a new group of health care professionals to Oakland University is a strength of this program.

**V. IMPLEMENTATION**

Implementation of the proposed certificate program will be contingent upon approval from the Graduate Council of the hiring of the first pre-approved faculty member for the DPT and DScPT programs, and approval of the graduate certificates.

**A. Faculty**

The current faculty in the Program in Physical Therapy are well qualified to provide this certificate. Dr. Cathy A. Larson has a Ph.D. in Kinesiology from the University of Michigan specializing in the areas of motor control, motor learning, neuroscience and movement analysis. Dr. Larson also has a bachelor's degree in Physiology from Michigan State University and a masters of science degree in Physical Therapy from the University of Alabama in Birmingham and over 16 years clinical experience in Adult Neurorehabilitation. Susan Saliga has a bachelor's degree in physical therapy from Wayne State University, a masters degree in Health Science and is currently working on a doctorate degree in Health Science with an emphasis in neurorehabilitation at the University of St. Augustine. Also, Professor Saliga has 18 years clinical experience in neurorehabilitation and geriatrics and is APTA board certified as a Neurological Clinical Specialist. Dr. Chris Stiller completed a Ph.D. in Educational Psychology at Michigan State University and Dr. Beth Marcoux's Ph.D. is in Health Behavior and Health Education through the University of Michigan's School of Public Health. All have many years of teaching experience at the University level. CV's for these faculty are attached. Part-time faculty and expert clinicians from different disciplines in rehabilitation with a background in education will also be used within the curriculum.

**B. Course Offerings Each Semester**

As noted previously, courses in this certificate program may be offered over the Internet, in blocks of time typically over extended weekends or in the evenings. The university standard of 1 credit being equivalent to 15 contact hours will be used for courses that are scheduled in a non-traditional format (i.e. weekend courses).

**VI. APPROVALS**

This Certificate was reviewed and approved by the faculty in the Program in Physical Therapy in October 2002.