



CASE WESTERN RESERVE  
UNIVERSITY  
SCHOOL OF MEDICINE

**Proposed  
Master of Science in Physician Assistant Studies  
Case Western Reserve University School of Medicine**

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# **Proposed Program: Master of Science in Physician Assistant Studies**

## **Program Development Plan**

### **1. Intellectual Rationale and Purpose:**

The School of Medicine of Case Western Reserve University (CWRU) proposes a full-time Master of Science in Physician Assistant (PA) Studies program to be housed in the Office of Medical Education. As the PA profession has evolved to one that requires a high degree of academic rigor, the accrediting body for Physician Assistant programs – the Accreditation Review Commission on the Education for the Physician Assistant (ARC-PA) – has stipulated a master's degree as the appropriate degree level.

The process for accreditation of a master's degree program in Physician Assistant Studies is a long one. The ARC-PA accredits programs offered by higher education institutions chartered by and physically located in the United States. The institution has to have the appropriate regional accreditation and be in good standing. The accrediting body must authorize the institution to confer the Master of Science degree in Physician Assistant Studies. The requirement of a master's degree is a relatively new one in the field. All new programs must, however, confer a master's degree on graduate. With only a few programs still being grandfathered, currently 91% of programs offer a master's degree.

The ARC-PA has a mandatory site visit, and those are planned well in advance. For CWRU, the site visit is scheduled for December 3-4, 2015, in order to offer the degree in the 2016-2017 academic year. By the time of the site visit, all appropriate approvals from the School of Medicine, Case Western Reserve University, and the Ohio Board of Regents must be attained. The process for this proposal will be the School of Medicine's Faculty Council, then to the University's Faculty Senate, and finally to the Ohio Board of Regents.

The CWRU program will graduate caring physician assistants equipped with the competencies to deliver the highest quality health care under the supervision of a licensed doctor of allopathic or osteopathic medicine, to be leaders in the profession, and who are devoted to the positive transformation of the nation's health care system. The program will build upon the School's

reputation as a leader and innovator in medical education and combine a didactic foundation of great depth with world-class clinical experiences. The program will require the completion of seven consecutive semesters over 27 months. The first fifteen months will be devoted to preclinical studies, the remaining twelve months to clinical experiences in primary care and the medical and surgical specialties. All courses will be required, no transfer credit will be accepted, and no credit will be awarded for pre-admission experiential learning.

Physician assistants (PAs) provide care to patients under the direction and responsible supervision of a doctor of medicine or osteopathy. PAs provide a wide range of diagnostic, therapeutic, and services in primary and specialty care specialties, and they are present in medical and surgical areas. The program at CWRU will draw from a national pool of highly qualified applicants. While much of the curricular content is determined by the accrediting body (ARC-PA), as a top tier medical school, CWRU can offer faculty at the very top of their discipline, world class clinical experiences, and a competitive pricing structure that we are confident will yield a strong applicant pool. Further, the School of Medicine offers the ability for PA students to train in parallel with students pursuing a doctor of medicine degree, something that no other program in our region affords. Only Ohio State University and Ohio University in our state present the opportunity to educate future physicians and physician assistants in concert. Further, construction of our new state of the art medical education building, with the PA program being planned for in the design, will clearly be a draw for applicants.

The mission of the Master of Science in Physician Assistant Studies at CWRU is to prepare learners to be leaders in physician assistant practice in a variety of clinical settings who are able to function as members of an interprofessional health care team. In particular, the program aims to address the growing health care need in our region, with a focus on professional clinical practice in the northeastern Ohio region.

## 2. Proposed Curriculum:

The program curriculum prepares students to work as part of a physician-PA team in an inter-professional team environment. The curriculum includes applied medical sciences, patient assessment and evidence-based clinical medicine, supervised clinical practice, health information technology, and health policy and health delivery system discussions. The combination of a rigorous curriculum in an academic medical center, frequent assessment of student competence, opportunities for practical application during the foundational basic science phase, clinical rotations in state-of-the-art hospital settings, and summative evaluation of learners ensures that students are competent to enter clinical PA practice in any setting upon graduation.

Sample curricula from leading programs across the country are attached as Appendix A. It is expected that the curriculum at CWRU will closely mirror those curricula as those programs are of comparable length to the CWRU program. Regardless of the ultimate course name or number at CWRU, the following subject areas specified in the ARC-PA accreditation standards manual as required for a curriculum for granting a degree:

Content Area	Objectives
Clinical Preparatory Instruction	<ul style="list-style-type: none"><li>• Instruction about intellectual honesty and appropriate academic and professional conduct</li><li>• Instruction for the provision of medical care to patients from diverse populations</li><li>• Instruction related to the development of problem solving and medical decision-making skills</li><li>• Instruction to prepare students to work collaboratively in inter-professional patient centered teams.</li><li>• Instruction in the following areas of applied medical sciences and their application in clinical practice:<ul style="list-style-type: none"><li>▪ Anatomy</li><li>▪ Physiology</li><li>▪ Pathophysiology</li><li>▪ Pharmacology and pharmacotherapeutics</li><li>▪ Genetic and molecular mechanisms of health and disease</li></ul></li><li>• Instruction to prepare students to work collaboratively in inter-professional patient centered teams.</li><li>• Instruction in clinical medicine covering all organ systems</li><li>• Instruction in interpersonal and communication skills</li><li>• Instruction in patient evaluation, diagnosis and management</li><li>• Instruction in the provision of clinical medical care across the life span</li><li>• Instruction in technical skills and procedures based on current professional practice</li></ul>

- Instruction in basic counseling and patient education skills
- Instruction to prepare students to search, interpret and evaluate medical literature, including application to individualized patient care
- Instruction in health care delivery systems and health policy
- Instruction in the concepts of public health and they relate to the role of the practicing PA
- Instruction in patient safety, quality improvement, prevention of medical errors and risk management.
- Instruction about PA licensure, credentialing and laws and regulations regarding professional practice
- Instruction regarding reimbursement, documentation of care, coding and billing
- Instruction in the principles and practice of medical ethics
- Instruction in the PA profession, its historical development and current trends.

**Supervised Clinical Practice:**

- PA students will be clearly identified in the clinical setting to distinguish them from physicians, medical students and other health profession students
- Supervised clinical practice will enable students to meet program expectations and required competencies to include preventive, emergent, acute, and chronic patient encounters.
- Supervised clinical practice will provide patient exposure to:
  - Medical care across the life span
  - Women’s health
  - Pre-operative, intra-operative and post-operative care
  - Care for behavioral and health conditions
- Supervised clinical practice will occur in
  - Outpatient settings
  - Emergency department
  - Inpatient settings
  - Operating room
- Supervised clinical practice will occur in :
  - Family medicine
  - Internal medicine
  - General surgery
  - Pediatrics
  - OB/GYN
  - Behavioral and mental health care

The Master of Science in Physician Assistant Studies program at CWRU consists of seven semesters of study. Four of these semesters (first and second summers, first fall and first spring semesters) are comprised of foundational, basic sciences. The following three semesters (second fall, second spring and third summer semesters) are comprised of required and elective clinical rotations to prepare the graduate for care in a variety of clinical settings. These experiences include four clinical elective periods that allow graduates to selectively prepare themselves for a career of their choosing. While the program will ultimately house fifty students per year, there will be a ramp-up period, coming to full class size by year three of the program.

The proposed curriculum begins with four semesters of foundational basic sciences. The purpose of these courses is to prepare learners with content knowledge and skill acquisition for care of patients in the clinical setting. To achieve these objectives, the following foundational basis science courses are proposed. For courses that must be created, the proposed title is in italics. The Center for Medical Education (CMED) will be the administrative unit that will house the proposed courses in the curriculum.

Foundational Basic Science Curriculum *Italicized Courses will be created:*

<b>Course</b>	<b>Credit Hours</b>
<b>First Summer</b>	
ANAT 410: Anatomy	6
<i>CMED 421. Foundations of Clinical Medicine</i>	2
<i>CMED 431. Professional Issues for Physician Assistants</i>	1
<b>Fall Semester</b>	
BIOC 407. Introduction to Biochemistry: From Molecules To Medical Science	4
PHOL 479. Physiology of Organ Systems	4
<i>CMED 411. Pharmacology for Physician Assistants</i>	3
<i>CMED 441. Principles of Clinical Medicine</i>	3
<i>CMED 422. Foundations of Clinical Medicine</i>	2
<i>CMED 432. Professional Issues for Physicians Assistants</i>	1
<b>Spring Semester</b>	
<i>CMED 450. Pharmacotherapeutics</i>	3
<i>CMED 442. Principles of Clinical Medicine</i>	3
GENE 525. Clinical Genetics	2
NTRN 365. Nutrition in Disease	4
<i>CMED 423. Foundations of Clinical Medicine</i>	2
<i>CMED 433. Professional Issues for Physicians Assistants</i>	1
<b>Second Summer</b>	
<i>CMED 460. Clinical Procedures</i>	4
<i>CMED 470. Culture and Health</i>	3
<i>CMED 434. Professional Issues for Physicians Assistants</i>	1
<b>TOTAL</b>	<b>49</b>



### **Existing Courses to be Included in the Curriculum**

**ANAT 410. Cadaver dissection-based human anatomy with histology, neuroanatomy, embryology, and physiology. 6 Units.** Human Anatomy will provide students with a sound understanding of the normal human body as a foundation for subsequent pursuing biomedical careers. A combination of daily lectures and laboratories integrates cadaver dissection-based gross anatomy with the associated histology, embryology, neuroanatomy and basic physiology and clinical correlates. This course is well-suited to all biomedical careers, including pre-clinical and biomedical undergraduates, post-baccalaureate, pre-clinical Master of Science graduate programs, plus medical and dental students seeking additional training in the anatomical sciences. It will meet any of the anatomy-oriented prerequisites being implemented for medical and dental school applications, including those preferring or requiring a cadaver-based experience. The assessments will include a combination of written and cadaver-based practical questions.

**BIOC 407. Introduction to Biochemistry: From Molecules To Medical Science. 4 units.** This course provides an overview of the macromolecules and small molecules key to all living systems. Topics include: protein structure and function; enzyme mechanisms, kinetics and regulation; membrane structure and function; bioenergetics; hormone action; intermediary metabolism, including pathways and regulation of carbohydrate, lipid, amino acid, and nucleotide biosynthesis and breakdown. The material is presented to build links to human biology and human disease.

**PHOL 479. Physiology of Organ Systems. 4 Units.** This course for physician assistants is based around PHOL 480, without the laboratory component. It presents key aspects of the organ physiology and pathophysiology for: Muscle structure and Function, Myasthenia gravis and Sarcopenia; Central Nervous System, (Synaptic Transmission, Sensory System, Autonomic Nervous System, CNS circuits, Motor System, Neurodegenerative Diseases, Paraplegia and Nerve Compression); Cardiovascular Physiology (Regulation of Pressure and flow; Circulation, Cardiac Cycle, Electrophysiology, Cardiac Function, Control of Cardiovascular function, Hypertension); Hemorrhage, Cardiac Hypertrophy and Fibrillation; Respiration Physiology (Gas Transport and Exchange, Control of Breathing, Acid/base regulation, (Cor Pulmonale, Cystic

Fibrosis, Sleeping apnea and Emphysema); Renal Physiology (Glomerular Filtration, Tubular Function/transport, renal insufficiency, Glomerulonephritis, ); Gastro-Intestinal Physiology (Gastric motility, gastric function, pancreas and bile function, digestion and absorption, Liver Physiology; Pancreatitis, Liver Disease and cirrhosis); Endocrine Physiology (Thyroid, Adrenal glands, endocrine pancreas, Parathyroid, calcium sensing receptor, Cushing and diabetes, Reproductive hormones, eclampsia); Integrative Physiology (Response to exercise, fasting and feeding, aging).

**GENE 525. Advanced Medical Genetics: Clinical Genetics. 3 Units.** Fundamental principles regarding congenital malformations, dysmorphology and syndromes. Discussion of a number of genetic disorders from a systems approach: CNS malformations, neurodegenerative disorders, craniofacial disorders, skeletal dysplasias, connective tissue disorders, hereditary cancer syndromes, etc. Discussions also include diagnosis, etiology, genetics, prognosis and management.

**NTRN 365. Nutrition in Disease. 4 Units.** The course addresses the interplay among etiology, metabolic perturbations, pathophysiology, clinical signs and symptoms, and nutrition principles for the prevention and management of disease.

### **Course Descriptions for Proposed Offerings**

**CMED 421, CMED 422, CME 423. Foundations of Clinical Medicine:** Foundations Clinical Medicine is taught in three courses that span the academic year and a summer. These courses are designed to prepare learners to obtain a complete history and perform a complete physical examination on any patient, with special consideration to adjustments regarding gender, age and cultural background and integration of issues of bioethics, patient confidentiality and patient rights. Students will progress body system by body system during this semester. Lectures, demonstrations and simulation will be used. Normal, variations and common abnormal physical exam findings will be introduced. The course will allow students to work in pairs and small groups to develop the history-taking, communication and examination skills.

**CMED 431, CMED 432, CMED 433, CMED 434. Professional Issues for Physician**

**Assistants:** This four-semester course is designed to give learners a foundation of practical knowledge about the physician assistants and the US healthcare system. This course will review the history and evolution of the Physician Assistant (PA) profession in this country. The status, trends, and characteristics of PA healthcare providers; their education, regulation, practice patterns, external relations, and professional organizations will be discussed. Issues related to PA health workforce policy, salary and reimbursement, and legal and economic aspects of PA practice will be presented. Current professional issues, such as increasing specialization, globalization, health workforce policy and postgraduate training are addressed. PA career progression and roles in various clinical and professional activities and disciplines will be examined. Topics include contemporary issues in healthcare; healthcare policy; interprofessional health care; the healthcare system; hospitals; ambulatory care; quality assurance and risk management; financing (including insurance, third-party payers and managed care); mental health; and long term care.

**CMED 411. Pharmacology for Physician Assistants. 4 Units.** This course will provide physician assistant students with a fundamental knowledge of basic pharmacodynamic, pharmacokinetic and pharmacogenomic principles, as well as the basic properties, mechanisms, uses, adverse effects, and drug-drug reactions of those drugs most relevant to the physician assistant.

**CMED 441, CMED 442. Principles of Clinical Medicine:** This two-course series takes systems approach to the principles of disease processes to provide foundational content in pathophysiology. This course will discuss but not be limited to the following systems: cardiovascular, respiratory, musculoskeletal, hematology and oncology metabolic/endocrine, gastrointestinal, genitourinary, immune, renal, and neurologic. Lectures, demonstrations and simulation will be used. Normal, variations and common abnormal physical exam findings will be introduced.

**CMED 450. Pharmacotherapeutics:** This course introduces students to the general application of pharmacologic principles to patient care situations. Classes of pharmaceuticals will be studied, with a focus on the mechanisms of drug action in different therapeutic classes, common side

effects of prototypic drugs in each category, drug side effects and drug-drug interactions, the interaction of drugs with the disease state under treatment, polypharmacy, and reputable sources of information about drugs.

**CMED 460. Clinical Procedures:** Through lectures, case discussion, demonstrations and practice sessions, students will learn to use a variety of the diagnostic and treatment modalities. These clinical procedures include the instruction in, use of, or practice in procedures in the areas of cardiology; pulmonology; nephrology/urology; gastroenterology; men's and women's health, orthopedics/rheumatology, geriatrics and neurology. Students will also become certified in Advanced Cardiac Life Support (ACLS). The content includes common laboratory tests, when to use these tests, and how to interpret and effectively utilize the results. Skills include specimen collection, point of care testing, provider performed microscopy, IV/arterial puncture, clean and sterile procedure and interpretation of laboratory data and normal values.

**CMED 470. Culture and Health:** This course focuses on cultural perspectives of health and illness including the relationship of health care behaviors and beliefs to culture and social structure. Participants will foster an appreciation for human diversity related to culture and health.

Beginning in September of the second year, learners begin their clinical education curriculum. Clinical rotations follow ARC-PA standards and provide experiences to prepare learners for clinical settings in which PAs practice, preparing them for patients from a variety of ages and clinical presentations. Additionally, our program has added elective rotations in urgent care settings and primary care environments. These rotations are deemed "elective" as the student will be required to have experiences in certain clinical settings, but it will be in a specialty of their choosing (therefore, student "elect" the specialty). For example, all students must have an elective in primary care. But one student might choose to complete this experience in a pediatric setting caring for children, while another might elect for an experience caring for a geriatric population. Additionally, two electives of the students' choosing must be complete. Clinical rotations will each be one month in duration, and the students be assigned to spend their time at clinical training site. During this time, they will encounter patients typical for the specialty, clinical procedures and technical aspects of the discipline, and learn patient diagnosis, treatment

and management from the perspective of that specialty. Under the supervision of a licensed physician assistant or physician faculty member, the learner will progressively take responsibility for the diagnosis, treatment and care for the patients on the clinical service. This curriculum offers the nationally required seven core clinical experiences, and it provides for four months of elective experiences in areas that meet the interests and long-term career goals of the learner.

Clinical Curriculum (beginning in September of Second Year):

Required Core Clinical Experiences	Duration (in months)	Credit Hours
CMED 480. Emergency Medicine	1	5
CMED 481. Family Medicine	1	5
CMED 482. Geriatrics	1	5
CMED 483. Internal Medicine	1	5
CMED 484. Pediatrics	1	5
CMED 485. Psychiatry	1	5
CMED 486. Surgery	1	5
Elective Clinical Experiences	Duration (in months)	Credit Hours
CMED 487. Primary Care	1	5
CMED 488. Intensive Care Medicine	1	5
CMED 489. Elective of Student's Choosing	2	10
<b>TOTAL</b>	<b>11</b>	<b>55</b>

Finally, a longitudinal capstone course will be focused on completion in teams of a health care quality improvement project over the clinical year. The course will be developed as an online course, with milestones throughout the year to ensure that students are progressing. Students will be required to submit a written synthesis of the project. The capstone course will include integration of interpersonal and teamwork skills, patient care skills, and knowledge of health care systems.

Each component of the curriculum will have an evaluation and assessment strategy to ensure competency. To lead this process, each course in the curriculum has a defined set of learning objectives that are stated in the syllabi. Depending on the level of the objective, students will be evaluated through course exams, quizzes, course assignments, and technical and clinical skills assessments. Standardized patient sessions, objective structured clinical examinations (OSCEs) and simulation experiences will be part of the strategy to assess technical and clinical competence.

Summative assessment will be used to assure that the students are appropriately progressing through the curriculum. If a student does not pass one of the evaluation components, the faculty of the Physician Assistant program and the Committee on Students will help students and their Society Dean to identify areas of deficit and develop a plan for remediation. Students will be afforded an opportunity to repeat the failed evaluation.

Each course has a syllabus that outlines instructional objectives that are informed by the accreditation standards to guide student learning. Appropriate examinations and evaluation allow the determination of competence in content domains, clinical decision-making and problem-solving.

Graduation will require completion of two comprehensive examinations: 1) a comprehensive written multiple choice examination, which will be modeled on the Physician Assistant National Certifying Exam (PANCE), to assess medical and surgical knowledge; and 2) a 12-station Objective Structured Clinical Exam (OSCE) to demonstrate communication, psychomotor and clinical reasoning skills. Both examinations will be completed prior to graduation.

Effectiveness of the courses in meeting learning objectives and outcomes will be determined based on data from student evaluations, course performance, faculty observations, preceptor and graduate surveys and the comprehensive examinations. Further, the Physician Assistant National Certifying Exam (PANCE) outcomes will be a measure of the effectiveness of the curriculum. The PANCE assessment, which students must complete within four months of completing the PA Program, is a comprehensive multiple choice exam (based on the NCCPA Blueprint) and an OSCE, which involves assessment of students' knowledge, clinical decision making, clinical skills, communication, professionalism and ethics.

To support students in their progress through the curriculum, the proposed program will extend the Academic Society structure currently used in the School of Medicine. The purpose of the Academic Societies is to provide a comprehensive support system for students so that they can master the academic and professional skills required to be a physician assistant, in an environment that monitors their physical, social and emotion well-being and helps them develop and grow as a individual. This goal is accomplished through advising, teaching, collating assessments, and building a sense of community. The students will be assigned a Society Dean to

serve as a mentor, help students navigate the curriculum and provide students with advice and support for career planning. The Society Dean will be a source for personal advising and professional mentoring, while being a mechanism for building a supportive environment among the physician assistant learners.

### **3. Administrative Arrangement for Program, Administrative Units Involved**

The Physician Assistant Studies Program will be administered through the Office of the Vice Dean for Medical Education of the School of Medicine, and specifically through the Center for Medical Education (CMED). CMED is a part of the Division of General Medical Sciences, through which faculty appointments will be made through. The Vice Dean for Medical Education holds the appointment power within this division.

There are two administrative appointments mandated by the ARC-PA, a Program Director and a Medical Director. A search for the founding Program Director will commence as soon as the program approval is attained from the CWRU Faculty Senate. This will be a 12 month full time position with at least 80% of the Director's time devoted to academic and administrative responsibilities in support of the program. The Program Director will be a Physician Assistant certified by the National Commission on Certification of Physician Assistants (NCCPA) and licensed to practice in Ohio.

In addition to the Program Director, the ARC-PA mandates that all credentialed programs have a Medical Director. The Medical Director must be a licensed, board certified allopathic or osteopathic physician. This position is not mandated as a full-time hire, but we anticipate that a minimum of 0.6 FTE for administrative and educational activities will be required.

The Program Director will have the responsibility to recruit additional faculty to the program. It is anticipated that a minimum of two additional principal faculty positions will be filled by NCCPA certified physician assistants. It is necessary to recruit these positions, as there are no current faculty members who are licensed physicians assistants. In addition to the above, there will be instructional faculty sufficient in number to provide students with the necessary attention, instruction and supervised clinical practice experiences to acquire the knowledge and

competence required for entry into the profession. It is expected that these faculty will be drawn from existing faculty throughout the CWRU School of Medicine.

At the outset, the program will be staffed by an administrative manager, an education coordinator, an admissions coordinator and an administrative assistant. Existing staff within the Office of the Vice Dean for Medical Education will provide staff services for student affairs, financial aid and registration. The admissions process will be handled by the CWRU School of Medicine.

#### **4. Evidence of Need:**

The physician assistant profession has been on a rapid growth trajectory – with the number of physician assistant doubling in from 2000 to 2010.

(<http://www.amednews.com/article/20110927/business/309279997/8/>). The Bureau of Labor Statistics (BLS) see the growth in the profession as “much faster than average” and projects a growth of 30% through 2020. The BLS cites population growth, an aging population, more physicians entering specialty areas and the fact that physician assistants are more cost effective than physicians as reasons for their growth projection. There is little doubt the growth will continue, as evidenced by the large number of available job opportunities in Cleveland alone, with even more in Cuyahoga County.

In addition, there is little question of a looming physician shortage. The Association of American Medical Colleges (AAMC) has projected a physician shortage of 125,000 by 2025 – a result of combining an aging population, the influx of over 30 million newly insured in the US as a result of the Affordable Health Care Act, an aging physician demographic (the AAMC reported in 2009 that over a third of physicians were 55 or older), and a freeze in Medicare funding for residency positions. This gap will need to be filled by non-physician health providers. The June 2013 issue of *Health Affairs* presents details on provider preferences from patients’ perspective and suggests that consumers are open to a greater role for physician assistants and nurse practitioners.



Augmenting all the above is the fact that the health care delivery system in the United States continues to evolve new models of care in an effort to reign-in costs while improving patient outcomes. An example is the Patient-Centered Medical Home Care (PCMH) that has advocacy from several professional organizations and has a particular push from the federal government. This model requires a team of providers that using an interdisciplinary approach that coordinates care across all elements of the health care system. The demand for physician assistants will continue to increase as continuity of care becomes more integrated across the spectrum of providers.

This demand has not been lost on academia. In 2000, there were about 126 accredited programs nationally. That grew to 154 in 2010 and to 172 today. There are currently eight programs in Ohio. These are Baldwin Wallace (inaugural class May 2013), Cuyahoga Community College/Cleveland State, Kettering College, Marietta, Mount Union, Ohio Dominican (inaugural class July 2012), University of Findlay, and the University of Toledo. Four additional programs are scheduled for accreditation review in the next couple of years: Lake Erie College, Ohio University, Ohio State University, and the University of Dayton. In spite of the growth in programs, there is still a high demand from the applicant pool as evidenced by many schools attracting 15-20 applicants per available training position. This speaks to a still-present need that is likely to only increase as our health care system transforms and the need for more providers of health care increases.

## **5. Prospective Enrollment:**

The steady state target enrollment is 50 students per cohort. However, the target enrollment for the inaugural class is 30-35 with the full target reached by the third entering class. Per the ARC-PA Standards, the inaugural class will apply directly to Case Western Reserve University through established application process for all graduate programs. Upon receipt of provisional accreditation, all prospective students will apply directly through Central Application Service for Physician Assistants (CASPA).

An Admissions Committee will be comprised of leadership from the Office of Admissions and faculty from the basic and clinical sciences. An effort to include clinical faculty who are both physicians and physician assistants will be made. The committee will select those candidates who show promise of becoming outstanding physician assistants. Decisions will be made based on the applicant's academic record, written narrative statement, personal references, performance on standardized graduate admissions tests (the Graduate Record Exam or Medical College Admission Test), previous health care experience, and a personal formal interview. Applicants are assessed on the qualifications without regard to gender, sexual orientation, color, age, disability, race, religion, veteran status or national origin.

All applicants to the program must have completed a baccalaureate degree, granted by an accredited US or Canadian institution, by the time of matriculation into the program. While international learners are welcomed to apply, there are some points to consider that can make the possibility of matriculation of an international student into the Physician Assistant Studies program slight. First, there is a large pool of well-qualified potential applicants who are US citizens, so the competition is great. Second, because of their non-US citizen status, international students are not eligible for financial aid. International students often take out loans to cover costs, and these must be cosigned by a US citizen. Finally, the restrictions on the visa of international students may make remaining in the US post-graduation difficult. However, some students may still choose to apply for admission. International students will be given consideration equal to domestic students. International students whose first language is not English must demonstrate English proficiency by taking the Test of English as a Foreign Language and earning a minimum score of 577 if paper-based, and 90 if Internet-based. The International Test of English Language is also accepted; the minimum score is 7.0.

Additional requirements for admission to the Master of Science in Physician Assistant Studies are as follows:

- A cumulative and science undergraduate grade point average (GPA) of at least 3.0 (on a 4.0 scale) or for the last 40 semester credits (60 quarter hours) completed.
- Science requirements include:
  - Biology with lab: 4 semester hours
  - Human anatomy with lab: 4 semester hours

- Human physiology with lab: 4 semester hours
- Microbiology with lab: 4 semester hours
- Organic chemistry with lab: 8 semester hours
- Biochemistry (with lab): 4 semester hours
- General psychology: 3 semester hours
- Second psychology course: 3 semester hours (e.g., life span development, abnormal psychology)
- Statistics: 3 semester hours
- Medical Terminology: 2 credit hours
- All courses taken to satisfy the requirements set forth above must:
  - Be completed at a cumulative GPA of 3.0 or better
  - Be completed prior to matriculation
  - Be taken on a graded basis
- All applicants are required to submit scores for the Graduate Record Examination (GRE) General Test. Alternatively, students who have completed the Medical College Admission Test (MCAT) will be considered. The test must have been taken within the past five years and must be taken early enough so that official scores are received in the PA office by the application deadline.
- Previous health care experience is an indication to the Admissions Committee of an applicant's awareness of and commitment to a career in health care. A minimum of 1,000 hours of direct, hands-on, health care experience is required of all applicants.
- A personal interview with the Program Admissions Committee is required. The interview is by invitation only to assess maturity, written and oral communication skills, an awareness of the professional role of the physician assistant and career goals consistent with the program's mission.
- Submission of an on-line application through the Centralized Application Service for Physician Assistants (CASPA).
- The curriculum of the Master of Science in Physician Assistant Studies is sufficiently unique that exemption from or advanced standing in course work is not permitted. All students, regardless of prior academic or work experience, must complete the entire 24 month curriculum.
- Three letters of recommendation; at least one should be from a recent college professor and one from a health care professional who has known the applicant for at least 6 months

The Admission Committee will designate one of the following categories for each interviewed applicant:

- Complete Acceptance: all prerequisite courses and admission requirements are complete.
- Provisional Acceptance: each student will receive in writing the outstanding requirements needed for complete acceptance (e.g. prerequisite coursework).
- Waiting list: Applicant meets admission requirements and may be admitted if accepted applicants forfeit their seats in the program.
- Denied: Those interviewed who are not chosen for admission will be notified in writing.

Case Western Reserve University has a great tradition of commitment to diversity in all of its forms. In the School of Medicine, the Office of Multicultural Programs (OMP) was created in 1971 to consolidate efforts to expand opportunities for underrepresented minorities in medicine. More specifically, the OMP works with the Admissions Office to recruit minority students and to provide academic, social, emotional, and financial support. The OMP has developed extensive relationships with historically black colleges and universities (HBCU) in Ohio and around the country that will be used to help recruit a diverse student body for the physician assistant studies program. The OMP also offers a summer program that may be of interest to students who are considering a career as a physician assistant.

In a similar vein, CWRU is committed to students with disabilities. Disability Resources in Educational Services for Students (ESS) provides direction, support and accommodation for learners who have a physical or mental impairment that substantially limits one or more major life activities. Students who can fully participate in the Physician Assistant Studies curriculum with reasonable accommodation are encouraged to apply for admission.

## **6. Faculty and Facilities Available to the Program:**

There will be instructional faculty sufficient in number to provide students with the necessary attention, instruction and supervised clinical practice experiences to acquire the knowledge and

competence required for entry into the profession. The School of Medicine currently has 4,657 full and part-time faculty. These faculty include those who are based at the School of Medicine, as well as those with clinical appointments who are located in hospitals, clinics and community agencies throughout the region. These faculty will be sufficient to provide a state-of-the-art education for our proposed class of Master of Science in Physician Assistant Studies students.

Many of the faculty members who are based at the School of Medicine are already experienced at presenting graduate-level courses. We have several existing basic science faculty who have been involved in teaching in our many graduate degree programs, including Applied Anatomy, Biochemistry, Bioethics, Environmental Health Sciences, Epidemiology and Biostatistics, Nutrition, Pathology, Physiology and Public Health. Faculty members and departments from throughout the School of Medicine have expressed interest in being involved in this proposed graduate program and in developing new courses to meet the needs of this program.

The School of Medicine also has a robust group of faculty in clinical sciences departments. Our affiliated hospitals have formal clinical departments that house these faculty, who are involved in teaching learners from our medical school and graduate programs. At University Hospitals Case Medical Center, these departments include Anesthesiology and Perioperative Medicine, Dermatology, Emergency Medicine, Family Medicine and Community Health, Medicine, Neurological Surgery, Neurology, Ophthalmology and Visual Sciences, Orthopaedics, Otolaryngology-Head and Neck Surgery, Pathology, Pediatrics, Plastic Surgery, Psychiatry, Radiation Oncology, Radiology, Reproductive Biology (Obstetrics and Gynecology), Surgery, and Urology. At MetroHealth System, departments of Anesthesiology, Dermatology, Emergency Medicine, Family Medicine, Geriatrics, Medicine, Geriatrics, Neurology, Orthopaedics, Otolaryngology-Head and Neck Surgery, Pathology, Pediatrics, Physical Medicine and Rehabilitation, Psychiatry, Radiology, Reproductive Biology (Obstetrics and Gynecology), and Surgery provide many opportunities for implementing the clinical education curriculum. At the Cleveland Clinic Foundation, educational opportunities for clinical training exist in the departments of Anesthesiology, Family Medicine, Medicine, Ophthalmology, Pathology, Pediatrics, Radiology and Surgery. These facilities, along with our many community training sites, will provide more than ample capacity for our proposed program.

As we are in the architectural planning stages for our new School of Medicine building, we have kept the consideration of the needs for the Master of Science in Physician Assistant Studies in mind. Administrative space for the Program Director, Medical Director, new physician assistant faculty, and their supportive staff have already been taken into account. The planned student learning spaces will provide very ample and available space for teaching in full-class lecture, small group teaching, and one-on-one precepting modalities. Student study space has been accounted for in the planning, as have student support facilities, library space, and student fitness needs. Additional space for an education coordinator, and an admissions coordinator have been planned in those areas. Existing staff within The Office of the Vice Dean for Medical Education will provide staff services for student affairs, financial aid and registration.

CWRU School of Medicine was one of the first in the country to have an entirely electronic curriculum. The Master of Science in Physician Assistant Studies will take a similar approach to delivering the curriculum in an electronic manner. Audiovisual needs are provided by the University's Mediavision staff dedicated to the educational needs of all programs in the School of Medicine. Information technology services for the SOM are divided between administrative computing and academic services, and both of these areas report to the Vice Dean for Medical Education. The IT units work closely with the library, the Office of Medical Education, the Vice Dean for Medical Education, the Associate Dean for Student Affairs, and the Registrar's Office. The IT units also work closely with the main campus IT units to ensure that students have the highest quality of Internet access available at all times. Students have access to the university's gigabit wired network at their desks and access to 802.11a/b/g wireless network throughout the SOM.

On the CWRU SOM campus, the Space and Facilities Planning Office (SFPO) is responsible for scheduling all learning spaces under the purview of the Dean. Using room scheduling software, the SFPO reserves the lecture halls, small group learning spaces, and meeting rooms for the Office of Curricular Affairs, who is then responsible for coordinating the specific use of each room based on the semester's curriculum. The anatomy labs are assigned to the Department of Anatomy and room scheduling is coordinated by the Anatomy faculty responsible for teaching the anatomy courses based on class size and schedule. The medium and small group discussion rooms are exclusively assigned to the Vice Dean for Medical Education to utilize as needed for

the curriculum. When not in use for specific curriculum courses, these rooms are utilized by learners as private study spaces.

The SOM has a medical simulation center with 8,500 square feet and 8 separate exam rooms for OSCEs and clinical learning opportunities. The Mount Sinai Skills and Simulation Center (MSSSC) at Case Western Reserve University provides learners from the School of Medicine, including the proposed students in the Master of Science in Physician Assistant Studies program, access to various types of simulation that includes standardized patients, task training, hi-fidelity manikins, virtual reality, second life and hybrid simulation in a safe risk-free learning environment. MSSSC offers technical and human simulation programs that extend across multiple disciplines and professions to allow learners to practice clinical and communication skills. The MSSSC staff assists curriculum leaders and faculty in developing programs and scenarios that support their learning objectives. Technical, Standardized Patient, or hybrid simulation programs can be managed at MSSSC.

The main Health Sciences Library for CWRU is located within the SOM. There are two separate facilities that house all the print material for the health sciences; both are on the CWRU campus. The Library works closely with the other Case Western Reserve University libraries, and with the libraries of the cultural institutions in University Circle surrounding CWRU. The Library is a member of the state-wide consortium of Ohio academic libraries, OhioLINK, and is a Resource Library in the Greater Midwest Region NN/LM. The Library is a full member of OHIONET, and of OCLC. The librarians in the affiliated hospitals have access to all of the CWRU Libraries electronic resources, and are served by interlibrary loan for materials not available electronically. These affiliated hospitals all house their own libraries as well, so learners are well-supported in their information needs.

## **7. Projected Financial Needs and Adequacy of Expected Financial Support**

The School of Medicine administration has committed both budget and space for the proposed PA program. As previously discussed, the needs of the Physician Assistant Program have been

specifically addressed in the design and sizing of the new Medical Education building. That building will be the home base for the program.

The School has committed operating dollars to support the planning and implementation phase of the PA program. These include the hiring a full time Program Director and 60% effort Medical Director by the Fall of 2014. Also, two additional PA faculty will be in place by the time of the accreditation site visit in December 2015. Additional resources have been set aside by the School sufficient to hire an administrative coordinator for admissions and to adequately provide travel and non-salary budgets in the planning and accreditation stages.

Upon program initiation, tuition revenue will provide all the resources needed to pay for faculty, administrative support staff and all non-salary requirements. See summary table below: Full time faculty include the Program Director and two additional physician assistants. Additional teaching faculty positions are budgeted at ~ 2 FTEs in year 1 and ~3 FTEs at steady state. Support staff on board prior to the start of the program will include an admissions coordinator, a program coordinator and an administrative assistant. After the first year, an additional program coordinator and assistant will be hired. All the positions have been budgeted for in the mid-range financial plan of the School.

It is planned that 30 students will matriculate in the first year, growing to 50 students per year by year three. Tuition will be set at CWRU graduate tuition rate in effect at that time. It is fully expected that the first year will be show a modest surplus growing to more substantial annual surpluses as the program matures to steady state.

<b><i>Physician Assistant Program</i></b>	<b>Year 1</b>	<b>Steady State</b>
<b>Full Time Faculty</b>	225,000	325,000
<b>Part Time/Teaching Faculty</b>	215,000	340,000
<b>Staff</b>	165,000	265,000
<b>Fringe Benefits</b>	190,575	292,950
<b>Non Salary</b>	<u>100,000</u>	<u>75,000</u>
<b>Total Expense</b>	886,500	1,297,950
<b>Tuition Revenue @ 30 students</b>	1,200,000	
<b>Tuition Revenue @ 100 students</b>		4,000,000



**Program Net**

304,425

2,702,050

**APPENDIX A**

**SAMPLE PHYSICIAN ASSISTANT  
PROGRAM CURRICULA**

The first 12 months of the program are devoted to preclinical studies, and the remaining 12 months to clinical experiences in primary care and the medical and surgical specialties. All courses are required, no transfer credit is accepted, and no credit is awarded for pre-admission experiential learning. Only full-time students are admitted to the curriculum.

During the second year of the PA Program, students complete 10 rotations. These clinical experiences are composed of eight required and two elective rotations, and a final senior seminar course. Two of these rotations are required to take place in a medically underserved area. Students must successfully complete the end of rotation exam at the conclusion of all required rotations as well as other clinical evaluations throughout the year. Clinical year students will return to campus throughout the second year to participate in Call Back days and evaluation exercises. Laptop computers are leased to each student for both the first and second years. Computers are used for a variety of in-class and clinical assignments and activities, as well as for communication with the program and Internet services.

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
<b>Didactic (Preclinical) Year</b>	Anatomy					Fundamentals of Surgery							
	Patient Assessment & Counseling I					Patient Assessment & Counseling II					Patient Assessment & Counseling III		
	Intro to Prevention		Clinical Medicine I			Clinical Medicine II				Clinical Medicine III			
	Basic Medical Science		Diagnostic Methods I			Diagnostic Methods II				Diagnostic Methods III			
	Physiology		Pharmacology I			Pharmacology II				Pharmacology III			
			Practice & the Health System I			Practice & the Health System II							
						Evidence-Based Medicine I							
<b>Clinical Year</b>	Bridge Course	Emergency Medicine	Internal Medicine	Obstetrics & Gynecology	Pediatrics	Primary Care	Behavioral Medicine	General Surgery	Evidence-Based Medicine II	Elective	Elective	Senior Seminar	

The order of rotations will vary from student to student during the Clinical Year.

Semester 1 – Summer B

Gross & Radiographic Anatomy — 4 cr.hrs.

Medical Communications — 2 cr.hrs.

Semester 2 – Fall

Behavioral & Community Medicine I — 1 cr.hr.

Human Physiology — 4 cr.hrs.

Introduction to Medicine I — 6 cr.hrs.

Pharmacotherapeutics — 4 cr.hrs.

Physical Diagnosis — 2 cr.hrs.

Semester 3 – Spring

Behavioral & Community Medicine II — 1 cr.hr.

Clinical Problem Solving/Differential Diagnosis — 1 cr.hr.

Clinical Procedures — 1 cr.hr.

EKG/Lab Medicine – 1 cr.hr.

Introduction to Medicine II — 6 cr.hrs.

Patient Evaluation & Hospital Practicum — 2 cr.hrs.

Semester 4 – Summer A

Advanced Clinical Practicum — 2 cr.hrs.

Evidence-Based Medicine — 3 cr.hrs.

Typical Clinical Schedule Number of Months

Elective — 2

Emergency Medicine — 1

Intensive Care Medicine — 1

Internal Medicine — 1

Internal Medicine Selective — 1

Obstetrics/Gynecology — 1

Pediatrics — 1

Primary Care — 2

Psychiatry — 1

Surgery, General — 1

Clinical Practicum — 12 four-week rotations, 3 credits each = 36 credit hours

Special Topics seminar — 1 credit for each of the four semesters = 4 credit hours

**TOTAL CLINICAL YEAR SEMESTER HOURS = 40**



Year	Term	Title	Credit Hour
<b>First Year</b>	Summer	MPA 5101 Professional Practice Issues I	1
		HCS 5407 Human Physiology	4
		HCS 5308 Human Anatomy	3
		HCS 5309 Human Anatomy Lab	3
		HCS 5207 Introduction to Human Neuroscience	2
	Fall	MPA 5215 Pharmacology I	2
		MPA 5102 Integration Skills I	1
		MPA 5305 Patient Evaluation I	3
		MPA 5509 Clinical Medicine I	5
		HCS 5306 Introduction to Pathology	3
		HCS 5106 Professional Development (grade in Spring 1)	0
	Spring	MPA 5216 Pharmacology II	2
		MPA 5103 Integration Skills II	1
		MPA 5204 Clinical Prevention and Population Health	2
		MPA 5206 Patient Evaluation II	2
MPA 5510 Clinical Medicine II		5	
MPA 5103 Evidence Based Medicine		1	
HCS 5106 Professional Development		1	
<b>Second Year</b>	Summer	MPA 5231 Psychiatry	2
		MPA 5308 Clinical Skills	2
		MPA 5307 Patient Evaluation III	3
		MPA 5511 Clinical Medicine III	5
<b>Clinical Rotations</b>		MPA 5831 Family Medicine	8 weeks
		MPA 5830 Internal Medicine	8 weeks
		MPA 5622 Obstetrics/Gynecology	6 weeks
		MPA 5623 Pediatrics	6 weeks
		MPA 5433 Surgery	4 weeks
		MPA 5432 Emergency Medicine	4 weeks
		MPA 5430 Psychiatry	4 weeks
		MPA 5450 Infectious Disease	4 weeks
		MPA 5429 Clinical Selective	4 weeks
		MPA 5428 Clinical Elective	4 weeks
		MPA 5350 Professional Practice II	3 weeks
		MPA 5440 Directed Study	4 weeks
<b>TOTAL PROGRAM HOURS</b>			<b>112</b>



**SUMMER QUARTER A and B (Total 21)**

- Physical Diagnosis (4)
- Physical Diagnosis Lab (3)
- Principles of Professional Practice I (2)
- Introduction to Medical Genetics (2)
- Introduction to Pathophysiology/Mechanisms of Disease (2)
- Introduction to Pharmacotherapeutics (2)
- Gross Anatomy, Imaging and Embryology (2)
- Clinical Medicine I (3)

**FALL QUARTER (Total 16)**

- Gross Anatomy, Imaging and Embryology (6)
- Clinical Medicine II (4)
- Clinical Medicine Tutorials I (3)
- Principles of Professional Practice II (2)
- Clinical Practicum I (1)

**WINTER QUARTER (Total 18)**

- Human Physiology (6)
- Clinical Medicine III (4)
- Clinical Medicine Tutorials II (3)
- Principles of Professional Practice III (3)
- Clinical Practicum II (1)
- Electrocardiography (1)

**SPRING QUARTER (Total 15)**

- Clinical Medicine I (4)
- Clinical Medicine Tutorials III (3)
- Applied Clinical Skills (2)
- Principles of Professional Practice IV (3)
- Clinical Practicum III (1)
- Neuroanatomy (2)

**Required Primary Care Clinical Rotations (5 weeks each, total of 42 credits):**

- Community Medicine (7)
- Pediatrics (7)
- Women's Health (7)
- Inpatient Medicine (7)
- Emergency Medicine (7)
- General Surgery (7)

**Elective Rotations (7 credits each, total of 14 credits) - Determined by student interests, needs and availability. Choice of 2 electives (5 weeks each):**

- |                            |                      |
|----------------------------|----------------------|
| • Cardiology               | • Nephrology         |
| • Cardiothoracic Surgery   | • Neurosurgery       |
| • Dermatology              | • Orthopedic Surgery |
| • Developmental Pediatrics | • Otolaryngology     |
| • Endocrinology            | • Plastic Surgery    |
| • Geriatrics               | • Psychiatry         |

**APPENDIX B**  
**PROPOSED SYLLABI BY COURSE**

**Case Western Reserve University  
Master of Science in Physician Assistant Studies Program  
GENE 525 - Clinical Genetics**

**Course Title:** Clinical Genetics  
**Course Number:** GENE 525  
**Semester Hours:** 2  
**Semester Taught:** Spring I

**Description of Course:**

This course presents principles used in the genetic approach to evaluating the infant, child and adult with congenital malformations or a genetic syndrome. The course begins with an overview of an approach to the dysmorphic individual and continues with discussions of specific diagnoses, etiologies of malformations or disorders, genetic mechanisms and recurrence risks. Such issues as prognosis and management are also discussed.

**Goal of Course:**

The goal of this course is to prepare the physician assistant student with the tools to evaluate infants, children and adults for congenital malformations or genetic syndromes.

**Teaching Methods Used:**

Didactic presentations, class discussions

**Required Text:**

Reardon W. 2007. *The Bedside Dysmorphologist*. New York, NY: Oxford University Press.

Jones KL, Jones MC, Del Campo M (eds). 2013. *Smith's Recognizable Patterns of Human Malformation*. (7th ed). Philadelphia, PA: Elsevier/Saunders Company.

Nussbaum RL, McInnes RR, Willard HF. 2007. *Thompson & Thompson: Genetics in Medicine*. (7th ed). Philadelphia, PA: W.B. Saunders Company, 2007.

Cassidy SB and Allanson JE (eds). 2010. *Management of Genetic Syndromes*. (3rd ed). Hoboken, NJ: John Wiley & Sons, Inc.



## **Learning Objectives:**

After completion of this course, learners will be able to:

- Describe basic approaches to evaluating an individual with dysmorphic features.
- Discuss approaches to formulating a differential diagnosis.
- List at least three major genetic disorders in each major system.
- Be able to describe the etiology, inheritance pattern, major features of the disorder, current method of diagnosis, prognosis and management for each of the disorders listed in the above objective.
- Discuss specific counseling issues raised for each of the disorders listed in Objective 3 such as recurrence risks, prenatal diagnosis, presymptomatic testing, and psychosocial issues.

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 460 - Clinical Procedures**

**Course Title:** Clinical Procedures  
**Course Number:** CMED 460  
**Semester Hours:** 4 hours  
**Semester Taught:** Summer 2

**Description of Course:**

The purpose is to prepare these future clinicians for clinical management of health and disease by preparing them for basic clinical procedures

**Goal of Course:**

Future physician assistants will become valuable members of the health professions team by gaining knowledge and skills in basic clinical procedures.

**Teaching Methods Used:**

Didactic presentations, laboratory and small group learning sessions

**Required Text:**

Dehn RW, Asprey DP. 2013. Essential Clinical Procedures, 3rd Edition. Philadelphia, PA: Saunders.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Demonstrate appropriate measurement of vital signs
- Perform and interpret an electrocardiogram
- Evaluate a chest radiograph interpretation
- Assess the results of ultrasound, CT and MRI
- Perform and interpret a Pulmonary Function testing
- Perform endotracheal intubation
- Perform and assess gram stains
- Demonstrate basic splinting and casting skills
- Display appropriate venipuncture technique
- Display appropriate injection technique
- Executive a urinary tract catheterization

**Case Western Reserve University  
Master of Science in Physician Assistant Studies Program  
CMED 470 - Culture and Health**

**Course Title:** Culture and Health  
**Course Number:** CMED 470  
**Semester Hours:** 3 hours  
**Semester Taught:** Summer 2

**Description of Course:**

Using a biopsychosocial model of health, this course will investigate the impact of culture, beliefs and values on health, wellness, disease and prevention on individuals, patients, families and communities

**Goal of Course:**

In order to be response to individuals, families and communities, physician assistant students will gain insights and skills in incorporating concepts of culture, beliefs and values into patient care, education and management

**Teaching Methods Used:**

Didactic presentations, small group projects

**Required Text:**

Edberg M. 2012. Essentials Of Health, Culture, And Diversity: Understanding People, Reducing Disparities (Essential Public Health). Burlington, MA: Jones & Bartlett Learning.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Discuss the impact of culture on the definition of health, disease and wellness
- Describe common health risks in selected patient populations.
- Distinguish between the health risks of individual patients, families and communities.
- Identify screening tools for health risks in patients and communities.
- Apply the principles of health promotion and disease prevention to the development of culturally sensitive patient education
- Consider social, cultural and economic issues in patient care

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 421, CMED 422, CMED 423 - Foundations of Clinical Medicine I, II, III**

**Course Title:** Foundations of Clinical Medicine I, II, III  
**Course Number:** CMED 421, CMED 422, CMED 423  
**Semester Hours:** 2 hours per semester  
**Semester Taught:** Summer 1, Fall 1, Spring 1

**Description of Course:**

This course provides the physician assistant student with the knowledge and clinical skills required for medical history-taking and performance of the complete physical examination. Interviewing skills, focused physical examination techniques and appropriate documentation is presented, with integration of issues of bioethics, patient confidentiality and patient rights.

**Goal of Course:**

The goal of this course is to provide physician assistant learners with the knowledge and skills to conduct a history and physical examination to prepare them for clinical rotations.

**Teaching Methods Used:**

Didactic presentations, clinical demonstrations and small group learning sessions

**Required Text:**

Coulehan JL, Block MR. 2005. The Medical Interview: Mastering Skills for Clinical Practice (Medical Interview). Philadelphia, PA: FA Davis Company.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Identify the components of a complete medical history.
- Demonstrate interviewing techniques to take a problem specific medical history.
- Discuss culturally sensitive approaches to history-taking and physical examinations.
- Differentiate between normal and abnormal findings encountered during the physical.
- Identify the components of a problem specific physical examination.
- Document problem specific medical histories, problem specific physical examinations, and pertinent verbal presentations.
- Explain the development of differential diagnoses.
- Differentiate among key symptoms and pertinent physical examination findings in the clinical presentation .
- Develop a patient-centered management plan.
- Differentiate between acute and chronic presentations.

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**ANAT 410 - Human Anatomy**

**Course Title:** Human Anatomy  
**Course Number:** ANAT 410  
**Semester Hours:** 6 hours  
**Semester Taught:** Summer I

**Description of Course:**

Human Anatomy will provide physician assistant students with a sound understanding of the normal human body as a foundation subsequent clinical learning. Gross anatomy, histology, embryology, neuroanatomy and basic physiology plus clinical correlates will be presented.

**Goal of Course:**

The goal of Human Anatomy is to provide the physician assistant student with the necessary foundation for further foundational basic science and clinical rotations by presenting anatomical concepts of the normal body

**Teaching Methods Used:**

Didactic presentations, laboratory

**Required Text:**

Morton DA, Foreman KB, Albertine KH. 2011. Gross Anatomy (1st ed). New York, NY. McGraw Hill Medical.

Mescher AL. 2013. Junquiera's Basic Histology: Text & Atlas (13th ed). New York, NY. McGraw Hill Medical.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Describe the biology of cells and tissues
- Discuss the anatomy of the back and limbs, with emphasis on the brachial plexus, vertebral column, spinal cord, limbs, gait, and muscle physiology
- Identify anatomy of the head and neck, particularly the brain, brainstem, cranial nerves, pharynx, larynx, eye, and ear
- Describe anatomical concepts relevant to the trunk/thorax/abdomen
- Discuss the anatomy of the heart, lungs, digestive tract and glands, kidneys, and lumbar plexus
- Identify important anatomical concepts of the pelvis and perineum, with focus on the sacral plexus, uterus, ovaries, prostate, urinary bladder, and genitalia

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**BIOC 407 - Introduction to Biochemistry: From Molecules To Medical Science**

**Course Title:** Introduction to Biochemistry: From Molecules To Medical Science  
**Course Number:** BIOC 407  
**Semester Hours:** 4  
**Semester Taught:** Fall I

**Description of Course:**

This course provides an overview of the macromolecules and small molecules key to all living systems. Topics include: protein structure and function; enzyme mechanisms, kinetics and regulation; membrane structure and function; bioenergetics; hormone action; intermediary metabolism, including pathways and regulation of carbohydrate, lipid, amino acid, and nucleotide biosynthesis and breakdown. The material is presented to build links to human biology and human disease.

**Goal of Course:**

The goal of this course is to help the physician assistant understand the linkage between human biology and human disease on the macromolecular and small molecular level.

**Teaching Methods Used:**

Didactic presentation, clinically applicable study problems

**Required Text:**

Devlin TM. 2010. Textbook of Biochemistry with Clinical Correlations 7th ed. Hoboken, NJ: Wiley-Liss.

## **Learning Objectives:**

After completion of this course, learners will be able to:

- Describe protein structure and function, including amino acids, the peptide bond, protein secondary, tertiary and quaternary structure, protein folding and protein folding diseases, reaction rates; catalysis, kinetics, inhibitors of enzymatic reactions, and catalytic strategies.
- Discuss membranes and signal transduction, including membrane structure-lipids, membrane structure-proteins, membrane transport, and hormone/receptor signaling.
- Interpret energetics and carbohydrate metabolism, including the citric acid cycle, oxidative phosphorylation, glycolysis, allosteric regulation of glycolytic enzymes, glycogen metabolism, the pentose pathway, and metabolism of other sugars.
- Summarize lipids and nitrogen metabolism, including metabolism of amino acids, sulfur-containing amino acids and the one carbon pool, the urea cycle, amino acid fluxes, lipid digestion, transport, and storage, fatty acid degradation, fatty acid synthesis, ketone bodies and phospholipids, sterol and isoprenoid biosynthesis, lipoproteins, and sterol regulation.
- Explain nucleic acids, including metabolism of purines and pyrimidines.

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**NTRN 365 - Nutrition in Disease**

**Course Title:** Nutrition in Disease  
**Course Number:** NTRN 365  
**Semester Hours:** 4  
**Semester Taught:** Spring I

**Description of Course:**

The course addresses the interplay among etiology, metabolic perturbations, pathophysiology, clinical signs and symptoms, and nutrition principles for the prevention and management of disease.

**Goal of Course:**

The focus of this course is on medical pathophysiologic conditions in which nutrition plays an integral role in development, progression, and resolution - includes prevention, treatment, and/or management; discussion of general and specific/detailed principles, metabolic perturbations, including specific considerations and clinical applications.

**Teaching Methods Used:**

Didactic presentations, student presentations

**Required Text:**

Nelms N, Sucher KP, Lacey K, Roth SL. 2011. Nutrition Therapy and Pathophysiology 2nd ed. Pacific Grove, California: Brooks Cole.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Demonstrate knowledge of relationship between disease etiology and pathophysiology and nutrition.
- Understand established guidelines related to professional clinical practice medical nutrition therapy.
- Describe roles of others with whom the Clinical Nutrition Specialist (or Registered Dietitian –aka RD) collaborates in the delivery of nutrition therapy.
- Develop knowledge of the role of environment, diet, and lifestyle choices as related to disease progression and how dietary interventions affect change and enhance wellness in diverse individuals and groups with different disease states.



- Integrate knowledge of foods and nutrition, physiological and biochemical processes, and economic and psychosocial influences relative to the provision of nutritional care (medical nutrition therapy).
- Interpret and evaluate scientific literature pertinent to clinical nutrition and interventions; includes understanding of information available within Academy of Nutrition and Dietetic's Evidence Analysis Library (aka EAL).
- Translate scientific and medical concepts related to nutrition therapy into terms and explanations appropriate for the lay individual for use in nutrition counseling.
- Demonstrate effective and professional oral and written communication and documentation and use of current information when communicating how diet and disease interact, including diet therapy information with individuals, groups and the public

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 411 - Pharmacology for Physician Assistants**

**Course Title:** Pharmacology for Physician Assistants  
**Course Number:** CMED 411  
**Semester Hours:** 4  
**Semester Taught:** Fall I

**Description of Course:**

This course is a basic introduction to the principles of pharmacology and to drug classes of particular relevance to the physician assistant. Information concerning drug doses is NOT included. Information concerning calculations used in determining doses WILL BE included

**Goal of Course:**

This course will provide the physician assistant students with a fundamental knowledge of basic pharmacodynamic, pharmacokinetic and pharmacogenomic principles, as well as the basic properties, mechanisms, uses, adverse effects, and drug-drug reactions of those drugs most relevant to the physician assistant.

**Teaching Methods Used:**

Lecture, Problem Based Learning, Team Based Learning (TBL)

**Required Text:**

Golan DE, Tashjian, Armstrong EJ, Armstrong AW. 2011. Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy, 3rd Ed. Philadelphia, PA: Lippincott Williams and Wilkins.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Prescribe therapeutic agents for the prevention and treatment of diseases
- Demonstrate knowledge of common drugs used in medical situations
- Demonstrate treatment modalities and restoration of health in systemic disease

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 450 - Pharmacotherapeutics**

**Course Title:** Pharmacotherapeutics  
**Course Number:** CMED 450  
**Semester Hours:** 3 hours  
**Semester Taught:** Spring 1

**Description of Course:**

This course provides the Physician Assistant with foundational knowledge of the therapeutic uses and effects of drugs. The indications, contraindications and adverse effects of prototypical drugs are covered. Drug dependence and addiction are also discussed

**Goal of Course:**

Learners will gain an understanding of the usage and effects of drugs, as well as the appropriate use of classes of medications

**Teaching Methods Used:**

Didactic presentations, small group projects

**Required Text:**

Brunton LL, Chabner, BA, Knollman, BC. 2011. Goodman & Gilman's The Pharmacological Basis of Therapeutics. 12th ed. New York, NY: McGraw-Hill.

**Learning Objectives:**

After completion of this course, learners will be able to:

- List the indications, mechanisms of actions, adverse effects, drug-drug interactions, and contraindications of drugs.
- Describe the clinically relevant issues of drug therapy
- Discuss the physiology of addiction
- Develop pharmacotherapeutic management plans for selected clinical presentations.

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**PHOL 479 - Physiology of Organ Systems**

**Course Title:** Physiology of Organ Systems  
**Course Number:** PHOL 479  
**Semester Hours:** 4  
**Semester Taught:** Fall I

**Description of Course:**

The course is arranged on a series of self-learned classes covering classical human physiology plus translational topics. Class time will be spent in active discussion of the assigned readings. There will be no lectures. Students will be given a set of learning objectives prior to each class meeting, and they are expected to master the material thoroughly before class

**Goal of Course:**

The goal of this course is to give the physician assistant learners a strong foundation in classical human physiology. The focus is on developing lifelong learners with the ability to think critically.

**Teaching Methods Used:**

Small group learning, facilitated discussion.

**Required Text:**

Boron WF, Boulpaep EL. 2007. Medical Physiology 2nd ed. Philadelphia, PA: Saunders.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Discuss neurophysiology, including neurons, synaptic transmission, paraplegia or Alzheimer, the sensory system, the autonomic nervous system, CNS circuits, and the motor system
- Describe muscle physiology, including the structure and function of muscle, Myasthenia gravis and sarcopenia
- Explain cardiovascular physiology, including circulation, the cardiac cycle, electrophysiology, cardiac function, hypertension, hemorrhage, regulation of pressure and flow, control of cardiovascular function, cardiac hypertrophy and fibrillation
- Discuss respiration physiology, including organization and mechanics of ventilation, acid/base regulation, gas transport and diffusion, gas exchange: ventilation and diffusion, and control of breathing

- Describe gastro-intestinal physiology, including motility, gastric function, pancreas and bile function, pancreatitis, chron's disease, digestion and absorption, liver physiology, and alcoholic liver disease
- Explain renal physiology, including glomerular filtration, tubular function/transport, renal insufficiency, glomerulonephritis, and idiopathic hypertension
- Discuss endocrine physiology/metabolism including hypophysis, bone mineral metabolism, pi metabolism and regulation, the thyroid, the adrenal glands, Cushing, growth hormone, the pancreas and diabetes
- Apply concepts of integrative physiology, including nutrition; fast vs. fed, exercise and adaptive responses, and aging and adaptive responses

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 441, CMED 442 - Principles of Clinical Medicine I, II**

**Course Title:** Principles of Clinical Medicine I, II  
**Course Number:** CMED 441, CMED 442  
**Semester Hours:** 3 hours per semester  
**Semester Taught:** Fall 1, Spring 1

**Description of Course:**

This two-course series takes an organ-based approach to provide foundational content in pathophysiology. This course will discuss but not be limited to the following systems: cardiovascular, respiratory, musculoskeletal, hematology and oncology metabolic/endocrine, gastrointestinal, genitourinary, immune, renal, and neurologic

**Goal of Course:**

Using an organ-based approach, learners will investigate the clinical foundation in pathophysiology necessary for understanding disease states in clinical care settings.

**Teaching Methods Used:**

Didactic presentations, small group clinical correlation conferences

**Required Text:**

Kumar V, Abbas AK, Aster JC. 2014. Robbins & Cotran Pathologic Basis of Disease, 9th edition. Philadelphia, PA: Saunders.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Describe the pathology and clinical presentation of the following systems:
- Cardiovascular:
- Electrophysiology of the Heart – Arrhythmias and Myopathies
- Physiology of Cardiac Defects Cardiac Function
- Defects in Cardiac Output and Venous Return
- Arterial Pressure and the Circulation Dysfunction
- Issues in Fetal and Neonatal Circulation
- Hemostasis and Injury, Hemorrhage, Shock
- Respiratory
- Mechanical Issues in Pulmonary Function
- Disorders of Alveolar Ventilation
- Pulmonary Circulation and Gas Exchange Pathology

- Problems in Oxygen and Carbon Dioxide Transport
- Dysfunction in Respiratory Control
- Musculoskeletal
- General Principles for Skeletal, Cardiac, and Smooth Muscle
- Disorders of muscular function
- Bone disorders and pathologies
- Rheumatological conditions
- Hematology and oncology
- Hyperplasias and Neoplasms
- Cancer
- Metabolic/Endocrine
- Pituitary Gland Disorders
- Growth Hormone Defects
- Disorders of the Thyroid Gland
- Disruption in Hormonal Regulation
- Adrenal Gland Disorders
- Disorders of Metabolism
- Pancreas Pathology
- Electrolyte Imbalance
- Gastrointestinal
- Dysfunctions of GI Tract, including:
- Salivary Glands
- Esophagus
- Stomach
- Exocrine Pancreas
- Hepatobiliary
- Small Intestine
- Large Intestine
- Issues around Gastrointestinal Motility and Enteric Nervous System
- Genitourinary
- Reproductive Pathophysiology
- Concerns around Pregnancy and Birth
- Dysfunctional Sexual Differentiation
- Immune
- Primary immunological deficiency
- Secondary immunological deficiency
- Humoral immunological deficiency
- Cellular immunological deficiency
- Renal
- Structural Problems of the Kidney and Nephrons

- Problems of Renal Clearance
- Glomerular Filtration Rate and Renal Hemodynamics Dysfunction
- Acid-Base Imbalance
- Hypertension
- Neurologic
- Neuropathophysiology
- Disorders of the:
- Cerebrovascular System
- Somatosensory System
- Visual System
- Smell and Taste
- Auditory System
- Vestibular System
- Autonomic Nervous System
- Descending Control of Movements
- Sensorimotor Integration and Internal Regulation
- Injury of the Spinal Cord
- Sleep Disorders
- Seizures
-



**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 431, CMED 432, CMED 433, CMED 434 - Professional Issues for Physician Assistants I, II, III, IV**

**Course Title:** Professional Issues for Physician Assistants I, II, III, IV  
**Course Number:** CMED 431, CMED 432, CMED 433, CMED 434  
**Semester Hours:** 1 hour per semester  
**Semester Taught:** Summer 1, Fall 1, Spring 1, Summer 2

**Description of Course:**

In this longitudinal, four course series, students will explore the history of the physician assistant profession, the status of the PA in the US healthcare system, and issues and ethics in practice.

**Goal of Course:**

Learners will understand the Physician Assistant profession, including its development as a health care profession, to its status and role in the current health care environment to current issues and ethical dilemmas in clinical practice

**Teaching Methods Used:**

These courses will utilize presentations by practitioners and leaders in the health care, small group discussions, and interactions with clinical environments in the community

**Required Text:**

Cassidy B, Blessing JD. 2008 Ethics and Professionalism: A Guide for the Physician Assistant. Philadelphia, PA: FA Davis Company.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Describe the important landmarks in the development of the PA profession
- Discuss the role of the PA as a member of the interprofessional healthcare team
- Articulate the dynamics of the relationship between physicians and PAs.
- Explain the roles that PAs serve in the provision of care in underserved areas.
- Describe laws and regulations governing PA practice, licensure, and credentialing.
- List the certification and recertification requirements for licensure and NCCPA.
- Evaluate current issues in the health care and economics that impact the PA.
- Identify ethical issues for the PA in professional practice.
- Discuss issues of professionalism in PA practice.
- Compare approaches commonly utilized to assure patient safety, assess quality improvement, and prevent medical errors.

**Case Western Reserve University  
Master of Science in Physician Assistant Studies Program  
CMED 480 - Emergency Medicine**

**Course Title:** Emergency Medicine  
**Course Number:** CMED 480  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week Emergency Medicine course offers the physician assistant learner clinical experience in the care of the urgent and emergent patient. In emergency room settings, learners will provide urgent care, working with patients across the age span, with a variety of undifferentiated presentations.

**Goal of Course:**

The physician assistant learner will assess, diagnose, monitor, manage, refer and educate the undifferentiated patient who presents to the emergency room in urgent distress.

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Cline D, Ma JO, Cydulka R, Meckler G, Thomas S, Handel D. 2012. Tintinalli's Emergency Medicine Manual 7th ed. New York: McGraw-Hill,

**Learning Objectives:**

After completion of this course, learners will be able to:

- Discuss the major diagnoses seen in emergency medicine
- Demonstrate procedures used frequently in emergency medicine
- Describe pharmacologic entities unique to emergency medicine
- Demonstrate skills in working with an interprofessional team
- Display skills in case presentations
- Display skills in documentation required in emergency medicine

**Case Western Reserve University  
Master of Science in Physician Assistant Studies Program  
CMED 481 - Family Medicine**

**Course Title:** Family Medicine  
**Course Number:** CMED 481  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week Family Medicine course provides the physician assistant learner the opportunity to work with patients across the life span. Acute, chronic, and preventive care will be an integrated part of the care of continuity patients.

**Goal of Course:**

The physician assistant learner will work with patients from a variety of social, economic, and cultural backgrounds across the lifespan. They will experience continuity of care while assessing, diagnosing, monitoring, managing, referring and educating patients.

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Mengel M, Schwiebert L. Family Medicine: Ambulatory Care and Prevention, 5th Edition. New York, NY. McGraw Hill Medical.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Describe the pediatric, adult, geriatric and women's health diagnoses commonly seen in family medicine
- Explain care through for the life span for patients in the context of the family unit
- Demonstrate procedures frequently used in family medicine
- Discuss pharmacologic approaches frequently used in family medicine
- Demonstrate skills in working with an interprofessional team
- Display skills in case presentations
- Display skills in documentation required in family medicine

**Case Western Reserve University  
Master of Science in Physician Assistant Studies Program  
CMED 482 - Geriatrics**

**Course Title:** Geriatrics  
**Course Number:** CMED 482  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week Geriatrics course provides the physician assistant learner experiences with geriatric patients. These patients will afford the opportunity to provide acute, chronic, and preventive care. Learners will deal with injuries of the older adult, falls and disease prevention, in the context of the aging process.

**Goal of Course:**

The physician assistant learner will assess, diagnose, monitor, manage, refer and educate older adult patients, with a focus on care for the patient in context of the family and social environment

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Kane RL, Ouslander JG, Abrass IB, Resnick B. 2008. Essentials of Clinical Geriatrics: 6th Edition. New York, NY. McGraw Hill Professional.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Demonstrate an understanding and knowledge of the major diagnoses seen in geriatrics
- Perform frequently used procedures in geriatrics
- Discuss pharmacologic approaches in geriatrics, particularly around dosage
- Demonstrate skills in working with an interprofessional team
- Display skills in case presentations
- Display skills in documentation required in geriatrics

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 483 - Internal Medicine**

**Course Title:** Internal Medicine  
**Course Number:** CMED 483  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week Internal Medicine course offers the physician assistant learner clinical experience in the care of the adult patient. In both hospital and office settings, learners will provide acute, chronic, and preventive care, working with physicians who subspecialize in components of Internal Medicine.

**Goal of Course:**

The physician assistant learner will assess, diagnose, monitor, manage, refer, and educate adult patients in inpatient and ambulatory settings, and gain an appreciation for the role of the subspecialist in care of the adult patient.

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Papadakis M, McPhee SJ, Rabow MW. 2014. Current Medical Diagnosis and Treatment. New York, NY. McGraw Hill Medical.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Demonstrate an understanding and knowledge of the major diagnoses seen in internal medicine
- Perform frequently used procedures in internal medicine
- Discuss pharmacologic approaches in internal medicine
- Demonstrate skills in working with an interprofessional team
- Display skills in case presentations
- Display skills in documentation required in internal medicine

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 484 - Obstetrics and Gynecology**

**Course Title:** Obstetrics and Gynecology  
**Course Number:** CMED 484  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week Obstetrics and Gynecology course offers the physician assistant learner clinical experience in the medical and surgical care of the female patient. In both hospital and office settings, learners will provide acute, chronic, and preventive care, working with physicians who subspecialize in components of Obstetrics and Gynecology, with focus on delivery, postpartum and gynecological surgical care.

**Goal of Course:**

The physician assistant learner will assess, diagnose, monitor, manage, refer, and educate female patients in inpatient labor and delivery, gynecological surgical and ambulatory settings, and gain an appreciation for the role of the subspecialist in care of the female patient are prepartum and postpartum care and gynecological surgery.

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Beckmann CRR, Herbert W, Laube D, Ling F, Smith R. 2013. Obstetrics and gynecology, 7th edition. Philadelphia, PA: Lippincott Williams and Wilkins.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Demonstrate an understanding and knowledge of the major diagnoses seen in obstetrics and gynecology
- Perform frequently used procedures in obstetrics and gynecology
- Discuss pharmacologic approaches in obstetrics and gynecology, with emphasis on drugs that are dangerous to pregnant and lactating women
- Demonstrate skills in working with an interprofessional team
- Display skills in case presentations
- Display skills in documentation required in pediatrics

**Case Western Reserve University  
Master of Science in Physician Assistant Studies Program  
CMED 485 - Pediatrics**

**Course Title:** Pediatrics  
**Course Number:** CMED 485  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week Pediatrics course offers the physician assistant learner clinical experience in the care of the infant, toddler, child, and adolescent patient. In both hospital and office settings, learners will provide acute, chronic, and preventive care, working with physicians who subspecialize in components of Pediatrics.

**Goal of Course:**

The physician assistant learner will assess, diagnose, monitor, manage, refer and educate infant, toddler, child, and adolescent patients in inpatient and ambulatory settings, and gain an appreciation for the role of the subspecialist in care of these patients in the context of their family, culture and community.

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Hay W, Levin M, Deterding R, Abzug M. 2014. Current Diagnosis and Treatment Pediatrics, 22nd Edition. New York, NY. McGraw Hill Professional.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Demonstrate an understanding and knowledge of the major diagnoses seen in pediatrics
- Perform frequently used procedures in pediatrics
- Discuss pharmacologic approaches in pediatrics, with particular emphasis on dosage
- Describe developmental milestones
- Demonstrate skills in working with an interprofessional team
- Display skills in case presentations
- Display skills in documentation required in pediatrics

**Case Western Reserve University  
Master of Science in Physician Assistant Studies Program  
CMED 486 - Psychiatry**

**Course Title:** Psychiatry  
**Course Number:** CMED 486  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week Psychiatry course offers the physician assistant learner a four week clinical experience in behavioral health in adolescent and adult patients. While there will be both hospital and office settings, learners will provide acute, chronic, and preventive care primarily in community settings.

**Goal of Course:**

The physician assistant learner will assess, diagnose, monitor, manage, refer, and educate behavioral health patients in a variety of settings, with a focus on the community. Learners will gain an appreciation for the role of counselling and medication in the care of patients.

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Sadock BJ, Sadock VA. 2007. Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry. Philadelphia, PA: Lippincott Williams & Wilkins.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Demonstrate an understanding and knowledge of the major diagnoses seen in psychiatry
- Perform frequently used procedures in psychiatry
- Discuss pharmacologic approaches in psychiatry
- Demonstrate skills in working with an interprofessional team
- Display skills in case presentations
- Display skills in documentation required in psychiatry



**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 487 - Surgery**

**Course Title:** Surgery  
**Course Number:** CMED 487  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week Surgery course offers the physician assistant learner clinical experience in the preoperative and postoperative care of the patient. In both hospital and office settings, learners will provide surgical care, working with physicians who subspecialize in components of Surgery.

**Goal of Course:**

The physician assistant learner will assess, diagnose, monitor, manage, and refer patients in inpatient and ambulatory settings, and gain an appreciation for the role of the subspecialist in care of the surgical patient.

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Lawrence PF, Bell RM, Dayton MT, Hebert JC. 2012. Essentials of General Surgery. Philadelphia, PA: Lippincott Williams & Wilkins.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Demonstrate an understanding and knowledge of the major diagnoses seen in surgery
- Perform frequently used procedures in surgery including assisting in the operating room and aseptic technique
- Discuss pharmacologic approaches in general surgery
- Demonstrate skills in working with an interprofessional team
- Display skills in case presentations
- Display skills in documentation required in surgery

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 488 - Primary Care**

**Course Title:** Primary Care  
**Course Number:** CMED 488  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week elective course in general internal medicine, general pediatrics or family medicine offers the physician assistant learner additional clinical experience in continuity management of patients that interest them the most. In ambulatory settings, learners will provide care in a longitudinal fashion to develop their preparation for a career of interest.

**Goal of Course:**

The physician assistant learner will explore a primary care discipline to a more indepth manner, providing ambulatory care in a discipline that helps them explore areas of medicine for a career choice..

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Dependent on specialty of choice

**Learning Objectives:**

After completion of this course, learners will be able to:

- Discuss in a more indepth manner the characteristics of a primary care discipline as a career choice
- Describe the advanced care of patients in a primary care discipline
- Provide more advanced, independent care of patients in a primary care discipline
- Demonstrate greater independence in the management of primary care patients

**Case Western Reserve University**  
**Master of Science in Physician Assistant Studies Program**  
**CMED 489 - Intensive Care Medicine**

**Course Title:** Intensive Care Medicine  
**Course Number:** CMED 489  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

This four week elective course offers the physician assistant learner clinical experience in intensive care settings in the specialty of their choice. In intensive care settings, learners will provide medical and post-surgical care, working with physicians who care for patients in intensive care.

**Goal of Course:**

The physician assistant learner will monitor and manage patients in intensive care settings in a specialty of their choosing, and gain an appreciation for the role of the physician assistant in caring for the critically ill hospitalized patient.

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Irwin RS, Lilly C, Rippe JM. 2013. Irwin & Rippe's Manual of Intensive Care Medicine. Philadelphia, PA: Lippincott Williams & Wilkins.

**Learning Objectives:**

After completion of this course, learners will be able to:

- Demonstrate an understanding and knowledge of the major diagnoses seen in intensive care settings
- Perform frequently used procedures in the intensive care setting
- Discuss pharmacologic approaches to managing patients in intensive care settings
- Demonstrate skills in working with an interprofessional team of hospital-based physician
- Display skills in case presentations
- Display skills in documentation required in intensive care

**Case Western Reserve University  
Master of Science in Physician Assistant Studies Program  
CMED 490 - Elective of Student's Choosing**

**Course Title:** Elective of Student's Choosing  
**Course Number:** CMED 490  
**Semester Hours:** 5  
**Semester Taught:** Fall II, Spring II or Summer III

**Description of Course:**

Dependent on specialty of choice

**Goal of Course:**

Dependent on specialty of choice

**Teaching Methods Used:**

Clinical care experiences, didactic presentations, teaching rounds

**Required Text:**

Dependent on specialty of choice

**Learning Objectives:**

After completion of this course, learners will be able to:

- Dependent on specialty of choice

Pamela B. Davis, M.D., Ph.D.

Dean

Senior Vice President for Medical Affairs

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August 20, 2014

Robert Savinell, PhD  
Chair, Faculty Senate  
c/o Rebecca Weiss  
Secretary of the Faculty Senate  
Adelbert Hall

Dear Dr. Savinell:

On behalf of the Faculty of Medicine and for Faculty Senate review, I forward a proposal to establish a MS in Physician Assistant Studies degree program.

The program will take advantage of our faculty and affiliated hospital variety and strengths to prepare graduates to provide high quality health care in Ohio and throughout the country. The program will combine a strong curriculum in basic science studies with clinical opportunities to meet the certification standards of the Accreditation Review Commission on Education for the Physician Assistant. Working as part of inter-professional health care teams under the direction of physicians, PAs will help to address the shortage of health care professionals in Ohio.

The Faculty Council unanimously recommended approval of the proposed program at its June 2014 meeting, after prior review according to established School of Medicine procedures.

I strongly support approval of the program.

Please let me know if I can provide additional information. Thank you.

Sincerely,



Pamela B. Davis, MD, PhD

cc: Dr. Robert Petersen, Chair, Faculty Council 2013-2014  
Dr. Mark Aulisio, Chair, Faculty Council 2014-2015  
Dr. Patricia Thomas  
Dr. Clint Snyder

Dan Anker



SCHOOL OF MEDICINE

CASE WESTERN RESERVE  
UNIVERSITY




**CASE**

CASE WESTERN RESERVE UNIVERSITY

Department of Pathology  
Wolstein Research Building 5-126  
2103 Cornell Road  
Cleveland, OH 44106

MEMORANDUM

TO: Pamela B. Davis, MD, PhD  
Dean, School of Medicine

FROM: Robert B. Petersen, PhD   
Chair, Faculty Council

DATE: June 27, 2014

RE: Proposed Master of Science in Physician Assistant Studies

At its June 23, 2014, meeting, the Faculty Council reviewed a proposal, submitted by Dr. Clint Snyder, to establish a Master of Science in Physician Assistant Studies degree program. The proposal had previously been reviewed by an ad hoc committee, constituted as required by Faculty Council practice and chaired by Drs. Adnan Cobanoglu and Martin Snider, and, following revision in response to the ad hoc committee's criticisms, was recommended for approval by the full Faculty Council.

The proposed program, to be based in the Center for Medical Education and offered under the auspices of Vice Dean for Medical Education Dr. Patricia Thomas, addresses the current and future shortage of health care providers in Ohio. It will be Ohio's first such program based at a School of Medicine.

The Faculty Council believes the new program meshes nicely with the school's focus on inter-professional education and draws on faculty and affiliate strengths across the City of Cleveland. We believe that the program will provide rigorous preparation of its graduates for positions in this growing profession.

Following a thorough review and discussion of the proposal, the Faculty Council voted unanimously to recommend approval of the program.

Please review the program, forwarded to you with a copy of this memo by email. We hope you will forward the proposal to the Faculty Senate for their review and approval.

Please let me know if you would like additional information.

cc: Dr. Clint Snyder; Dr. Patricia Thomas; Dr. Paul MacDonald; Dan Anker