This catalog has been designed to describe and outline the policies of the Electives Program and elective opportunities offered at the Universidad Central del Caribe School of Medicine and its affiliated hospitals.

I. **GOALS AND OBJECTIVES OF THE ELECTIVES PROGRAM**

The Electives Program is aimed to provide students with the opportunity to individualize their course of study. Students are expected to examine their academic records and utilize the senior year to:

A. Broaden their educational horizons beyond narrow specialty areas and gain valuable experience in areas peripheral to their main areas of interest;
B. Select experiences in areas not generally covered by the core curriculum; and
C. Gain some research experience.

The elective courses are available to students who have satisfactorily completed the required courses. Students are required to complete **18 weeks** of approved elective courses during the fourth year of medical school.

No more than **12 weeks** in a particular specialty is permitted. **Additional electives in the same specialty are not included in the 18 weeks required for graduation.** Elective courses taken prior to the fourth year of medicine are not part of the 18 weeks required during the fourth year of medical school.

At UCC elective courses are offered in a minimum of **2 week** periods, unless otherwise specified.

A two-part orientation on the requirements and scheduling of elective courses is offered to UCC third-year medical students in December and February of each academic year.

**Pre-registration for Elective Courses Periods**

There are two pre-registration periods for the fourth year program:

On the assigned days, students are required to visit the Electives Office between 9:00 A.M. and 3:30 P.M. Prior to the visit, the application form must be completed and accompanied with all required information.

II. **PROCEDURES FOR COORDINATING ELECTIVES AT OTHER MEDICAL SCHOOLS**

It is each student’s responsibility to schedule electives at other institutions. He/she should apply directly to the external institution. Once the external institution approves the elective, the student must submit to the Office of Elective Courses a written description of the elective, including the name of the supervisor and the letter of approval of the UCC corresponding department chairperson. The student may submit the elective for approval by the corresponding chairperson of the UCC-SOM prior to applying to the external institution. The chairperson has the final decision on the approval of the elective. The student must provide the Coordinator of Elective Courses the complete mailing address of the supervisor for all electives outside UCC School of Medicine. All documents must be submitted at the time of registration.

Students who take an elective course without completing all the required steps risk receiving no credit for said elective. All students in this situation will be charged a $25.00 administrative fee, per course.

If the sponsoring institution requires a letter from the Dean of Medicine or requests completion of an application by the Dean of Medicine or the Dean of Student Affairs, please contact the Coordinator of Elective Courses.
If the student wishes to cancel an elective course at an external institution, he/she is responsible for notifying the sponsor of the elective course and the Coordinator of Elective Courses at the Universidad Central del Caribe-SOM.

Salaries, stipends, or other remuneration to students are not permitted as part of any elective course taken for academic credit. It is permissible for students to be reimbursed for necessary expenses incurred, if the location and circumstances require that a second residence be maintained for the elective. Ordinarily, there should not be any financial gain to the student, while pursuing elective course.

III. DROP/ADD PROCEDURES

Changes of elective courses may be permitted upon written approval of the proctor of the specific elective, as well as by the director of the respective department, using the Notice of Change or Withdrawal Form. Changes must be completed no less than one month prior to the date of the beginning of the elective. Changes on elective courses that are not completed during the specified time frame will be charged an administrative fee of $25.00. If the change is approved by the proctor, the student must bring the completed and signed form to the Office of Elective Courses. Changes on elective courses that are not completed during the specified time frame will be charged an administrative fee of $25.00. If the change is approved by the proctor, the student must bring the completed and signed form to the Office of Elective Courses. If the student pursues an elective course without following official add procedures while he/she was officially registered in another elective, the student will not receive credit for said elective. Each case will be evaluated in its individual merits. An administrative fee of $25.00 will be charged.

Students who do not show up to scheduled electives impact the image of the UCC-SOM and themselves in an extremely negative manner. This has repercussions, such as making it difficult for other students to be granted electives in the future. Students who are no shows will have it reflected in their official transcript as such (no-shows, n/s) and a reprimand will be sent to the student with a copy attached to his/her record.

IV. EVALUATIONS

All elective courses require an original written evaluation of the student’s performance at the conclusion of each course. Students are responsible for requesting that the evaluation form be sent to the Office of Elective Courses. For courses outside UCC the Office of Elective Courses must receive an original evaluation form completed by the host institution. Evaluations for all electives must be received prior to graduation in order to fulfill the requirements for the M.D. degree.

In addition, students are required to submit an evaluation of their experience in all elective courses. The official evaluation form is available at the Office of Elective Courses.

Student performance in the elective courses is evaluated on a Pass-Fail basis. Outstanding performance is recorded as Honors for the purposes of future recommendations for professional opportunities.

V. MALPRACTICE COVERAGE

The malpractice insurance policy of UCC School of Medicine covers our students while they are pursuing approved elective courses both in Puerto Rico and in the United States.
VISITING STUDENT APPLICATION

I. TO BE COMPLETED BY APPLICANT

Student’s Name: ______________________________________________________________

(Last)          (First)  (Middle)

Mailing Address: ________________________________________________________________

Telephone Number: _____________________________________________________________

Telephone: _____ - _____ - ______

1st: 

(Elective Title)    (Course Number)  From       To

2nd: 

(Elective Title)    (Course Number)  From       To

II. TO BE COMPLETED BY THE DEAN OR AUTHORIZED OFFICIAL

1. The medical student named above is in good standing and is in the _____________ year of a 
   ___________________ program. He/she is authorized to take this elective course at the Universidad 
   Central del Caribe.

2. The student (will) (will not) have health insurance while at UCC.

3. Malpractice insurance (does) (does not) cover the student away from the school.

4. The student (will) (will not) have completed the required clinical clerkship before taking the 
   above requested elective.

5. An evaluation of the student’s performance (is) (is not) required. 
   The completed evaluation should be returned to:

   Signature of School Official __________________________ Date ___________

   Name of School Official __________________________ Title ___________

   Medical School _____________________________________________

   Address __________________________________ City/State/Zip ___________

   Telephone __________________________ Fax ___________

III. TO BE COMPLETED BY UCC ELECTIVE COORDINATOR

Your request for ______________________________________________________________

(Elective Title)    (Course Number)  (From)  (To)

(Is) (is not) approved.

Please report to: ___________________________ at ___________________________

_______________________________  ________________________________

Elective Coordinator            Dean of Medicine
Visiting Students Information

UNIVERSIDAD CENTRAL DEL CARIBE School of Medicine welcome students enrolled at LCME accredited medical schools to apply for elective courses. Students must be in good academic standing and in their final year and MUST have completed all required clerkships.

Students should request dates for participation, which coincide with the dates for electives at UCCEM. There is $200.00 (non-refundable) for the processing of each course application. A check or money order payable to the UNIVERSIDAD CENTRAL DEL CARIBE School of Medicine must accompany each application.

Applications will not be processed until completed documents are received.

In order to be eligible for elective courses the following information is required.

1. The student must be in good academic standing at an LCME accredited medical school and have completed three years of medical studies. Submit a transcript of the medical courses approved.
2. Application is considered only after UCC students register.
3. The maximum number of weeks a student may take electives at the UCC is eight (8). Assignment of visiting students are made after the schedules of UCC students have been completed.
4. Visiting students must receive an evaluation from our medical school for elective course work completed at the UNIVERSIDAD CENTRAL DEL CARIBE School of Medicine.
5. Evaluation of the student's performance will be sent to the Office of Elective Courses at the visiting student's home school.
6. A written communication from the Dean or authorized delegate of the home school expressing the approval of the student's request is required.
7. The applicant student must submit a proof of immunity to measles, mumps and rubella, as well as successful completion of Universal Precaution Training.
8. The UCCEM School of Medicine does not provide student health, liability or malpractice insurance for visiting students. Visiting students must provide their own health insurance and be responsible for their malpractice insurance. Submit proof of health insurance and malpractice insurance.
9. The UCCEM will assist in the identification and location of housing facilities. However, the students are responsible for their room and board.
10. If the elective requested requires direct contact with patients, students must be able to speak fluent conversational Spanish. Student must be fully bilingual.

Students interested in applying for electives at UCCEM should contact:

Héctor O. Santos-Reyes, M.D.
Coordinator for Elective Courses
UNIVERSIDAD CENTRAL DEL CARIBE
http://medelectives.uccaribe.net
P. O. Box 60327
Bayamón, Puerto Rico 00960-6032
(787)798-3001 (Exts. 2318 - 2324)
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| 23   | Jan. 18-22     |        |        |        |        |        |
| 24   | Jan 25-29      |        |        |        |        |        |
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| 26   | Feb. 8-12      |        |        |        |        |        |
| 27   | Feb. 15-19     |        |        |        |        |        |
| 28   | Feb 22-26      |        |        |        |        |        |
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| 30   | Mar. 7-11      |        |        |        |        |        |
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Feb 15 – Mar 4

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Quiere decir que esta fecha no está disponible.
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MANA-04  ANATOMY TEACHING ELECTIVE IN GROSS ANATOMY

Prerequisites: Third year clerkships

This course has been designed to meet the needs of third and fourth year medical students and residents who desire an in depth Anatomical review of their chosen specialty area. They may elect advanced studies in three broad areas: Phase "A": Back and Limbs; Phase "B": Thorax Abdomen and Pelvis; and Phase "C": Head and Neck. Regardless of the region, each student will be expected to carry out a series of museum quality prosections as permanent additions to the departments teaching collection. The students will work under the general guidance of a faculty member and will also conduct clinical correlation discussions and formal demonstrations on their prosection.

Person in Charge : Sofia Jiménez, Ph. D., Wilson Vera, M.D.
Dates Offered : (By arrangement)
Course Duration : 4 weeks
Enrollment per Session : 5 students
Meeting Place : Anatomy Department
Evaluation : At the completion of the work the students will be evaluated by an oral examination on their dissections.

MANA-05  ADVANCED NEUROANATOMY

This course has been designed to meet the needs of third and fourth year medical students as well as residents who desire an in depth neuroanatomical review of their chosen specialty area. They may elect advanced studies in three broad areas:

Phase A: Neuroanatomy
Phase B: Neurohistology
Phase C: Neuropathology and Neuro-imaging with clinical correlations.

Depending on the individual student's specific interest and needs, clearly defined objectives can be set within any given sub-specialty. For example, a student interested in Neurosurgery may choose to broaden his/her knowledge of Neuroanatomy with emphasis in Neuropathology and Neuro-imaging. Students could be expected to carry out a series of museum quality prosection as permanent additions to the Department's teaching collection*. He/She will also review the literature in the specific subject. The students will work under the general guidance of a faculty member and will also conduct clinical correlation discussions, formal demonstrations on their prosection and review sessions to the first year medical students.

Person in Charge : Rosa M. Haiffe, M. D.
Dates Offered : (By arrangement)
Course Duration : 2 - 4 weeks
Enrollment per Session : 2 students
Meeting Place : Anatomy Department
Evaluation : At the completion of the course, the students will be evaluated by an oral examination, a written report (ready for publication) and the quality of specimen preparation

*This dissection requirement depends on the availability of cadaveric specimens.
MANA-08  RESEARCH IN CELLULAR AND MOLECULAR BIOLOGY

Prerequisites: First two years of medical curriculum

This is an introductory course to scientific methodology and research in the basic biomedical sciences within the general areas of cellular and molecular biology. The main research focuses of the faculties of Department of Anatomy & Cell Biology are to study the structure function relation of neurotoxins from snake and snail venoms and mechanism of apoptosis. The student will actively participate in individual research topic one of the research labs in the Department. The student will work under the supervision of a faculty member. At the end of the course, the student should be able to:

1. Search for the scientific literature relevant to the area of interest;
2. Discuss the theory which serves as the basis for the project and the methodology employed;
3. Plan and perform experiments with an adequate degree of skillfully;
4. Analyze and interpret the results obtained;
5. Use the computer as a research tool.

Person in Charge: [Name]
Dates Offered: (By arrangement)
Course Duration: 4-6 weeks
Enrollment per Session: 1-2 per laboratory
Meeting Place: Departmental Research Labs
Evaluation: The Student will be evaluated by the mentor regarding the above mentioned objectives throughout the session. In addition, the student will submit a short report on the activities performed and give one oral presentation.

MANA-11  SMALL ANIMAL MODEL & THROMBOSIS

Prerequisites: First year medical Physiology

Description

The course will involve review of a specific body of literature pertaining to a specific question. The student will learn to design and carry out experiments that will attempt to answer the question set forth. The experiment will be written up in journal style and presented to the laboratory in seminar style.

General Educational Objectives:

To teach experimental design

Learning Activities:

Review of current literature experimental design, implementation and presentation

Person in Charge: [Name]
Dates Offered: (By arrangement)
Course Duration: 6 weeks
Enrollment per Session: 1-2 per laboratory
Meeting Place: Laboratory
Evaluation: The Student will be based on performance of the student throughout the session, a written summary of work completed and oral presentation.
DEPARTMENT OF PATHOLOGY

MPATH-29 INTRODUCTION TO IMMUNOHISTOCHEMISTRY AND IN SITU HYBRIDIZATION

Prerequisites: Having successfully completed a Surgical Pathology elective

Course Description:

This course will provide an in depth laboratory exposure in the fields of IHC, ISH, and advanced staining techniques to complement surgical pathology. The medical student will be educated on how to perform these tests and their purpose. The medical student will also develop understanding of the pathophysiologic basis of disease and their respective changes in tissues. Justification

When morphology and routine staining cannot provide the diagnosis in surgical pathology, pathologists turn to advanced staining techniques including Immunohistochemistry (IHC) and in situ hybridization (ISH). IHC detects the presence of critical marker proteins in tissue samples while ISH detects target RNA or DNA sequences. Both techniques are commonly used for difficult to diagnose cancer where the presence or absence of particular proteins or sequences helps pathologists make an accurate diagnosis and differentiate between diseases that look morphologically similar. Also IHC can help the direct patient treatment based on the absence or presence of specific receptors.

Competencies:

In order to understand and appreciate the material been taught, the student needs a basic understanding of the pathologic basis of disease.

Goal (s):

The Goal of this clerkship is to expose Medical Students to the fields of Immunohistochemistry and In Situ Hybridization.

General Objective (s):

The general objective students understand the purpose and benefits of special stains and molecular techniques in the practice of surgical pathology.

Specific Objectives:

1. To understand proper fixation and blocking techniques used for immunohistochemistry.
2. To describe the basic steps for performing direct or indirect immunostaining.
3. To list the biomarkers used for Breast, Cervical, Endometrial, and Bladder Cancer.

Learning Activities:

The learning process will occur through daily discussions of specific cases between the Student and the Faculty Member. The students will be directed to study and read about cell biology and pathologic basis of disease for the specific cases being discussed. The medical student will also participate in any research process ongoing in the laboratory.
Evaluation and Assessment:

Students will be evaluated on a daily basis. The evaluation will take into consideration the promptness, attitude, and disposition of the Medical Student. The student will be expected to demonstrate the acquired knowledge through verbal quizzes and case discussions. The student will also need to perform an oral case presentation incorporating the clinical and histological aspect with the molecular characteristic of the diagnosis of cancer.

Person in Charge : José R. Paz, M.D.
Laboratorio de Patología Dr. Noy
Edificio Capital Center, Sótano Torre 1
Hato Rey, Puerto Rico
(787) 751-1312

Dates Offered : Through-out the academic year, by arrangement

Course Duration : 2-4 weeks
Enrollment per Session : 1
Meeting Place : Private office Pathology
Evaluation : The grading system will consist of 50% demonstration of knowledge and 50% on the overall attitude and behavior of the Medical Student during the clerkship.
DEPARTMENT OF PHARMACOLOGY

MPHAR-10  RESEARCH IN MOLECULAR PHARMACOLOGY AND TOXICOLOGY

Prerequisites: First two years of medical curriculum

This elective course has been designed to introduce students to a milieu of basic cellular and molecular biology techniques in the areas of pharmacology and toxicology. Students will conduct a short research project in the area of interest of the faculty member. Research topics include: the role of mitochondria in cancer and neurodegeneration, DN repair and mutagenesis and signal transduction. The student will be trained in the following areas: search of pertinent scientific literature, design and performance of experiments, analysis, interpretation and writing of scientific data. The student will work under the supervision of faculty member and/or laboratory staff. After completion of the work, the student will make an oral presentation consisting of a summary of the results of his/her research work.

Person in Charge : Faculty of Pharmacology Department
Dates Offered : (By arrangement)
Course Duration : 4-6 weeks
Enrollment per Session : 1-6 students
Meeting Place : Pharmacology Department
Evaluation : The evaluation will be based on the performance of the student throughout the session and the oral presentation.
MBIO-01  RESEARCH IN BIOCHEMISTRY
Prerequisites: First year of the medical curriculum

Students will be assigned to different members of the faculty of the Department of Biochemistry to conduct research in the area of interest to the faculty member. The faculty will discuss the research problem with the student and will assign reading material. After reading the necessary articles closely related to the research problem the student will begin the research work. When the work is finished the student will present a summary and the results of his work to the faculty and participating students.

Person in Charge : Faculty of Biochemistry Department
Dates Offered : Summer (MS 1,2,3; All Year(MS4))
Course Duration : 6 weeks
Enrollment per Session : 6 students
Meeting Place : Biochemistry Department
Evaluation : Faculty will evaluate the student summary presentation. Supervising faculty will use this and additional data to evaluate the student.
This elective on immunoretrovirology is designed to familiarize the student with virological and immunological aspects of the retroviridae family and how this group of viruses impacts human beings. Library literature review is followed by individualized discussion on specific topics. The basic principle and clinical interpretation of flow cytometry, nucleic acid amplification and sequencing techniques, and cytokines and chemokine assays will be addressed. Upon termination of this experience, the student is required to submit an oral or written report of a short research project.

**Person in Charge**: Dr. Eddy Ríos-Olivares, Dr. José Rodríguez, Prof. Zilka Ríos-Orraca, Dr. Miguel Otero, Dr. Nawal M. Boukli

**Dates Offered**: Summer

**Course Duration**: 6-8 weeks

**Enrollment per Session**: 2 students

**Meeting Place**: Department of Microbiology and Immunology

**Evaluation**: Written report and oral discuss
DEPARTMENT OF PHYSIOLOGY

MPHYS-05  RESEARCH IN PHYSIOLOGY

This course encompasses a period of six-seven weeks during the summer, in which a medical student is totally immersed into an area of research in biomedical science, specifically in the field of physiology. The student is first acquainted with the different research projects available in the Department. He/She finally chooses the research area to work during the summer. All details related to the area are discussed with the professor in charge. The professor will design a program for the student in such a way that all the objectives of the course are covered. The student will be obliged to work a full time schedule of no less than 37.5 hours per week. The student will be supervised by the mentor and laboratory staff.

Each week a meeting between the student and mentor will take place to discuss the experimental results and the progress of the project. In addition, "journal club" type meetings with the department faculty will be planned in the students schedule during the six-seven weeks period.

Course Objective:

1. To initiate medical students in the area of biomedical research at an early stage of their career.
2. To teach the medical students the fundamental concepts involved in the preparation of a research project and its eventual presentation both in the oral and written format.
3. To train the students in scientific methodology and laboratory methods.
4. To familiarize the students with the methods that are used in bibliographical searches related to his/her specific research area.
5. To promote open discussions among the students and faculty on topics related to research.

Person in Charge : To be assigned by the Chief Department
Dates Offered : Summer
Course Duration : 6-7 weeks
Enrollment per Session : 2 students
Meeting Place : Department of Physiology
Evaluation : At the end of the course, the student will be required to present the results of the research project in a seminar presentation.
DEPARTMENT OF NEUROSCIENCES

MNEUR-01 BASIC NEUROSCIENCES APPLICATION TO TRANSLATIONAL RESEARCH
Pre-requisites: Introductory course in Neuroscience

Justification:
To improve human health, scientific discoveries must be translated into practical applications, starting at “the bench” with basic research. The National Institute of Health currently strives to enhance the translational science. Thus, it is critically important to train future health professionals in basic science approaches which have a potential to develop in clinical applications. This is the purpose of the course.

Course Description:
The course will combine classroom instructions, seminars and discussions, and experimental work in the lab. The students will assess genetically modified animals (mice) with impairments of synaptic transmission as a model system for the study of epilepsy.

Competencies:
The instructor has extensive experience in the subject of the course, including research, teaching, training, and mentoring.

IV. Goal(s). The goal of this course is to familiarize future health professionals with the principles of basic neuroscience research and to illustrate its applications for disease related studies.

General Objective(s)
1) To train students to read and understand scientific literature in basic neuroscience
2) To introduce the student to experimental design
3) To introduce students to the basic concepts of statistical analysis and data interpretation

Specific Objectives:
1) To study and present the scientific literature related to behavior paradigms of animal models used for epilepsy study
2) To design and conduct experiments to study seizure activity in animals with genetically modified presynaptic proteins (synapsins and Rab3a)
3) To analyze, interpret, and present experimental data

Learning Activities:
1) Reading, discussing, and presenting scientific papers
2) Conducting behavioral studies using animal models (mice) for the epilepsy research
3) Analysis of the data employing a set of statistical tests
4) Discussions of the literature and the obtained experimental data

Person in Charge: Maria Bykhovskaia
Dates Offered: June 8 – August 14, 2009
Course Duration: 6-8 weeks
Enrollment per Session: 4 students
Meeting Place: Neuroscience Department Conference Room
Evaluation and Assessment: The following parameters will be evaluated: active participation; quality of literature presentations; obtained experimental results; attendance
Grading System: A: Leading discussions, 100% attendance, clear and well organized presentations; B: 80-90%; C: 70-80%; D: 60-70%; F: 50-60%
DEPARTMENT OF FAMILY MEDICINE

MFmed-02  FAMILY MEDICINE PRECEPTORSHIP
Prerequisites: Clerkship of Family Medicine

The student will be assigned to a family physician preceptor. The medical student under direct supervision will participate in the actual practice of Family Medicine. This experience may take place in an office, community health center, or hospital setting.

Person in Charge : Eric González, M. D.
Dates Offered : Throughout the Year (By arrangement with the Department of Family Medicine)
Course Duration : 3-4 weeks
Enrollment per Session : 2 students
Meeting Place : At the Preceptor's Office to be Assigned

MFmed-11  PRIMARY CARE MEDICINE
Prerequisites: Have completed third level, Internal Medicine, Pediatric, and Family Medicine Course

The student will be assigned to a Primary Care Center. The medical student under direct supervision will participate in the management, diagnosis and health promotion of patients. The student will be involved in the utilization of the latest accepted preventive services protocols and the management of common primary problems.

Person in Charge : Eric González, M. D.
Dates Offered : Throughout the Year (By arrangement with the Department of Family Medicine)
Course Duration : 4 weeks
Enrollment per Session : 3 students
Meeting Place : At Primary Care Center - to be Assigned

Objective:

The student will be exposed to different ambulatory experiences in a primary care practice. The Student:

1. Will participate working with a Primary Care Physician with ambulatory in a Primary Care Center.
2. Will make procedures with his patient under direct supervision.
3. Will participate in didactic activities offered in the Primary Care Center.
4. Will use established protocols and guides for the management of primary conditions and for the health maintenance of their patients.

*Family Medicine Preceptorship and Primary Care Medicine must be coordinated with Mrs. Linnette Santana 787-798-3001 Ext. 2067

MFmed-41  INTERNATIONAL MEDICINE

Rev. Apr 2015
Prerequisites: Being a student in good standing at Universidad Central del Caribe, School of Medicine, Complete immunization according to DCD requirements, Valid USA passport

Description:

Students are involved in rural patient care under preceptor supervision at Latin-American, including Guatemala, Peru, and República Dominicana among others. The rotation is designed to give students a cross-cultural medical immersion experience in a rural place on public health, epidemiology, health care financing, and health care reform as it is occurring in Latin-American. The International Clinical Electives Program is designed to provide students with an opportunity to enrich and diversify their medical education in a different physical a social setting.

General Educational Objectives:

1. To experience a medical system other than their own.
2. To gain knowledge of the importance of diseases that are common in Latin-American
3. To observe and develop existing clinical skills
4. To broaden public health knowledge
5. To develop creativity in problem-solving
6. To deepen commitment to providing high quality medical services in underserved population
7. To provide opportunities to explore alternate career possibilities
8. To gain experience in aspects of medicine beyond the core curriculum
9. To develop a plan to deal with populations with medical problems facing different groups within another society, the financing of medical care, and the role of government in healthcare outside of the student's home country.
10. To develop sensitivity to diversity and to appreciate cultural differences

Learning Activities:

The duration of the International Clinical Elective Program is 2-4 weeks. Each student will be assigned a preceptor who will assess the student's performance and give him/her a written report or certificate upon completion of the rotation. This represent 100% of his/her grade. Some learning activities required for completion of this experience are: 1. Elicit medical history, 2. Perform physical examination under preceptor supervision and 3. Elaborate and implement a health education plan.

Person in Charge: José Vargas-Vidot, M.D.

Dates Offered: By Coordination with Preceptor
Course Duration: 2-4 weeks
Enrollment per Session: By Coordination with preceptor
Meeting Place: Iniciativa Comunitaria's Office
Evaluation: Standard Evaluation From (100%)

The Family Medicine courses are offered in the following centers:
Dr. Ariel Cruz Igartúa
Instituto Medicina de Familia
Roosevelt #1028 Puerto Nuevo
PO Box 193239
San Juan, PR 00919-3239

Dr. Félix Betancourt
Centro Medicina Ambulatorio
Hospital San Pablo
Calle Santa Cruz
Bayamón, PR 00959
PO Box 236
Bayamón, PR 00960

Dr. Luis Pérez Toro y/o
Dra. Leslie Hoy Santiago
Grupo Médico Santa Cruz
Oficina (314)
Calle Santa Cruz B-7
Bayamón, PR 00959
Edificio Médico Santa Cruz #73
Suite 314 Calle Santa Cruz
Bayamón, PR 00959

Dr. Francisco Chico
Instituto Medicina de Familia Nogal
Ave. Nogal IJ-3 / Royal Palm
Bayamón, PR 00956

Dr. Héctor Maldonado
Hospital Pavia

Dr. José Rodríguez
Hospital Castañaer

Dr. Rafael Cedeño
Clínica Medicina de Familia y Asociados de Guaynabo Roced, Inc.

Dr. Michael Fucile / Dra. Ana Santos
Centro de Medicina Primaria de Corozal

Dr. Eduardo Sastre / Israel Pou
CEMPRI-Naranjito

Dra. Linette Ruiz
Centro Universitario de Medicina Integral y Complementaria (CUMIC)
Hospital Universitario Ramón Ruiz Arnau

Dr. Gilberto Gil / Dr. Juan C. del Río
AMEREC
Calle Gándara #40
Corozal, PR 00783

Dr. Anselmo Fuentes
Davidson Plaza / Levittown
Ave. Comerio #500 Local 10
Bayamón, PR 00949

Dra. Sonia Fernández
Clínicas Primarias
Hospital de Veteranos

Dr. Luis Rivero
Centro de Salud Javier Antón
Calle Piñero #1 Esq. Vallejos
Río Piedras, PR 00926

Dr. Alejandro Medina
Edificio Joaquín Montesino
Bayamón, PR 00925
PO Box 997
Bayamón, PR 00960

Dr. Luis Izquierdo Mora
Calle Williams Jones 1107 (Altos)
Río Piedras, PR 00925

Dr. Fernando Lucca
Ave. San Claudio #370
Urb. Sagrado Corazón
Río Piedras, PR 00956

Dr. Samuel Maduro
Torre San Pablo Suite 705
Calle Santa Cruz #68
Bayamón, PR 00961

Dr. Félix Casiano
CDT Morovis
PO Box 518
Morovis, PR 00687
MFMED-32 CLINICAL EXPERIENCE FOR MEDICAL STUDENTS
Prerequisites: First year medical students

Description of the Clinical Experience:

The clinical experience will consist of a four weeks rotation in one of the identified sites. It will be mainly a clinical experience in which the medical student will have the opportunity to evaluate patients that present for initial evaluations, follow-up care, and urgent care.

On the first day of the rotation the student and the preceptor will meet and the student should be instructed in issues such as attendance, punctuality, dress code, space for his/her belongings and grievance procedures. Once these issues are clearly identified the preceptor and the student should complete the learning contract. As part of establishing the learning contract the preceptor and the student will review the objects together. They may add additional objectives by mutual consent if they ensure that the original objectives are not compromised. Assess the student’s knowledge according to the year of medical school in which the student is at the moment of the preceptorship. The medical school will provide the preceptor with the competencies that he/she should have. The preceptor will evaluate other experiences that the student may have had that add to his/her fund of knowledge such as degree in Public health or work experience.

The following educational strategies may be used:

1. Will participate in an orientation about cultural sensitivity (This activity is required of all students)
2. Will take a pre and post-test about cultural sensitivity (This activity is required of all students)
3. Shadow other health professionals in their clinics (i.e shadow the nutritionist while she/he is evaluating and orienting patients concerning their diet)
4. Interview other members of the health care team so that they can be oriented as to the roles and responsibilities of each professional
5. Participate in clinics performing histories, physical exams, assessment and treatment plans for initial patients, follow-up patients and urgent care
6. Accompany preceptor and/or other health professional on home visits
7. Accompany preceptor and/or other health professional on visits to the community
8. Prepare a complete presentation on a chosen patient in which a multidisciplinary treatment plan is prepared. This plan should be culturally sensitive and should incorporate health promotion and disease prevention. (This activity is required of all students)
9. Interview the executive director and the medical director of the center
10. Review the organizational structure of the center
11. Attend a meeting of the board of directors of the center

Not all students will be able to participate in all the above activities. The preceptor and the student may develop other activities as long as they are conductive to attaining the objectives of the rotation.

Specific Objectives:

After the four weeks clinical experience (rotation) the medical student will be able to:

1. Describe the role of all the health professionals that participate in the site the student is assigned to
2. Identify when consultation with other health care professionals is indicated
3. Identify factors pertaining to cultural sensitivity and/or special needs within the population served by the site
4. Evaluate patient of all ages for health promotion and disease
5. Perform a history, physical exam, and make an assessment of the health problems of a patient that comes for an initial evaluation
6. Identify all the health promotion and disease prevention interventions that are appropriate for the patient that has undergone the initial evaluation.

7. Design a management plan for the patient, that is interdisciplinary in nature and considers both health promotion and disease prevention, and disease management.

8. Perform a history, physical assessment and treatment plan for a patient that presents for an urgent condition.

9. Identify opportunities for health promotion and disease prevention in patients that present for urgent care.

10. Perform a history, physical exam, assessment and treatment plan for patient that present for care for chronic conditions. The treatment plan should incorporate the appropriate members of the health care team.

11. Formulate health care plans that are culturally sensitive whether the patient evaluated comes for an initial evaluation, follow-up or urgent care.

**Person in Charge**: Throughout the year (By arrangement with the Academia de Directores Médicos de Puerto Rico, Inc.)

**Dates Offered**: 
**Course Duration**: 4 weeks
**Enrollment per Session**: 5 students
**Meeting Place**: At Primary Care Center - Assigned

**Evaluation**: The following parameters will be used for the evaluation:

1. Attendance 5% (Students must complete the 160 hours; if they are absent they must make-up the time lost. Students will lose points due to absences without a valid excuse)
2. Punctuality 15%
3. Evaluation of the student’s performance in clinic 30%
4. Evaluation of the case presentation 25%
5. Respectful relationship with other members of the health care team, patients and peers 25%

**The evaluation will be based on:**

1. Direct information by the preceptor
2. Feedback given to preceptors by other members of the health care team
3. Attendance sheet
4. Formative evaluation that will be done midway through rotation

**MFMED-33 COMMUNITY EXPERIENCE FOR MEDICAL STUDENTS**

**Prerequisites**: First year medical students

**Description of the Community Experience:**

The community experience will consist of a four weeks rotation in one of the identified sites. It will be mainly a community experience in which the medical student will have the opportunity to understand the organization of the health care center, the particular characteristics of its population, the clinical protocols used and the rationale for their use among others.

On the first day of the rotation the student and the preceptor will meet and the student should be instructed in issues such as attendance, punctuality, dress code, space for his/her belongings and grievance.
Once these issues are clearly identified, the preceptor and the student should complete the learning contract. As part of establishing the learning contract the preceptor and the student will review the objects together. They may add additional objectives by mutual consent if they ensure that the original objectives are not compromised. Assess the student’s knowledge according to the year of medical school in which the student is at the moment of the preceptorship. The medical school will provide the preceptor with the competencies that he/she should have. The preceptor will evaluate other experiences that the student may have had that add to his/her fund of knowledge such as degree in Public Health or work experience. The following educational strategies may be used:

1. Will participate in an orientation about cultural sensitivity (This activity is required of all students)
2. Will take a pre and post-test about cultural sensitivity (This activity is required of all students)
3. Shadow other health professionals in their clinics (i.e. shadow the nutritionist while she/he is evaluating and orienting patients concerning their diet)
4. Interview other members of the health care team so that they can be oriented as to the roles and responsibilities of each professional
5. Participate in clinics performing histories, physical exams, assessment and treatment plans for initial patients, follow-up patients and urgent care (Only a small percent of the time of the rotation, not to exceed 10-20%).
6. Accompany preceptor and/or other health professional on home visits
7. Accompany preceptor and/or other health professional on visits to the community
8. Interview the executive director and the medical director of the center
9. Review the organizational structure of the center
10. Attend a meeting of the board of directors of the center
11. Prepare a community project such as community assessment, research on a community health problem, health education, promotion or outreach, survey of community resources, coordination of a community intervention, etc. (This activity is required of all students participating in the community experience rotation)

Not all students will be able to participate in all the above activities. The preceptor and the student may develop other activities as long as they are conductive to attaining the objectives of the rotation.

Specific Objectives:

After the four weeks community experience (rotation) the medical student will be able to:

1. Describe the role of all the health professionals that participate in the site the student is assigned to
2. Identify factors pertaining to cultural sensitivity and/or special needs within the population served by the site
3. Describe the organizational chart of the health center that they are assigned to
4. Describe the clinical guidelines that are used in the health center that they are assigned to
5. Identify all the health promotion and disease prevention protocols in place in the health center
6. Organize a project such as a community assessment, patient education activity or outreach activity
7. The previously stated objectives will be used by medical students. They should be tailored to the knowledge and skills that they have according to the level of training.

Dates Offered: Throughout the year (By arrangement with the Academia de Directores Médicos de Puerto Rico, Inc.)
Course Duration: 4 weeks
Enrollment per Session: 5 students
Meeting Place: At Primary Care Center - Assigned
The following parameters will be used for the evaluation:

1. Attendance 5% (Students must complete the 160 hours; if they are absent they must make-up the time lost. Students will lose points due to absences without a valid excuse)
2. Punctuality 15%
3. Evaluation of the student’s performance in clinic 30%
4. Evaluation of the Case presentation 25%
5. Respectful relationship with other members of the health care team, patients and peers 25%

The evaluation will be based on:

Direct information by the preceptor
1. Feedback given to preceptors by other members of the health care team
2. Attendance sheet
3. Evaluation of the community project
4. Formative evaluation that will be done midway through rotation
5. Summative evaluation that will be done in the last two days of the rotation and discussed and signed by the preceptor and the student
6. Summative evaluation that will be done in the last two days of the rotation and discussed and signed by the preceptor and the student
MFMED-57  INTERNATIONAL MEDICINE I & II
Pre-requisites:  3rd year completed

Description:

The International Medicine Elective is designed to provide students with an opportunity to enrich and
diversify their medical education in a different physical, cultural, and social setting. All of the activities are
aimed at improving the health status of the populations served as well as establishing partnerships with
local health care providers and educators.

General Education Objectives:

Gain valuable experience and insight from service learning activities in international clinical settings.

Specific Objectives:

1. To gain international health exposure
2. To gain knowledge of the importance of diseases that are uncommon in a student’s home country
3. To broaden public health knowledge
4. To develop creativity in problem-solving
5. To learn, develop and apply practical skills in non-traditional settings
6. To develop sensitivity to different health care delivery systems by working alongside local health
care providers
7. To demonstrate effective team-building skills with colleagues from multiple medical disciplines
8. To deepen commitment to providing high quality medical services
9. To provide opportunities to explore alternate career possibilities
10. To gain experience in aspects of medicine beyond the core curriculum
11. To understand the relationship between medicine and society in another culture. This includes
developing an understanding of medical ethics and law, the recognition of medical problems
facing different groups within another society, the financing of medical care, and the role of
government in healthcare outside of the student’s home country
12. To introduce participants to cultures and lifestyles in remote rural areas

Learning Activities:

- Online research
- Clinical observations
- Written papers (case reports and/or case series)
- Weekly journal
- Power Point™ presentation
- Service learning through a community education project

Person in Charge :  
Dates Offered :  August through June
Course Duration :  4 weeks
Enrollment per Session :  By Coordination with preceptor
Meeting Place :  As per previous agreement
Evaluation :  Pass or Fail
50% Weekly presentations
50% Weekly journal
The purpose of the course is to acquaint the students with all the clinical aspects of gastrointestinal disease both at the in and outpatient level. The students are expected to participate in the management of gastrointestinal diseases. They are encouraged to perform a complete history and physical examination with particular emphasis in the gastrointestinal system. Besides, they must formulate a differential diagnosis and a plan of treatment. Attendance to all endoscopic procedures is mandatory.

Person in Charge: Roberto Vendrell/Abdiel Cruz
Dates Offered: Year round (By arrangement)
Course Duration: 4 weeks
Enrollment per Session: 1 student
Meeting Place: Gastroenterology Section in the Third Floor of the University Hospital Dr. Ramón Ruiz Arnau.

Evaluation: Evaluation will be the responsibility of the attending in charge, on the basis of knowledge, skills mastered and attitudes developed during the course. The evaluation may include an objective examination.

MIMED-10 VAH CLINICAL GASTROENTEROLOGY
Prerequisite: Have successfully completed third year Internal Medicine Course.

This is an elective course geared to present in an updated manner, the physiology, pathophysiology, diagnosis and management of the gastrointestinal diseases. During this elective course, the student will have the opportunity to be exposed to a large variety of gastrointestinal and hepatic diseases throughout the evaluation of patients in different settings, both hospitalized and ambulatory. The student will be under the direct supervision of staff Gastroenterologists. The student will also have the opportunity to observe a large variety of endoscopic procedures in a state of the heart Gastroenterology Laboratory. In the Lab he will be able to correlate the history and physical findings of the patients with the video images of the actual findings in the GI tract, a real in vivo clinico pathological correlation. As part of this academic geared rotation, the student will participate in weekly multidisciplinary academic activities in which Radiology, Pathology and Surgery are also actively involved. The student has available audiovisual materials books and journals to complement their experience during the rotation. The goal of the rotation is that students learn about gastrointestinal disorders and enjoy the process of learning.

Person in Charge: Jaime Martínez-Souss, M.D.
Alternate: María Dueño, M.D.
Dates Offered: Year round Academic Year: (By arrangement)
Course Duration: 2 - 4 weeks
Enrollment per Session: 1 student
Meeting Place: Gastroenterology Section – OPA Building
Veterans Administration Hospital 7:30 AM
Night Duties: No
Evaluation: The student will be evaluated by sponsors on the basis of their knowledge, skills and attitudes developed during the course.
MIMED-11  CLINICAL HEMATOLOGY AND ONCOLOGY  
(Introduction To Clinical Diagnosis And Management)  
Prerequisites: Internal Medicine Clerkship  

The purpose of this elective is to expose the fourth year student to a diverse variety of clinical problems in the field of Hematology and Oncology. The student will progressively be assigned more responsibilities in the handling of patients as his/her mastering of the different skills is demonstrated. The rotation will include exposure and direct hands on experience with acutely ill patients in a hospital setting along with a dense exposure to the ambulatory diagnosis and management of patients with blood and malignant disorders. The rotation is organized using the inpatient facilities at HURRA. The outpatient facilities include the clinics in HURRA and offices in the San Pablo Medical Center. A particular emphasis on understanding the clinical evaluation and basis of therapeutic decisions for malignant disorders is made. In addition reviewing the laboratory application for the diagnosis of blood dyscrasias along with the physiologic basis of management of blood disorders is made. The student is expected to present a one hour seminar at the conclusion of the elective. Assistance to didactic Departamental activities is compulsory. Only one student can be accommodated per month.  

Person in Charge : Robert F. Hunter, Juan Vázquez, M.D., J. Oppenheimer, M.D., Augusto Medina, M.D. Madeline García Soberal, M.D.  
Dates Offered : Year round (By arrangement)  
Course Duration : 4 weeks  
Enrollment per Session : 1 per month  
Meeting Place : Hematology and Oncology Section  

MIMED-17  INFECTIOUS DISEASES  
Prerequisites: Internal Medicine Clerkship  

The student will function, with guidance by a senior resident and attending physician, as consultant in Infectious Diseases. Also will participate in bedside consultative evaluation of patients and the presentation of findings on daily teaching rounds. Student is required to employ standard textbooks, contemporary literature and laboratory data in an organized fashion, perform an adequate evaluation of patients and establish a good working diagnosis. Progress of patients will be assessed daily and recorded. Regular didactic teaching will be provided by residents and attending. Progress of the student during the elective will be monitored during daily teaching rounds by the attending faculty.  

Person in Charge : Dr. Sol M. Carrillo  
Dates Offered : Year round (By arrangement)  
Course Duration : 4 weeks  
Enrollment per Session : 1 student  
Meeting Place : Conference Room, Department of Internal Medicine  
Evaluation : Evaluation will be the responsibility of the attending in charge, on the basis of knowledge, skills mastered and attitudes developed during the course. The evaluation may include an objective exam, and/or seminar presentation of an assigned infectious diseases theme.
Goals and Objectives

The goal of the ICU rotation is to provide the student with a suitable background in critical care medicine. Students should acquire a sufficient knowledge base to participate in the care of critically ill patients. Fourth-year students who complete the rotation should have the ability to deal with simple and straightforward problems in critical care medicine.

Person in Charge: Juan A. Ruiz-Ramos, M.D.
Dates Offered: November-January (By arrangement)
Course Duration: 2-6 weeks
Enrollment per Session: 2 (maximum)
Meeting Place: Department of Medicine
Evaluation: Observation by house officers and attending physicians

Role of the Medical Students in the MICU

Medical students rotating through the MICU are an integral part of a team that includes an attending physician, medical residents, nurses, respiratory therapists and nutritionists. While the attending physician has ultimate responsibility for the care rendered, each member of the medical team has important responsibilities. Most of the direct patient care is provided by the residents, including the physical assessment of patients, the performance of procedures and the writing of all orders. The second or third-year resident also acts as a supervisor and teacher, and should assist the students in evaluating patients. The residents work closely with the attending in coordinating and supervising the care rendered and in deciding who is admitted to and discharged from the MICU. All major patient care decisions should be discussed with the attending. All procedures by students should be supervised by the residents until the student demonstrates competence in performing a particular procedure. The insertion of pulmonary artery catheters should always be supervised by the MICU attending.

Non-physician members of the MICU team are valuable resources and provide useful recommendations on a variety of patient care issues, including ventilator management, nutrition, pharmacology, psychosocial matters and ethical issues.

Rounds in the MICU

Pre-Rounds: Together with the residents students review any notable overnight events and familiarize themselves with the latest physical findings, laboratory results, culture results, X-rays and medications.

X-ray/Work Rounds: X-ray rounds followed by rounds with the MICU team to review each patient's status, assess all problems and generate a treatment plan for the day.

Sign-off afternoon rounds: Afternoon rounds are needed in critically ill patients to follow up on the morning plan and to review the events of the day. Potential problems that could occur overnight should be anticipated and discussed. During these rounds, the senior resident on-duty will meet with the MICU residents and students to briefly review the status and overnight plans for the patients on the MICU service.
Case Presentations on Work Rounds

1. For new patients, standard case presentation: Pertinent history, physical examination, labs, electrocardiograms (EKGs), X-rays, special tests, etc.

2. For patients already in the MICU, review of the last 24 hours: Be aware of any changes in examination and be familiar with vital signs, intake and output, hemodynamic data, recent lab results, recent microbiology results, EKG, radiological studies and all of a patient's medications. In the MICU, details are important.

3. Discussion should be problem-oriented. Common problems encountered in the MICU include shock, sepsis, pneumonia, acute respiratory distress syndrome (ARDS), decompensated chronic obstructive pulmonary disease and respiratory failure, congestive heart failure or pulmonary edema, renal failure, gastrointestinal bleeding, thrombocytopenia, drug overdose and agitation/anxiety. Assessment and plan should be organized problem by problem.

4. Important issues for all MICU patients include:
   a. Invasive monitors (dates of insertion and number of days):
      i. Endotracheal tube
      ii. Nasogastric (NG) tube
      iii. Arterial line
      iv. Central venous catheter
      v. Pulmonary artery (PA) catheter
      vi. Foley catheter
   b. Nutrition
   c. Deep-vein thrombosis (DVT) prophylaxis
   d. PUD prophylaxis

Principle Educational Goals Based on the ACGME General Competencies

Listed below are the principle educational goals of the Medical Intensive Care curriculum integrated with the six ACGME competencies:

Patient Care:

Students are expected to
- Become familiar with different modes of mechanical ventilation in patients with respiratory failure. Understand the appropriate use and misuse of these modes.
- Interpret the waveforms and quantitative information derived from pulmonary artery catheterization
- Refine ability to interpret chest X-rays and EKGs

Medical Knowledge:

Students are expected to understand
- Left ventricular mechanics
- Control of cardiac output by the peripheral vessels
- Basic lung mechanics, particularly with respect to normal states, COPD, and restrictive lung diseases
- Acid-base physiology
- The differential diagnosis of, diagnostic approach to, and treatment of shock states, respiratory failure, acid base disorders and acute renal failure
- The manifestations of Multi-Organ System Failure
Practice-Based Learning and Improvement:

Students are expected to
- Apply the evolving clinical literature to improve patient care practices,
- Identify areas for improvement and implement strategies to enhance knowledge, judgment, skills, attitudes and processes of care
- Analyze and evaluate practice experiences and implement strategies to continually improve the quality of their clinical practice
- Develop and maintain a willingness to learn from failures and use failures to improve the system or processes of care

Interpersonal and Communication Skills:

Students are expected to
- Develop interpersonal interactions and communication skills that enable them to establish and maintain professional relationships with patients, families, and other members of health care teams, and
- Interact with consultants and other physicians in a respectful, appropriate manner
- Maintain comprehensive, timely, and legible medical records

Professionalism:

Students are expected to
- Develop the learning skills necessary for a lifelong career through the combination of the application of the basic sciences in the critical care domain and the critical reading and thinking skills emphasized on rounds through the rotation.
- Demonstrate respect, compassion, integrity, and kindness in relationships with patients, families, and colleagues.
- Demonstrate sensitivity and responsiveness to gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behaviors and disabilities
- Understand the modern incarnation of both patient confidentiality and informed consent.
- Develop the ability to formulate constructive feedback in response to problems encountered in the workplace.

Systems-Based Practice:

Students are expected to
- Appreciate how very different organizational cultures and structures can successfully provide high quality critical care. We anticipate that this will arise as a consequence of their ability to compare and contrast the experiences they have in other ICUs and their ward rotations.
- Develop their ability to utilize the entire system at their disposal to produce good outcomes for their patients.
- Understand the limitations and opportunities inherent in the ICU setting
- Collaborate with other members of the health care team (especially our nurses, nutritionists and respiratory therapists) to assist patients and their families in dealing effectively with the health care system and to improve systematic processes of care
Medical Record Documentation

Students will have the opportunity to write full admission notes, daily progress notes, procedure notes and physician orders, and completing discharge/death summaries. All entries made by students must be immediately countersigned by one of the MICU residents or the MICU attending. The progress note should describe significant events of the previous 24 hours, significant symptoms, significant signs and relevant data. The note should delineate the MICU team’s assessment and plans for each of the patient’s problems.

Procedures in the MICU

Patients in the MICU often need mechanical ventilation and invasive monitoring. Students should have opportunity to learn and perform, under the supervision of the residents or attending, procedures commonly needed in the ICU setting, including arterial blood sampling, central venous cannulation, airway management and endotracheal intubation. Proper technique for these procedures will be taught at the bedside.
Expected knowledge and competencies

- Interpret arterial blood gas and simple acid base disorders
- Interpret chest radiograph (proper identification of tubes/lines)
- Define shock states (distributive, obstructive, hypovolemic, cardiogenic)
- Demonstrate consistent practice in infection control (hand washing)
- Identify indications for central venous access and invasive hemodynamic monitoring
- Identify properly the pulmonary artery catheter wave forms
- Demonstrate sterile technique with invasive procedures
- Cite potential complications of invasive access
- Maintain an accurate procedure log
- Demonstrate safe and proper placement of feeding tube
- Demonstrate sensitivity in informing family of care plan
- Demonstrate courtesy in interaction and recognize the importance of all medical staff—nursing, physical therapy, pharmacy, respiratory therapy
- Demonstrate legible and complete documentation in all aspects of the patient medical record
- Identify indications for intubation
- Identify anatomic landmarks for intubation
- Cite extubation criteria
- Identify pneumothorax in the mechanically ventilated patient by change in respiratory parameters and other clinical changes on the mechanical ventilator and by chest radiograph
- Participate in CODE resuscitation
- Demonstrate knowledge of and initial management of the following disease states: sepsis/septic shock, GI hemorrhage, diabetic ketoacidosis, hypoxemic and hypercapnic respiratory failure, myocardial infarction, pulmonary embolus, multilobar pneumonia, pancreatitis, multi-system organ failure, initial triage and differentiation of various shock states (treatment of hypovolemic shock, cardiogenic shock, obstructive shock), cardiac arrhythmias/valvular disease, cardiac tamponade and meningitis
- Identify various drug overdose syndromes and associated anecdotal treatments

Learning environment and evaluation methods:

  Resident work rounds
  Attending rounds (Teaching)
  Attending rounds (Work)
  Directly observed procedures

Didactic Material

References will be provided in the “MICU Jump-drive” in order for the students to download to their personal computers all the management and practice guidelines from the major pertinent organizations. A hard copy of this material is also available in the MICU library inside the nursing supervisor’s office.
MIMED-68 VAH  NEUROLOGY

Prerequisite: Have completed third year in Medicine

The student works on patients with neurological diseases, under direct supervision by Neurology resident and Staff Neurologist in the only Neurology Ward in the island. He/she will have the opportunity to study basic concepts about Neurophysiology, Neuropathology and Neuroradiology. The students are exposed specially to patients with Cerebrovascular, Dementia, Movement Disorder, Epilepsy, Neuromuscular and Sleep Disorder Conditions. Emphasis is given to diagnosis, acute management and treatment modalities.

The Neurology Staff consists of 1 full time Board Certified and one part time neurologist, involved in research of cerebro-vascular diseases, sleep disorder, epilepsy and migraine. The Neurophysiology Laboratory is in charge of a Neurologist, certified by the American Board of Clinical Neurophysiology. We are involved in studies on EEG, evoked potentials and polysomnography. The Neurology Team participates in activities with the Radiology Staff where the student is exposed to CT Scan, MRI, MR - angiography and digital subtraction angiography studies. Also, we have an active interaction with Medicine, Rehabilitation Medicine, Psychiatry and Psychology Services.

Person in Charge : Ana Vidal, M.D.
Dates Offered : Academic Year
Course Duration : 4 weeks(160 hours)
Enrollment per Session: 1 student
Meeting Place : Neurology Section, Outpatient Additional Building (OPA)
Night Duties : No
Evaluation : The student will be evaluated on the basis of knowledge, skills, attitudes development during the course, oral examination.

MIMED-92 VAH  CORONARY CARE UNIT

Prerequisite: Have completed third year in Medicine.

The student will work on patients with coronary heart diseases and will learn from the different clinical variations that they present. He/she will learn to manage patients without complications as well as the most frequent emergencies and complications. The student will learn the fundamental of ECG interpretation in acute coronary patients. He/she will attend the teaching activities held at the Cardiovascular Section. The student will be exposed to state of the art equipment and cardiovascular diagnostic techniques, such as: continuous ECG monitoring, modules for automatic BP measurements, hemodynamic monitoring with cardiac output determinations, pulse oximetry and transcutaneous cardiac pacing. Bedside 2D Echo studies are performed as clinically indicated.

Person in Charge : José Escabí, M.D. Luis Rodríguez Ospina, M.D
Dates Offered : Academic Year
Course Duration : 4 weeks
Enrollment per Session: 1 student
Meeting Place : Coronary Care Unit Veterans Administration Hospital
Evaluation : Based on daily performance
MIMED-159 VAH CLINICAL CLERKSHIP IN MEDICINE

Prerequisite: Have completed third year in Medicine
*Dress Code: White Coat and Tie for Male Students

The student will work as part of the clinical team assigned to General Internal Medicine Wards. Under direct supervision, he or she will perform comprehensive medical histories, complete physical exams as well as participate in the clinical decision making processes regarding the management of the assigned patients. The student will perform certain diagnostic and therapeutic procedures. Also, the student will attend all the daily educational activities of the Department of Medicine.

Person in Charge : José J. Gutierrez Nuñez, M.D.
Alternate : Francis Baco-Viera, M.D.
Dates Offered : Academic Year
Course Duration : 4 weeks
Enrollment per Session : 5 students
Meeting Place : Morning Reports Auditorium 2nd Floor Veterans Administration Hospital 7:00 AM
Night Duties : Yes, Two during the rotation
Evaluation : The students will be evaluated by the Faculty member on the basis of knowledge, skills and attitudes developed during the course.

MIMED-160 VAH NON INVASIVE CARDIOVASCULAR PROCEDURES

Prerequisite: Have completed third year Internal Medicine Course.

The purpose of this course is to familiarize the students with the non-invasive techniques used in the evaluation of cardiovascular disease. The student will observe the performance on non-invasive tests and participate in the analysis and interpretation of such tests. These include:

1. Echocardiographic studies including 2D, M-mode, Color Flow Doppler, Contrast Studies: Transesophageal Echocardiography: Stress Echo, Dobutamine Echo with state of the art equipment.
2. Exercise testing with standard Treadmill, GXT-Thallium/Persantine/Thallium and Dobutamine-MUGA/Stress Echo.
3. Basic electrocardiography, HI RES EGG and Holler EGG Studies.

The students will attend all the teaching activities of the Cardiology Section.

Person in Charge : Luis Rodríguez-Ospina, M.D.
Alternate : José Escabí, M.D
Dates Offered : Academic Year
Course Duration : 4 weeks
Enrollment per Session : 1 student
Meeting Place : Cardiology Veterans Administration Hospital 7:30 AM
Night Duties : No
Evaluation : Based on daily performance
MIMED-161 VAH INFECTIOUS DISEASES AND PARASITOLOGY

Prerequisite: Have completed third year Internal Medicine Course.

The student is part of the Infectious Diseases Consult Team, composed of a resident, a Fellow and a Staff I.D. Faculty member. The student serves as a consultant with a minimum of four consults per week, having the responsibility for answering the consult and writing recommendations, always under a one-to-one supervision of the I.D. Fellow. The student presents the case therefore he/she should read about the problem and write the progress notes on his/her patients. The student is exposed to antibiotic use, their indications, contraindications, combinations and/or the diagnosis, management and follow-up of bacterial, mycotic and viral diseases, including HIV and AIDS. The student will become familiar with gram stains and their interpretation and have available the audiovisual library of the ID Training Program for in-house review. The student will participate in didactic activities including ID Clinics on Mondays and Tuesdays, ID Journal Club and VA/UDH Rounds on Thursdays, Case Discussion and ID Conferences on Fridays and monthly Pediatric ID Case Discussion.

Hospital : VA Caribbean Healthcare System
Person in Charge : Glenda M. González, MD
Alternate : Sonia Saavedra, MD, PhD
Course Duration : 4 weeks
Enrollment : 1 student per 4-week period
Dates offered : Throughout the year, space permitting
Meeting Place : 8th Floor, Ward 8A, Office A804a
Night Duties : None
Evaluation : Based on performance, evidence of reading, presentations, write-ups, follow-ups, interest and attendance. Preparation of a single topic review in written form of a topic of interest for the student. Topic to be selected at the beginning of the rotation and presented to the attending in charge of the rotation. Report is due the last week of the rotation.

MIMED-162 VAH DIAGNOSIS AND MANAGEMENT OF PULMONARY DISEASES

Prerequisite: Have completed third year in Medicine

For four weeks, the students will be part of the pulmonary disease consultation service. They will be part of the evaluation of patients with a myriad of respiratory diseases in the inpatient and outpatients setting. The weekly ambulatory clinic, medical and surgical wards, medical surgical and respiratory intensive care units will be the areas where patient exposure will take place. First hand experience in performance and interpretation of pulmonary function testing, pulmonary bronchoscopy, pleural biopsy will be obtained by the student. A seminar on any respiratory related theme is required at the end of the rotation and attendance to the weekly pulmonary diseases conference are also required.

Person in Charge : William Rodríguez, M.D.
Dates Offered : Academic Year
Course Duration : 4 weeks
Enrollment per Session : 2 students
Meeting Place : Pulmonary Section-OPA Veterans Administration Hospital 8:00 AM
Night Duties : No
Evaluation : Daily rounds and evaluated by sponsors on the basis of knowledge, skills and attitudes developed during the course
MIMED-164 VAH  GENERAL INTENSIVE CARE
Prerequisite: Have completed third level Internal Medicine Course.

The student will perform clinical histories and physical examinations in critically ill patients. He or she will participate in the diagnosis and treatment of such conditions that merit intensive care. He or she will be able to perform procedures under supervision, such as central vein catheterization, management of pulmonary venous catheters, management of mechanical ventilators, interpretation of electrocardiograms, pulse oxymetry, etc. The student will interact with consulting support services such as Radiology, Cardiology, Pulmonary, and Nephrology subspecialists, among others. They will attend the teaching activities of the Intensive Care Unit.

Person in Charge : Jesús Casal, M.D.
Dates Offered : Academic Year
Course Duration : 4 weeks
Enrollment per Session : 1 student(by arrangement)
Meeting Place : Medical Intensive Care Unit, 1st floor “Southbed Tower” Hospital 7:00 AM
Night Duties : 2 during the month
Evaluation : The student will be evaluated on the basis of knowledge, skills and attitudes developed during the course.

MIMED-165 VAH  RENAL METABOLIC COURSE
Prerequisite: Have completed third year Internal Medicine Course

The student will attend rounds in the renal ward and will follow patients in the renal consult service at the VA Hospital (including cases in the medical/surgical intensive care units). The student will be exposed to a myriad of electrolyte/acid-base disturbances and acute/chronic renal failure patients. The student will also attend the weekly renal and kidney transplant clinic (1-2 case per session) and the journal club and conferences.

Person in Charge : Héctor Cordova, M.D.
Dates Offered : By arrangement
Course Duration : 4 weeks
Enrollment per Session : 2 students
Meeting Place : Renal Section Office #609 Administration Hospital 8:00 AM
Night Duties : No
Evaluation : The overall evaluation will follow the scheme used for medical interns, adapted for students.
MIMED-182 

INTRODUCTION TO CLINICAL RESEARCH

Prerequisites:
1. Fourth year medical students
2. Prior meeting with the mentor to agree on preparatory work required for the elective.

Course Description:

The student will be assigned to the clinical research unit of the Department of Medicine of UCC. The elective will formally last four weeks. It is required that ample time is given prior to beginning the elective for the necessary preparatory work. (A minimum of 2 months in which the student will begin the preparatory work for the elective)

Person in Charge : Robert Hunter-Mellado, MD, FACP
Dates Offered : Year round, by arrangement with mentor
Course Duration : 4 weeks
Enrollment per Session : 1 student per elective period
Meeting Place : Retrovirus Research Center (RRC), UCC
Night Duties : No
Evaluation/Assessment : The student will be evaluated on his/her ability to complete the proposed objectives of the elective
Grading System : Honors, Pass or Fail

Rationale and Justification:

The goal of the elective course is to increase the number of minority physicians who will chose clinical research as an important component in their professional careers. The central focus of this activity will be sensitizing the student to the relevance of clinical research in the practice of medicine and to expose the student to the various skills required for this activity. The student will have formal instruction on issues of research problem formulation, methodology and methods of literature search for purposes of background information. The process of conducting the research project will be supplemented with classroom research seminars, journal clubs, and integration into the research meetings of the Retrovirus Research Center. As part of the experience, the student will receive formal instruction of the ethics of clinical research, requirements for the conduct of research on human being and the nature of the Institutional Review Boards.

The curriculum will be based in a pragmatic approach, where the fellow will construct his/her learning based on the integration between theory and practice. A mentor will be selected by the student to guide him/her through the experience.

Goal:

To provide medical students a first hand experience in the various phases relevant in the process of conducting clinical research.
Objectives:

First Phase  (to be accomplished prior to the formal initiation of the elective)

1. To formulate a research problem in the field of clinical medicine using a hypothesis driven approach.
2. Review scientific literature about the research problem.
3. Formulate the research questions to be answered.
4. Review the content of the conferences on Basic Epidemiology, sample selection and introduction to statistics offered by the mirror image program of the RCMI.
5. (Web Based).

Second Phase  (to be completed during the four week elective)

7. Under the guidance of the mentor, through consultation and frequent meetings:
8. Prepare a draft of the research proposal.
9. Implement the research project.
10. Evaluate the research data.

Third Phase  (to occur after to the 4 week period, but before the end of the semester)

11. Prepare a draft manuscript.

Expectations:

12. In the process of accepting a student to the elective, a full discussion regarding the nature and feasibility of the research interests and the individual.
13. It is expected that the candidate will work with enthusiasm and intensity with the mentor in order to complete the project within the specified period of time.
14. At least one abstract or publication or presentation in a formal meeting will be expected at the end of the academic year.
DEPARTMENT OF PEDIATRICS

MPED-01  GENERAL PEDIATRICS
Prerequisites: Approved Introduction to Pediatrics and General Pediatrics (Clinical Clerkship).

The student will recognize the signs, symptoms and current management of the most common diseases of children, seen in a general pediatrics hospital, and will get acquainted with the importance of the continuity of care in an ambulatory service.

Person in Charge: Attending physician, according to monthly program, HURRA
Dates Offered: Year round
Course Duration: 4 weeks
Enrollment per Session: 1 student
Meeting Place: University Hospital Dr. Ramón Ruiz Arnau, Bayamón
Evaluation: Case presentation, topic discussion

MPED-02  PEDIATRIC INTENSIVE CARE
Pre-requisites: Third Year Rotations

Students will learn to utilize physiologic-based, organ system derived approach to patient problems.
Students are given the responsibility for patient care under the direct supervision of the PICU faculty.
Educational goals will be met through discussions on teaching rounds, didactic presentations on aspects of pediatric critical care medicine, and self-directed study on individual patients. The student is expected to improve skills of obtaining histories, performing physical examinations of all new admissions.

General Educational Objectives:

To develop quick appropriate response to emergencies.
To develop and foster critical thinking pathways with emphasis on the importance of ABC's of resuscitation.
Learn basic mechanical ventilator management and administration of routine respiratory medications.

Person in Charge: Gilberto Puig, M.D.
Dates Offered: Year round
Course Duration: 2-4 weeks
Enrollment per Session: 1 student
Meeting Place: By Arrangement Bayamón, San Jorge Children's Hospital, Santurce
Evaluation:
  - Daily oral presentation: 60%
  - Case presentation: 20%
  - Written exam: 10%
  - Attendance: 10%
MPED-50  PEDIATRIC RHEUMATOLOGY

Pre-requisites:  Third year rotations

Description:

Student elective in pediatric rheumatology is typically one month in length, and has a strong outpatient, team-based clinical care focus, though inpatient management is also important. The trainee will also see patients at San Jorge Children’s Hospital the Puerto Rico Children’s Hospital and the Preceptor’s Office. No more than two students may be on a clinical elective simultaneously. During the elective, primary teaching is done by the attending rheumatology.

General Educational Objectives:

1. Develop skills and habits of a meticulous approach to the pediatric history and physical examination, with a concentration on the musculoskeletal examination.
2. Understand the clinical presentation, pathophysiology, diagnosis and treatment of common pediatric rheumatology disease (i.e., juvenile rheumatoid arthritis, dermatomyositis, scleroderma, Kawasaki’s disease, Lupus and rheumatic diseases.
3. Develop skills of literature review on pertinent topics
4. Understand the significance and limitations of laboratory studies for rheumatic diseases.
5. Demonstrate acumen in developing and evaluating differential diagnoses for children with systemic complaints such as unexplained fever, rash, and arthralgia
6. Review basic texts and literature on the subject and develop a working differential diagnosis

Learning Activities

1. See consults: patients will be assigned to students during the day by the faculty attending.
2. Perform initial history and physical examination.
3. Review basic texts and literature on the subject and develop a working differential diagnosis
4. Perform daily physical exam and write notes on patients assigned.
5. Check results of current laboratory and diagnostic studies on these patients.
6. Participate in the pediatrics’ rheumatology research laboratory
7. Present patient information at daily section rounds.
8. Prepare a talk on rheumatic disease in children for presentation to the faculty and staff

Person in Charge  :  Dra. Ana Quintero
Dates Offered  :  Throughout the year in previous agreement with faculty
Course Duration  :  4 weeks
Enrollment per Session  :  1-2 students
Meeting Place  :  As per previous agreement
Evaluation
  Case presentation:  40%
  Elective Evaluation form:  60%
MPED-93  MEDICAL GENETICS  
Prerequisites: 4th year medical students

Justification:

Medical genetics is one of the most rapidly advancing fields of medicine; molecular genetics is now integral to all aspects of biomedical science.

Every physician who practices in the twenty-first century will require a basic knowledge of the principles of human genetics and their application to a wide variety of clinical problems. Medical genetics is both a basic biomedical science and a clinical specialty. Teaching medical genetics must span the entire undergraduate medical school curriculum and continue into the post graduate years as well.

Medical genetics has achieved a recognized role as a core discipline that deals with human variability and human heredity and at the same time, has developed approaches that allow new insight into many diseases and promise to provide far more in the near future.

Genetics is a diverse subject, concerned with variation and heredity in all living organisms. Human genetics is the science of variation and heredity in human beings, and medical genetics deals with human genetic variation of medical significance.

Medical genetics is undergoing a dramatic metamorphosis due in part to molecular biology. Molecular characterization of the human genetics, its mutations, and the nature of their protein products certainly provide a deeper understanding of diseases.

Course Description:

The course is an 8 weeks rotation in clinical/medical genetics. Rotation will include medical genetics clinics at San Jorge Children’s hospital, rotations at the Clinical Research Center with involvement in clinical research including clinical trials. Topics will be assigned to the student in order to be develop. Pre and Post- clinic discussion of topics including but not limited to the disorders evaluated at clinic that day. Students will also accompany the geneticist to answer consults at pediatric Intensive Care Unit.
The major goal of the Medical/ Clinical Genetics is to prepare medical students to recognize the role of genetic factors in health and disease. This requires knowledge of the molecular structure, function, and transmission of genes and understanding of interactions among genes and between genes and the environment as well as exposure to patient with genetic and metabolic disorders.

General Objective(s) /TOPICS

1. What genes are, how they are organized and controlled, what they do, and how they segregate.
2. The nature of mutations and premutations and how they contribute to human variability and to disease.
3. The patterns of inheritance characteristic of autosomal dominant, autosomal recessive, X-linked dominant, and X-linked recessive traits. To draw and interpret family pedigrees.
4. Factors that affect variable expressivity and incomplete penetrance.
5. The basis of mitochondrial diseases and the expected pattern of inheritance.
6. How genes are organized into chromosomes.
7. The clinical manifestations of common numeric, structural, and mosaic chromosomal anomalies.
8. Clinical approach to polymorphisms, gene linkage analysis and mapping in medicine.
9. The principles of multifactorial inheritance.
10. How to recognized and classify congenital anomalies and the approach to diagnosis.
11. The role of clinical genetics in the pathogenesis of cancer (neoplasm).
12. Molecular and cytogenetic diagnostic techniques and how they are applied to genetic disorders.
13. Puerto Rican genetics: Most frequent genetic and metabolic disorders in Puerto Rican population disorders

Learning Activities:

Shadowing at genetic clinics, shadowing at intra-hospital genetics consults. Participation in research coordination and management aspects at the Clinical Research Center. Topics will be assigned to students and will be expected to develop them including academics literature reviews and state-of-the-art diagnosis and management.

Course Coordinator: Alberto Santiago Cornier, MD, PhD
Course Dates: TBA
Course Duration: 4 and 8 weeks rotations
Enrollment per Session: 1 student
Meeting Location: Clinical Research Center, San Jorge Children’s Hospital
Learning Activities: Daily Rounds, Case discussions
Evaluation: 50% attendance, 20% assigned topics/works, 20% clinical competence, 10% professionalism/ethics
Grading System: 90-100- A, 80-89-B, 75-79-C, 75 and under- Failure

Approved by Curr C SOM
October 17, 2013
MPED-109 SUB-INTERNERSHIP IN PEDIATRICS
Pre-requisites: Third Year

Description:

The pediatric sub-internship is a broadly based experience, which allows students to assume primary responsibility for pediatric patients under the direct supervision of a certified pediatrician. Students will be able to participate on an inpatient pediatrics service team with an advanced degree of independence and responsibility in preparation for their R-1 year.

General Educational Objectives:

- Students will be able to participate on an inpatient pediatrics service team with an advanced degree of independence and responsibility in preparation for their R-1 year.
- Students will be able to perform an initial assessment of patients under consideration for admission to the pediatrics service.
- Students will be able to implement diagnostic and therapeutic plans taking into account evidence-based information and patient preferences.
- Student will develop interviewing and physical examination skills
- Student will apply the pathophysiology to the most common pediatric problems
- Formulate diagnostic and treatment plans
- Perform commonly used procedures under supervision
- Understand the physical and psychosocial growth and development of the pediatric patient
- Understanding the influence of family, community and society on the pediatric patient during health and disease
- Understanding the importance of and strategies for health promotion and disease prevention

Course Coordinator : Sandra Rodríguez, MD or designated Pediatrician
Course Dates : All year except June, July and December
Course Duration : 2-4 weeks
Enrollment per Session : 2 students
Meeting Location : PR Children’s Hospital
Learning Activities : Daily Rounds, Case discussions
Evaluation : Elective Evaluation Form
DEPARTMENT OF PSYCHIATRY

MPSY-01 VAH   PSYCHIATRIC JUNIOR INTERNSHIP

Prerequisite: Have completed third level Psychiatric Course.

The student will participate in the complete work up of patient and family. He/she will be assigned to current activities and seminars offered to psychiatric residents while in this rotation.

Person in Charge : Ana I. Torres, M.D.
Alternate        : Ms. Marta M. Ríos
Dates Offered   : Throughout the Year
Course Duration : 4 weeks (160 hours)
Enrollment per Session : 1 student
Meeting Place   : Various according to selection of Veterans Administration Hospital
Night Duties     : At least on call / call per week
Evaluation       : The student will be evaluated in knowledge, skills, and attitudes through their clinical performance. Also written exam or its equivalent.

MPSY-15    PSYCHIATRY ELECTIVE IN ADULT / ADOLESCENT

Prerequisites: Third year

The Elective will be for fourth year (MS-IV) medical students with a duration of 4 weeks. The student should have completed his/her Psychiatric Clerkship without any deficiencies. The student is required to participate actively in all the processes of patient management, including Evaluation, Diagnosis, Designing Treatment Plan all interdisciplinary team meetings as well as family therapy and group therapy.

Our objectives are that the student will learn the basics of Evaluation, Diagnosis and Treatment in the Psychiatric Hospital. The Elective is intended to familiarize the student with basic topics of either Adolescents or Adult Psychiatry through this direct experience.

Person in Charge : Dra. Arlene Martínez Nieto
Dates Offered   : During Academic Year
Course Duration : 4 weeks
Enrollment per Session : 1 student
Meeting Place   : Hospital Panamericano
Evaluation      : The attending psychiatrist of the assigned unit will be in charge of the evaluation of the student, from his performance, including clinical skills, knowledge, attitudes for learning, responsibilities, assistance. The student will answer an oral examination of general psychiatry prepared and administered by Dra. Arlene Martinez Nieto (Who to contact: Administration Offices, First Hospital Panamericano). Tel. (787-739-5555 Ext. 440)
MPSY-27 VAH  PSYCHIATRIC EMERGENCIES
Prerequisite: Have completed third year Medicine

This course offers the student the opportunity to evaluate patients suffering a psychiatric emergency, as well as to initiate prompt and intermediate therapies.

Person in Charge : Ana Torres, M.D.
Alternate        : Ms. Marta M. Ríos
Dates Offered   : Throughout the Year
Course Duration : 2-4 weeks
Enrollment per Session : 1 student
Meeting Place  : Various according to selection of Veterans Administration Hospital 7:00 A.M
Night Duties    : One call per week
Evaluation      : The student will be evaluated in knowledge, skills and attitudes through their clinical performance. Also written exam or its equivalent

MPSY-58 VAH  ALCOHOL DEPENDENCE
Prerequisite: Have completed third level Psychiatry.

This course is designed to familiarize the student with the etiology, diagnosis and treatment of drug dependency.

Person in Charge : Ana I. Torres, M.D.
Dates Offered   : Throughout the Year
Course Duration : 2 weeks
Enrollment per Session : 1 student
Meeting Place  : Alcohol Dependence Treatment Program, one morning a week in Department of Psychiatry Veterans Administration Hospital 7:30 AM – 4:00 PM
Night Duties    : No
Evaluation      : Pre and post test, mid-term, self evaluation.

MPSY-59-VAH  INTRODUCTION TO DRUG DEPENDENCE
Prerequisite: Have completed third level Psychiatry.

The student will be exposed to the technique of evaluating and managing patients with dependency and addiction to substances.

Person in Charge : Ana I. Torres, M.D.
Dates Offered   : By arrangement
Course Duration : 2 to 4 weeks
Enrollment per Session : 1 student
Meeting Place  : San Juan Veterans Administration Hospital 8:00 AM
Night Duties    : 2 to 4 weeks
Evaluation      : Classroom interest, attendance and participation 50%.
DEPARTMENT OF SURGERY

MSURG-01 HURRA  GENERAL SURGERY
Prerequisites: General Surgery Course

Students will be involved in a hands on approach to the practice of surgery. The clerk will be responsible for the patient history and physical examination, clinical follow ups, emergency room consultations, operating room and ward management of patients in a direct supervised environment. The clerk will be assigned to attending surgeons. He/she will have access to his/her private and no-private patients. He/she will discuss selected cases with the Universidad Central del Caribe Chief.

Person in Charge : Ricardo Rosario, M. D.
Dates Offered : Year round
Course Duration : 4 weeks
Enrollment per Session : 1 student
Meeting Place : Department of Surgery, University Hospital
Dr. Ramón Ruiz Arnau
Evaluation : Clinical Clerkship Evaluation Form

MSURG-02  ORTHOPEDIC SURGERY
Prequisites: Third Year of Medicine

The main emphasis of the 2-4 weeks elective is to provide the student with a sound basis in the approach to physical examination. These skills are best acquired in the orthopedic outpatient office where the student would spend the majority of his or her rotation. During the rotation the student would be in a position to work as a junior intern. The student would also accompany the faculty to the Office and be in attendance during the initial history, physical exam, and review of radiographs. The student would have the opportunity to assist in the operating room. A variety of weekly rounds are available, in which the student should be involved along with the others members of the multidisciplinary team.

General Educational Objectives:

1. To learn the basic regarding fracture treatment and be able to accurately assess musculoskeletal injuries in adults.
2. To recognize orthopedic problems that may require surgery, and be able to prepare the patient for referral.
3. To develop sufficient proficiency in cast application and removal (short arm and short leg casts).
4. To participate in orthopedic clinics, rounds, and specialty clinics, and to attend the orthopedic clinics.
5. Develop or participate a small clinical research projects.
6. Provide teacher training for future faculty members
7. Improve self-discipline and a sense of professionalism
Learning Activities:

<table>
<thead>
<tr>
<th>Person in Charge</th>
<th>Pedro Tort, MD</th>
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</thead>
<tbody>
<tr>
<td>Dates Offered</td>
<td>Throughout the Academic Year (Except July)</td>
</tr>
<tr>
<td>Course Duration</td>
<td>2-4 weeks</td>
</tr>
<tr>
<td>Enrollment per Session</td>
<td>2 students</td>
</tr>
<tr>
<td>Meeting Place</td>
<td>Preceptor Office</td>
</tr>
</tbody>
</table>
| Evaluation             | Standard Evaluation Form 75%  
                          Case presentation/mini-lecture 25% |

**MSURG-85 PEDIATRICS PLASTIC SURGERY ELECTIVE**

**Prerequisites**: Third Year Clerkship

The objective of the fourth year elective clinical clerkship in Plastic Surgery will be to provide the student an opportunity to experience the field of Plastic Surgery in a brief two week introductory rotation. The course format offers the individual student assignment to experience operating room surgery, office, planning, and clinic outpatient surgery as the practice of those individuals unfold on a daily basis. Additionally the student will participate in a weekly Plastic Surgery teaching conference and a weekly divisional teaching rounds at which time the student will see the inpatients of the Plastic Surgery service. Case material will vary from week to week. Daily learning activities described below. Student should report to the faculty in charge on the first day.

<table>
<thead>
<tr>
<th>Person in Charge</th>
<th>Robert Lee Walton Jr., M.D.</th>
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</thead>
<tbody>
<tr>
<td>Dates Offered</td>
<td>Throughout the year (By arrangement)</td>
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<tr>
<td>Course Duration</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Enrollment per Session</td>
<td>1-2 student</td>
</tr>
<tr>
<td>Meeting Place</td>
<td>San Jorge Children’s Hospital</td>
</tr>
<tr>
<td>Evaluation</td>
<td>The student and the preceptor will both submit evaluations of the rotation and review of the evaluation will be available. The student will be expected to be regular in the attendance and participation in the activities of the Plastic Surgery Elective during course of the rotation assignment. Clinical Evaluation form. Practical examination including interpretation of clinical findings, and laboratory studies. Case discussions. Attendance</td>
</tr>
</tbody>
</table>

**Goal (s):**

The faculty will strive to:

1. Present in-depth experience of the office and operating suite and in-hospital components of a broadly based practice of plastic and reconstructive surgery of the hand, maxillofacial surgery, and trauma surgery, including burns.
2. Present a direct experience in a close association with the senior staff in all of the above areas.
3. Provide the student with the opportunity for supervised development of operating skills, both in the operating room as well as in the emergency room.
General Objective (s):

At the end of the rotation, the student will be able to:

1. Obtain a broad exposure to a wide range of surgical pathology, both soft tissue and cutaneous as well as reconstructive problems, both benign and malignant.
2. Exposure cleft palate surgery, surgery for cleft lip and palate, and an opportunity to experience the entire range of the plastic surgery.
3. Receive specific personal instruction in the development of suturing techniques as well as increased understanding of the healing surgical wound and the factors involved in successful wound healing.
4. Receive instruction in writing postoperative orders under the tutelage of the senior staff and house staff.
5. Gain experience with the management of burns and skin grafting of full thickness losses, and late reconstruction after healing.

Learning Activities:

1. Accompany the staff physicians in their office-based practice to gain the insights applied in patient selection and to gain an in-depth experience of the doctor-patient relationship prior to surgery.
2. The opportunity to understand what surgical alternatives are discussed with the patient as well as the depth of understanding that is developed in the office on the part of the patient is considered.
3. The student will have the opportunity to scrub on all surgical cases and gain direct operative experience and participation. In this vein the student will, many times, be first assistant on major plastic surgical cases.
4. Participate in morning and evening rounds of hospitalized patients.
5. Work as an acting intern in clinic and emergency room by performing physical assessment, laboratory and radiographic analysis, and assisting in patient management.
6. Perform initial work-up of patients and recommend diagnostic studies and therapeutic plan.
7. Assist in surgical and clinical procedures.
8. Observe and demonstrate accurate performance.

Learning Resources:

2. Oral and Maxillofacial Trauma, by Fonseca and Walker
3. Management of Infections of the Oral and Maxillofacial Region, by Topanzian and Goldberg
RESEARCH IN OPHTHALMOLOGY & GENETIC EYE DISEASE

Prerequisites: Basic Genetics (College Level)
Competencies: Basic Genetics and Ophthalmology

Justification:

There is a need for clinical studies and research in genetic eye diseases in ophthalmology that lead to publications and papers in Puerto Rico.

Description:

Students will spend a minimum 4 to 6 weeks researching genetic eye diseases. All information gathered must be evidence-based medicine including at least two publications from the current year. Based on information gathered students must write three papers for evaluation: 1) A Case Report. 2) A Case Series, and 3) A Prospective Study.

Goals:

Clinical Research, Learn how to write papers (Case Report, Case Series, Retrospective and Prospective study, and clinical studies), and publish papers in peer reviewed journals.

General Educational Objectives:

Learn the appropriate way to research and conduct clinical studies, while at the same time learning about genetic eye diseases and their impact on our population.

Specific Objectives:

1. Learn how to do evidence-based research
2. Learn to write a Case Presentation
3. Learn to write a Case Series
4. Learn how to do a Prospective Study

Learning Activities:

- Weekly discussion of selected genetic eye disease including but not limited to: etiology and pathogenesis, statistics, evolution, complications, comorbidities, treatment options, and recent studies.
- Online research
- Clinical observation
- Written Papers (Case Report and Case Series)

Person in Charge: Natalio J. Izquierdo, M.D.
njuan@msn.com

Dates Offered: August Through June
Course Duration: 4-8 weeks minimum
Enrollment per Session: 1 student
Meeting Place: 369 De Diego, Suite 310 San Juan, PR 00922 / Internet Meeting

Evaluation Assessment: Case Report
Case Series
Prospective Study

Grading System: Honor, Pass or Fail
75% Research Project 25% Case Discussion

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MSURG- 197  FUNDAMENTALS OF OCULOPASTICS AND OCULAR ONCOLOGY

Pre-Requisites: Having successfully completed a Clinical Ophthalmology Elective

Description:

Oculoplastics is an important Ophthalmic Subspecialty, having recognized fellowships since 1969. Knowledge of Oculoplastics surgery is essential for the proper practice of Ophthalmology. This course will provide in depth clinical and surgical exposure in the fields of Oculoplastic Surgery and Ocular Oncology. The Medical Student will be educated on how to perform a clinical evaluation in these patients and will develop understanding of the clinicopathological basis of the diseases affecting them. In order to understand and appreciate the material been taught, the student needs a basic understanding of facial anatomy and of Ophthalmology.

General Education Objectives:

The Goal of this clerkship is to expose Medical Students to the fields of Oculoplastic Surgery and Ocular Oncology.

Specific Objectives: 1. V. The specific objectives are:

1. To understand anatomy of the head and periorcular region.
2. To understand and recognize simple and complex diseases that can occur in the eyelids, orbit, and lacrimal systems.
3. To observe the clinical and surgical care of patients undergoing Oculoplastic Surgery and Ocular Oncology.
4. To participate in the clinical and surgical care of patients undergoing Oculoplastic Surgery and Ocular Oncology.

VII. Learning Activities:

Students will be evaluated on a daily basis. The evaluation will take into consideration the promptness, attitude, and disposition of the Medical Student. Their behavior in the office will be observed and the interaction between the Student and the Ancillary Staff will be noted. The student will be expected to demonstrate the acquired knowledge through verbal quizzes and case discussions.

Person in Charge : Noel Pérez Soto, MD
Dates Offered : By arrangement throughout academic year except July and December
Course Duration : 4 weeks
Enrollment per Session : 1 student
Meeting Place : Office of Noel Perez, MD. 150 Ave de Diego Suite 701, San Juan Health Centre, Santurce PR 00907
Evaluation Assessment : Case Report Case Series Prospective Study
Grading System : Pass or Fail

Approved by Curr C SOM
October 17, 2013
**MSURG-125VAH  CLINICAL OPHTHALMOLOGY**

**Pre-requisite:** Have completed and approved third year Internal Medicine and Pediatrics.

This course consists of clinical demonstrations on the various methods used to examine the eye and the presentation, at the outpatient clinics and hospital, of patients suffering from eye diseases. The student will be able to observe procedures and surgical techniques used at Operating Rooms and examine patients at Outpatient Department Clinics under faculty supervision.

**Person in Charge:** Carmen Henn, MD
**Dates Offered:** Academic Year
**Course Duration:** 4 weeks
**Enrollment per Session:** 2 student
**Meeting Place:** Veteran’s Administration - Dr. Henn’s Office
  7:00 AM
**Night Duties:** No

**Grading System:** Daily work, skills and attitudes

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**MSURG- 204 NEUROLOGICAL SURGERY ACTIVE INTERNSHIP**

**Pre-Requisites:** Successful completion of 3rd year medical school, surgical clerkship, and a genuine interest in neurosurgery.

**Description:**

The Surgical Subspecialty clerkship is a four-week elective that is divided on weekly rotations on various neurosurgical fields. These will include weekly periods on vascular and endovascular neurosurgery, pediatric neurosurgery, oncologic neurosurgery, general neurosurgery and the neurological intensive care unit at the HIMA Hospital in Caguas. The student will have the opportunity to attend clinics, perform morning rounds and observe surgeries in the operating room. The student will be in direct supervision of the attending neurological surgeons Dr. Sosa, Dr. Toledo, Dr. Almodóvar and neurointensivist Dr. Rodríguez-Vega.

**General Education Objectives:**

1. To introduce the student to the principles and practice of neurosurgery. This course will provide an in-depth introduction to the surgical treatment of disorders of the nervous system.
2. Interact with patients and surgical team members in a courteous and professional manner.
3. Assess patients’ surgical risk for the types of procedures in the specialty.
4. Interpret imaging and other diagnostic studies in the specialty and use them to suggest treatment for common diagnoses.
5. Describe in general terms the technical approach to common procedures in the subspecialty.
6. Provide appropriate postoperative assessment, and plans for follow up after surgery.

**Specific Objectives:**

1. To allow the student to experience the work load and responsibilities that a 1st year neurosurgical resident will have.
2. Students will be expected to participate in the daily activities of the service including work rounds, morning report and other conferences.
3. Perform daily patient evaluations in the neurosurgery clinic and describe significant findings with the attending.

4. The student will have the opportunity to observe in the operating room and in circumstances, serve as assistants to the surgeon.

5. The student will be able to discuss with the attending physician a spectrum of at least three possible differential diagnoses for each patient.

6. Daily patient history, neurological physical examinations and notes are mandatory and will be observed by the attending physician. It is expected that the student improves skill level as the elective progresses.

7. Evaluate patients at the Neurosurgical Intensive Care Unit and discuss with the attending physicians plan of treatment.

8. Present 2 formal case presentations in a group discussion by the end of the rotation.

Person in Charge: Iván Sosa MD
Dates Offered: Course offered most of the year. A previous approval by the HIMA Neurosurgery department is required.
Course Duration: 4 weeks
Enrollment per Session: 1 student
Meeting Place: HIMA Caguas Hospital Neurosurgery Division
Evaluation Assessment: There will be assigned reading that the student must complete during the rotation. Oral quizzes performed by the medical staff. The student will be graded on their participation, willingness to take responsibility as a member of the surgical team, and professional appearance and manner.
Grading System: Pass or Fail

Approved by Curr C SOM
September 4, 2014
DEPARTMENT OF EMERGENCY MEDICINE

MEMED-03  EMERGENCY MEDICINE
Pre-requisites:  Third year Clerkships, CPR

The objective of this course is to expose students to primary care in the emergency medicine field with emphasis on acute patient management issues such as differential diagnosis, laboratory and radiology testing in an acute care setting. This course will provide the students with an introduction to the field of Emergency Medicine, Emergency Medical Services (EMS), and the approach to the acutely ill or injured adult and pediatric patients.

General Educational Objectives:

1. Recognize and treat life threatening emergencies
2. Manage airway
3. Interpret EKG, CRX, ABG
4. Wound Management
5. Learn the art of treating patients with respect during their most vulnerable time, as well as caring for their medical conditions. General review of ACLS, ATLS and PALS
6. Learn to integrate knowledge and feel the sense of accomplishment that accompanies arriving at a provisional diagnosis and instituting a treatment plan.
7. Learn rapid problem solving skills, rapid decision making skills, and gain common procedural experience

Learning Activities:  Patient rounds, Case discussions, Oral presentations

Person in Charge : Dr. Jorge Gago
Dates Offered : Thru the year by previous agreement
Course Duration : 4 weeks
Enrollment per Session : 1-2 students
Meeting Place : As per previous agreement at Ramon Ruiz Arnau University Hospital
Evaluation
Attendance: 60%
Rounds and Case discussion: 30%
Quiz: 10%

MEMED-09  EMERGENCY MEDICINE ELECTIVE
Prerequisites:  Third Year Clerkships

Course Overview:
Welcome to your rotation in Emergency Medicine. The faculty in the Department of Emergency Medicine is excited about the opportunity to provide you with a valuable clinical experience in which you will be evaluating undifferentiated patients that will involve some concepts from virtually all-medical specialties. The relatively young specialty of Emergency Medicine is rapidly growing, as is the need and demand for physicians trained in Emergency Medicine. We expect this rotation to both reinforce concepts you have already learned as well as introduce some new skills.

Description:
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Students in the Emergency Medicine elective will be given primary care responsibility for Emergency Department patients under the supervision of Emergency Department physicians. Activities will include patient workups, written documentation of patient evaluations on Emergency Department charts, communication with faculty regarding patient care, and performance of a variety of procedures. Opportunity for transporting and caring for patient in the pre-hospital setting will be available. There will be one formal conference each week. The student will deliver a 15-20 minute oral presentation on any appropriate emergency medicine topic at one of these conferences.

**Person in Charge**: Ninci Llanos-Figueroa, M.D.

**Dates Offered**: Academic Year (By arrangement)

**Course Duration**: 2-4 weeks

**Enrollment per Session**: 1-2 students

**Meeting Place**: HIMÁ Hospital Caguas

**Evaluation**

The student will be evaluated by the staff and the department chief. The final grade will be based on the participants’ clinical performance.

- Participation in case discussions: 35%
- Case discussions: 40%
- Attendance: 15%
- Daily Rounds: 10%

**General Educational Objectives:**

1. The student will be able to identify rapidly and accurately the problem that brings the patient to the Emergency Department.
2. The student will identify the patient requiring immediate intervention and will participate in the immediate management of the patient.
3. The student will arrange for continuity of care following the initial acute phase of patient management.
PHYSICAL MEDICINE AND REHABILITATION DEPARTMENT

MPMR-24 VAH INTRODUCTION TO CLINICAL PHYSIATRY

Prerequisite: Have completed third level Internal Medicine, Pediatric, Surgery and Radiology courses.

Course Description:

The student will be exposed to the clinical aspects of Physical/Rehabilitation Medicine. He/she will be able to take medical histories, perform physical examinations to patients and under supervision by a faculty member or a resident, develop differential diagnosis and treatment plans for musculoskeletal, rheumatological and neurological conditions. In addition, he/she will be exposed to Electrodiagnostic Principles, Sports Medicine, Exercise Physiology, Cardiac Rehabilitation, Amputee Rehabilitation, Pain Rehabilitation including exposure to Interventional Pain, and TBI/Stroke Rehabilitation. The student will participate in all academic activities held by the Section.

Person in Charge: Ana Cintrón, M.D.
Contact Person: Sra. Loida Concepcion Nieves
Dates Offered: Throughout the Year
Course Duration: 2-4 weeks
Enrollment per Session: To be Coordinated
Meeting Place: Rehabilitation Medicine Services #C-121 Veterans Administration Hospital 8:00 AM
Night Duties: No
Evaluation: Oral presentation will be required. Evaluation will be done by the supervising attending physician(s). This will be based on:
1. Attendance and professionalism: 25%
2. Clinical skills: 25%
3. Team involvement: 25%
4. Case presentation and academic participation: 25%

General Educational Objectives: Understand the comprehensive approach and care, coordinated team work and cost effective provision of rehabilitation services

MPMR-25 INTRODUCTION TO IN-PATIENT REHABILITATION

Prerequisites: Have completed third level Internal Medicine, Surgery and Radiology Courses

Course Description:

In this rotation, the student would be exposed to the clinical aspects of Physical Medicine and Rehabilitation. He/she will assume the role of a resident for 2-4 patients and be able to take medical histories, perform in-patient admissions, and perform physical examination to patients, all under the supervision of a faculty member or resident. In addition, the student will be able to participate of interdisciplinary rounds and meetings, dynamics particular of a rehabilitation team. As part of the rotation, involvement in academic activities will be required in conjunction with other residents. The student will be exposed to acute post-surgical rehabilitation, Stroke Rehabilitation, TBI Rehabilitation, Cardiac Rehabilitation, Spinal Cord Injuries, Geriatric Rehabilitation, In-patient Consultation and others.
Person in Charge : Ana Cintrón, M.D.
Contact Person : Sra. Loida Concepcion Nieves
Dates Offered : Throughout the Year
Course Duration : 4 weeks
Enrollment per Session : 2 student
Meeting Place : Physical Medicine and Rehabilitation Service, First Floor, C-121, SJ Veterans Administration Hospital 8:00 AM

Evaluation
Oral presentation will be required. Evaluation will be done by the supervising attending physician(s). This will be based on:
1. Attendance and professionalism: 25%
2. Clinical skills: 25%
3. Team involvement: 25%
4. Case presentation and academic participation: 25%

General Educational Objectives:
Understand the comprehensive approach and care, coordinated team work and cost effective provision of rehabilitation services.
MRAD -57  PRACTICAL RADIOLOGY MENTHORSHIP

Prerequisites: Basic Radiology

This is an elective radiology course with an emphasis on correlation between imaging studies and patient health. Student will receive individual mentorship and will participate in all imaging procedures held at the department. He/she will also assist in selected radiographic procedures. The student will interpret radiographs, CT scans, MRI scans and sonograms: and will discuss diagnosis, treatment options and management with the mentors. Student will attend tumor board conferences and correlate imaging studies with pathological findings.

Person in Charge : Josué Vázquez, M.D.
Dates Offered : Year Round (By arrangement)
Course Duration : 2-4 weeks
Enrollment per Session : 1 student
Meeting Place : Central Radiology Hospital Interamericano de Medicina Avanzada (HIMA), Caguas

Meeting Place : 8:00 a.m. – 12:00 p.m.

Evaluation

The student will be evaluated on the basis of knowledge, responsibility, judgment and attitude during the duration of the course. He/she will prepare one oral and written care to present to the mentors and will prepare one at t tumor board case to present conference.
INTRODUCTION TO RADIATION ONCOLOGY

Prerequisites: Completed Core Rotations; MSIV

Course Description:

The object of this clinical course is to introduce medical students to current radiation therapy techniques used in the management of patients with malignant disease. Emphasis will be placed on the use of external beam, intracavitary, and interstitial radiation in the treatment of malignant disease. The student will be assigned to work with various staff members within the Radiation Oncology Department, observing inpatient and outpatient care as it is given. The student will gain clinical experience in the diagnosis and management of common malignancies frequently encountered in medical practice. Physical diagnosis will be stressed, including complete head and neck examinations and indirect laryngoscopy. The interpretation and clinical correlation of appropriate radiographs, radionuclide scans, and CT scans as applied to radiation treatment planning will be discussed.

General Objective (s):

The student will gain clinical experience in the diagnosis and management of common malignancies frequently encountered in medical practice by attending morning rounds and participating in treatment planning with the faculty.

Specific Objectives

1. Describe the pathologies, incidence and diagnosis of the most common types of cancer.
2. Explains the benefit of current radiation therapy techniques used in the management of patients with malignant disease.
3. List at least one role for the use of the external beam, intracavitary, and interstitial radiation in the treatment of malignant disease.

Learning Activities

1. Participation on morning rounds which include case presentations of patients seen by students. Participation in treatment planning conferences (tumor boards) which include interaction with all the oncologic specialties such as surgical, medical, gynecologic, breast, head and neck and pediatric oncology teams.

Evaluation and Assessment

Case Presentations - will be evaluated by different attending verbally through discussion. Professionalism - Student arrives in timely manner with adequate dress code and attitude throughout the rotation period

Person in Charge : Dr. Carlos M. Chevere M.D.  Assistant Professor
Dates Offered : By arrangement
Course Duration : 2-4 weeks
Enrollment per Session : 1 student
Meeting Place : Radiation Oncology Department (Basement) at HIMA San Pablo, Caguas
e-mail: carloschevere@gmail.com
Phone: (787) 653-3434, Ext. 7712
Evaluation : Pass or Fail
MRAD-79 DIAGNOSTIC RADIOLOGY SPECIALTY ELECTIVES
Prerequisites: Basic Radiology course

Background and Justification:

This clinical elective is aimed to expose medical students to a program of instructed approach relevant to the field of radiology. Student will receive individual mentorship, observing and participating in all imaging procedures performed in the department. The rotation includes experience in general film interpretation, fluoroscopy, diagnostic ultrasound, computer tomography, MRI, ER radiology, breast imaging, neuroradiology, body, vascular/interventional and MSK radiology.

Competencies:

- Medical Knowledge
- Professionalism
- Patient care
- Interpersonal and Communication Skills

Goal (s):

The goal of the course is providing future clinicians with a clear imaging modalities in diagnosis and intervention available as well as the most efficient and cost effective way to use them in patient care.

General Objective (s):

The elective is organized to provide a comprehensive overview of the practice and application of modern diagnostic radiology. The role of the radiologic subspecialties in diagnosis and treatment in both out-patient and in-patient settings.

Specific Objectives:

Experience a concentrated example of the practice of a particular area of radiology from film interpretation to applications to clinical medicine by daily interaction with practicing radiology faculty.

Learning Activities:

Student will attend tumor board conferences and correlate imaging studies with pathological findings.

Evaluation and Assessment:

The student will be evaluated on the basis of medical knowledge, responsibility, professionalism, judgments and attitudes during the duration of the course. Written and oral presentation. A written evaluation will be performed by the attending at the completion of the rotation. The evaluation will be based on fulfillment of rotation requirements and observations by the physicians.

Person in Charge: Angela Mendez, M.D.
Dates Offered: Throughout the academic year (By arrangements)
Course Duration: 2-4 weeks
Enrollment per Session: 1 student
Meeting Place: Department of Diagnostic Radiology M & P Radiology Center, 617 Calle Manuel Pavia Santurce, PR. (787) 727- 5381, 8:00 am- 5:00pm amendez@mprad.com
MRAD-80  NEUROIMAGING & NEUROINTERVENTIONAL SURGERY

Prerequisites: The student who wishes to participate in this rotation must already have completed a one month elective rotation in diagnostic radiology. Basic Diagnostic Radiology (1 month)

Course Description:

This one month rotation will expose the medical student to both diagnostic neuroimaging and neurointerventional surgery. In diagnostic neuroradiology, the rotation will focus on advanced imaging techniques, including magnetic resonance imaging (MRI) of the brain, spine, and neck, and will also familiarize the student with angiographic modalities such as magnetic resonance angiography (MRA) and computed tomography angiography (CTA). In addition, the student will be able to observe neurointerventional procedures, both diagnostic and therapeutic, involving vascular diseases such as cerebral aneurysms, arteriovenous malformations, and stroke.

Justification:

Neuroimaging plays a crucial role in the diagnosis, treatment planning and management of patients with disease processes affecting the central nervous system. This course is intended for medical students with a special interest in the field of neuroscience.

Background

At the beginning of the course, the student will be expected to have a basic understanding of CT in the evaluation of neurologic emergencies and central nervous system pathology. The medical student is not expected to be familiarized with MRI, as this will be the focus of the course in terms of diagnostic neuroimaging.

Goal(s):

To familiarize the medical student with the field of Neuroimaging and Neurointerventional Surgery.

General Objective(s):

a. Gain a better understanding of neuroanatomy as depicted on MRI and CT;
b. Understand the indications, as well as contraindications, for different neuroimaging modalities and their role in diagnosis and clinical management.

Specific Objectives:

a. Recognize basic neuroanatomy on brain MRI studies;
b. Understand the basic physics principles of magnetic resonance imaging and digital subtraction angiography;
c. Be able to generate a differential diagnosis for findings on brain imaging studies;
d. Recognize conditions that require emergent surgical or medical management, including acute ischemia, intracranial hemorrhage, acute hydrocephalus, and brain herniation;
e. Understand the indications for the most common imaging studies of the brain, neck and spine;
f. Understand the basic vascular anatomy of the head and brain;
g. Recognize common vascular conditions and their imaging appearance on DSA, including arterial stenoses, aneurysms, and arteriovenous malformations.

Learning Activities:

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a. **Daily case discussions**: the student will participate in the protocoling, performance and interpretation of MRI and CT imaging studies with Dr. Polo.

b. **Case presentations**: The student will be asked to organize two case presentations, the first during the second week of the course, and the second one on the final week. The student will select two interesting cases and follow the hospital course of these patients. The presentations are meant to discuss the relevant anatomy, differential diagnosis, imaging work-up and the surgical and/or medical management of a particular disease process.

c. **Clinic**: Medical students will observe the evaluation, treatment planning and follow-up of patients with neurovascular disorders in the neurointerventional clinics.

d. **Neurointerventional cases**: Students will be allowed to scrub in and observe neurointerventional procedures, including diagnostic cerebral angiograms (DSA), as well as endovascular treatments, including embolization of cerebral aneurysms and arteriovenous malformations.

e. **Tumor Boards**: During their month rotation, the student will be able to participate in our monthly Neurosurgery and Head & Neck Tumor Boards, which emphasize a multidisciplinary approach in the diagnosis, treatment and long term management of patients with tumors of the brain, head and neck.

**Evaluation and Assessment:**

The medical student will be evaluated based on the following parameters:

a. **Professionalism**: This includes attendance, timeliness, behavior with other colleagues, and willingness to help.

b. **Medical knowledge**: The student’s medical knowledge, as it relates to the objectives set forth for this course, will be evaluated, and assessed by means of case discussions and case presentations.

c. **Evidence-based medicine**: The concept of EBM in guiding selection of imaging studies will be assessed during the course.

**Grading System: The following grading system will be used:**

a. **A** = Outstanding rotation (Outstanding student, who continuously demonstrated an eagerness to learn and surpassed all expectations).

b. **A** = Excellent

c. **B** = Above average

d. **C** = Complied with minimal course requirements

e. **F** = Failed

**Person in Charge**: Mario J. Polo, M.D., DABR  
Board certified in Diagnostic Radiology and Neuroradiology  
Senior Member of the American Board of Neuroradiology (ASNR) and of the Society of Neurointerventional Surgery (SNIS)

**Dates Offered**: Ongoing, starting October 2014  
**Course Duration**: 1 month  
**Enrollment per Session**: 1  
**Meeting Place**: HIMA San Pablo Caguas

Approved by Curr C SOM  
October 2, 2014
MCUM 04  INTRODUCTION TO ALTERNATIVE AND COMPLEMENTARY MEDICINE

Prerequisites: Third year medical student

The students will participate and learn the Integrative Medicine Approach to health care. There will be opportunities to observe and to learn, modalities like acupuncture, therapeutic massage, chiropractic care, bioenergetics medicine, reflexology, aromatherapy and homeopathic medicine. The course will last 4 weeks, with didactic presentations during the first week, hands on experience with the faculty of CUMIC (Centro Universitario de Medicina Integral y Complementaria) during the last 3 weeks. There will be time to evaluate and review, landmark evidence based articles, related to CAM modalities. A case presentation, research ideas in CAM and literature review will be expected in writing, as part of the evaluation process. Online modules, (3) will be completed from the National Center for Complimentary and Alternative Medicine Website (www.nccam.nih.gov), before the end of the course and certificate of completion has to be presented, and to be considered towards the final evaluation. The evaluation process will be divided as following: one third will go for attending the course, one third will be given to the case presentation or research ideas, and one third will distributed to the one-line modules.

Goals:

1. To familiarize students with the definitions of Integrative Medicine, Complementary and Alternative Medicine. Help the students of medicine broaden the horizon of their practices in the Future.
2. To familiarize students with basic principles of acupuncture, Chiropractic Medicine, Spirituality & Healing Medicine, Homeopathic Medicine, Aromatherapy, Therapeutic Massage, Bionergetic Medicine and Mind/Body Medicine.
3. To familiarize students with the evidence available in these CAM modalities.
4. To provide CUMIC and the faculty with research ideas that we can implement towards the development of CUMIC research project.

Course Coordinator : Ms. Diana Torres
Course Starting Dates : Every 1st Tuesday of the month
Course Duration : 4 weeks
Enrollment per Session : 2 students for elective course
Meeting Location : CUMIC Facilities
Evaluation : As stated, one third attendance, one third case presentation and or research ideas, and one third completion of modules.

*Students must have completed two hours workshop in Integrative Medicine
DEANSHIP IN MEDICINE

MDEAN-01         STUDENT AS TEACHER
Prerequisites:    Third Year of Medicine

This elective is designed to train students to become competent teacher. Student teachers can assist in obtaining better academic performance from learners. Principles of learning theory, effective teaching techniques and evaluation of performance, including effective methods of giving feedback to trainees, are presented in didactic sessions. There is emphasis upon how to teach clinical skills effectively. This theory is put into practice by the participant in the elective, who serves as an instructor for freshman or sophomore students in physical diagnosis and interviewing, and an evaluator of their performance during standardized patient examinations. By serving as teacher and evaluator the participant enhances his/her own clinical skills.

Person in Charge  : Dr. José L. Oliver-Sostre
Dates Offered     : Throughout the Academic Year (Except July) Strictly by appointment.
Course Duration   : 2-4 weeks
Enrollment per Session : 2 students
Meeting Place     : Center for Development of Clinical Skills
Evaluation        : The participant is evaluated on the basis of attendance at all required activities, review of recorded performance-based examinations, and feedback from the supervisor/ faculty and the students who have been taught clinical skills by the participant.

General Educational Objectives:

1. Expose student to the teaching environment
2. Improve student’s teaching skills knowledge and attitudes toward teaching
3. Teach students how to provide effective feedback to students
4. Improve organizational skills of students
5. Develop positive relationships among students
6. Provide teacher training for future faculty members
7. Improve self discipline and sense of professionalism
8. Improve clinical judgment

Grading System:

Participation and Clinical (subjective) evaluations     75%
Case Presentation - Mini Lecture                     25%
RESEARCH

MERE-01  RESEARCH ELECTIVE

Pre-Requisites: Have already completed all the requirements of third year and had already demonstrated to have taken USMLE Clinical Skills 2 examination.

Description:

Typically involve a student working with a faculty member that has an on-going research or one that is interested in starting a research project student who want to receive credit for research electives must meet with the Medical Electives Coordinator and the UCC research faculty advisor before beginning the research project. Submit the final project and have a meeting with research faculty advisor at the institution.

Obtain an M4 Research Elective Proposal form. The student should discuss the form with the sponsor of the research and then complete the research form. The student will be part of a research team, which include principal investigator (preceptor), co-investigators and auxiliary personnel. Duties will be according to the assignment position within the research team, which may include participation in the study design, review of literature, data recording, sampling and presentation and or publishing final work.

General Education Objectives:

Research electives are available to well-qualified students who have established solid academic success as well as good clinical evaluations. Research electives should be complementary to the overall medical school experience.

Specific Objectives:

1. Identify a research faculty research mentor and proposed project.
2. Obtain regulatory approval for the project, as appropriate. In most cases this will include writing and submitting a protocol to the IRB.
3. Present findings to the assigned research faculty assign within the institution. Submit a final product to the resident research office. This may be an abstract, a poster presentation, the draft of a paper, or a publication.
4. Research electives in the M4 year at UCC can be designed to receive two or, four, or eight weeks of credit.
5. The work load demand in the designed rotation should be appropriate for the number of hours of credit proposed.

<table>
<thead>
<tr>
<th>Dates Offered</th>
<th>All year long</th>
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<tbody>
<tr>
<td>Course Duration</td>
<td>2 -4 weeks</td>
</tr>
<tr>
<td>Enrollment per Session</td>
<td>1 student</td>
</tr>
<tr>
<td>Meeting Place</td>
<td>Depends on the research facility</td>
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<tr>
<td>Evaluation</td>
<td>Pass or Fail</td>
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</table>
AMERICAN SIGN LANGUAGE BASIC COURSE

SIGN-01

Pre-Requisites: None

Description:

The course is the first in a series of courses designed to develop the skills and knowledge needed to communicate in American Sign Language with some variables of the sign used in Puerto Rico. This course introduces basic sign language vocabulary and fingerspelling. In addition, students will be introduced to aspects of American Deaf culture and history. Other relevant topics will be addressed.

Justification:

American Sign Language (ASL) is the 4th most studied modern/foreign language at colleges and universities in the U.S., according to the Modern Language Association's statistics. As an health care specialized institution, it should move on with the needs of all the patients. Also the UCC will be heading towards a new complementary education.

General Education Objectives:

Students will demonstrate the ability to use and understand American Sign Language at a basic level:

- Students will be able to demonstrate a variety of simple statements and questions, and often the main idea of longer, but simple messages and conversations.
- Students will be able to initiate and respond to simple statements and questions, and be able to engage in basic face-to-face conversation within the framework of the vocabulary and grammar appropriate to this level.
- Students will exhibit basic competency in fingerspelling.
- Students will demonstrate knowledge of the Deaf culture and D/deaf history through reading and writing assignments.
- Students will demonstrate knowledge of the Deaf culture and D/deaf history through written researched assignments, formal evaluations, and class discussions.

Specific Objectives:

- Culture: ways of communicating; getting other’s attention; beginning and ending conversations; maintaining eye contact; making connections; negotiating signing environments.
- History: Deaf Profiles: Significant People in Deaf History; American School for the Deaf (ASD); Gallaudet University; evolution of ASL (LSF, Martha's Vineyard, indigenous signs); terminology (Deaf vs. deaf); debunking common myths.
- Grammar: simple statements, commands, wh-questions, yes/no questions; affirmative and negative statements; topicalization (topic/comment structure); personal pronouns; contrastive structure; spatial agreement and spatial.
Learning Activities:

- Instructional resources for this course will include texts designed specifically for the teaching American Sign Language, a variety of college level books, periodicals, and instructor developed materials.
- Methods of instruction will include lecture, independent and group work, guests, videos, computer and on line instruction through available College platforms such as Angel. Students will also have the opportunity to attend Deaf culture events.

Evaluation and Assessment:

Formal and informal measures will be used to assess the Student Learning Outcomes. These measures will include formal unit tests to assess student’s receptive “listening” skills, including a written section to assess student’s knowledge of Deaf culture and history. Assessment of student’s expressive “speaking” skills will be assessed with a formal rubric. Additional assessment measures will include: journals, self- evaluation/reflection papers, research, and reports both written and signed. Critical thinking, computer literacy, and information resources will be assessed through a research paper.

Grading System:

The grading system will be based on Certification or Participation depending on the scale grade that the student have.

<table>
<thead>
<tr>
<th>Dates Offered</th>
<th>Throughout the academic year (By arrangements)</th>
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</thead>
<tbody>
<tr>
<td>Contact Person</td>
<td>Milagros Bauza / Prof. Víctor L. Gastón</td>
</tr>
<tr>
<td></td>
<td>Colegio San Gabriel</td>
</tr>
<tr>
<td>Text Book</td>
<td>“Aprende Señas Conmigo”- Aida Luz Matos</td>
</tr>
<tr>
<td></td>
<td>$25.00 per unit</td>
</tr>
<tr>
<td>Course Duration</td>
<td>Semester (Tuesdays from 5:00 to 8:00 p.m.)</td>
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<td>Enrollment per Session</td>
<td>20 student</td>
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<td>Meeting Place</td>
<td>UCC</td>
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<td>Evaluation</td>
<td>Pass or Fail</td>
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<tr>
<td>Cost</td>
<td>$130.00 per person. $40.00 The certificate of the Universidad del Turabo, (this certificate is not mandatory). Colegio San Gabriel delivers one but that does not apply to continuing education credits.</td>
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Approved by Curr C SOM
October 2, 2014