TEACHING CULTURAL COMPETENCE THROUGH CULTURAL IMMERSION

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With the ever-increasing cultural diversity in our state and our nation, cultural competence and its impact on health care delivery has become a subject of interest. With this in mind, the Sanford School of Medicine has articulated an institutional goal to incorporate diversity issues into the medical curriculum, not only in electives, but in the required curriculum for all students. The first Cultural Colloquium was conducted fall, 2005, during which 48 third-year medical students spent a week studying cultural diversity and providing community service. During the first 2 days, students attended lectures presented by speakers from diverse cultures and visited a Hutterite Colony. Days three through five were committed to self-selected cultural immersion and service experiences throughout the state. Students selected the following cultural groups for their experience: Native Americans (31%), Senior citizens (21%), Persons with disabilities (21%), Foreign born (17%) and other (10%). During the three-day immersion, students made home health visits, participated in health fairs, worked on home renovations, tutored children, etc. Several months later, students presented a poster session where they shared their experiences with each other, faculty and the public. Students rated this experiences 4.58 out of 5.00 which is the highest rating achieved in the area of cultural competence.

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USING A CHRONIC PATIENT EXPERIENCE TO EVALUATE COMPETENCIES

W. Marshall Anderson, Ph.D.*, *and Patrick W. Bankston, Ph.D., Indiana University School of Medicine - Northwest, Gary, Indiana 46408 USA*

Concurrent with our PBL/Competency curriculum, we instituted a chronic patient project for MS1 and MS2 students. The objective was to help students understand the impact of an illness on all aspects of a patient's life. This chronic patient experience helped students develop skills in communication, H&P, social contexts of medicine, self-awareness, professionalism and ethics.

At the start of their first year, MS1 students are assigned a patient with a chronic illness. Students monitor and help care for that patient for two years, meeting with their patient monthly and often accompanying the patient on office visits, medical treatments and surgeries. Three presentations of chronic patient to faculty are made during the two years. The presentations (spring of year 1, fall of year 2 and spring of year 2) cover a complete history and physical, social, financial and insurance information, disease progression, impact of illness on family relationships, the student's relationship with the patient, and the experience dealing with a patient with ongoing medical problems. Students report that they have gained an understanding of how a patient and their family deals with a chronic illness and that they gain an appreciation of becoming a patient advocate in the disease process. Many form a long-term bond with the patient. Faculty members (both PhDs and MDs) rate the students on their competency skills and abilities based on their presentations. The chronic patient project has fulfilled its objectives and continues to be a vital part of the problem-based learning/competency curriculum at our school.

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**** Award Finalist**

ASSESSMENT OF The Independent Study Pathway at LECOM: ACADEMIC MARKERS AND STUDENT FEEDBACK.

***Mark A. W. Andrews, Ph.D.**, *Director of ISP, The Lake Erie College of Osteopathic Medicine, Erie, Pennsylvania, 16509 USA*

The Independent Study Pathway (ISP) at the Lake Erie College of Osteopathic Medicine (LECOM) was initially opened for student matriculation in the Fall of 2001. It was founded as a third available pre-clinical basic science curriculum in recognition that not all students learn in the same manner, and as a means to aid students develop lifelong learning skills. The ISP joined the problem-based learning pathway (PBLP) and lecture discussion pathway (LDP) which had already been made available to incoming students in previous years. Each of these pathways exist within the MS 1 and MS 2 years of matriculation, terminating as students enter their clinical clerkships in the MS 3 year. Presently, four classes have completed the two year ISP curriculum, and two of these classes have graduated. Here we present academic performance markers, as well as results of: 1) individual student interviews; and 2) a survey instrument developed to assess student adaptation and satisfaction. The interviews and surveys were completed as students finished the MS 2 year. While academic markers indicate that ISP students perform at a level similar to that of PBLP and LDP students, key findings in the interview and survey process indicate that: 1) ISP students chose to attend LECOM because of available choice of pathways; 2) a great majority of students would remain with ISP given the chance to begin their matriculation again; and 3) a great majority of ISP students believe that it is important to have a choice of pathways. Additional results, and specific comments of the students concerning their adaptation and their perceived success in this type of learning modality, will also be presented.

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**** Award Finalist**

INTEGRATED, CASE-BASED TEACHING AND ASSESSMENT ENHANCE STUDENT PERFORMANCE AND SATISFACTION IN THE ANATOMICAL SCIENCES

Peter Cauwenbergs, B.Sc., M.Sc., Ph.D., D.C*. Department of Anatomy, Canadian Memorial Chiropractic College (CMCC), Toronto, Ontario, M2H 3J1 CANADA*

A novel approach to teaching and student assessments has been implemented at the CMCC to better integrate all content areas in each year of study. Case-based, modular presentations and examinations were used to integrate basic science, clinical science and non-science (where possible) content areas. Sequencing of anatomical content into various body region modules, including; back, head & neck, upper limb, brain & spinal cord, thorax, abdomen & pelvis, and finally the lower limb region, was used as a framework for integration with other content areas. Clinical scenarios used in each content area were then utilized in the modular assessments and questions relating to the clinical cases, from each content area were combined into common examination papers. All modular assessments consisted of three theory papers, focused on content presented during well defined periods within the module and an objective, structured, practical examination (OSPE) which assessed the entire module.

To analyze student performance on the theory papers, questions relating to anatomical content, including gross anatomy, histology and embryology, were tracked for each module and compared to student performance in previous years when anatomical content was presented and examined as separate courses. Similarly, student performance on anatomy questions in the OSPE for each module was compared to that on practical anatomy examinations in previous years. Students were also surveyed to assess levels of satisfaction with the new integrated examinations. The results show that, with improved integration, mean class % scores on anatomical questions increased slightly from those observed previously, when content was presented with minimal integration. Also, student satisfaction was significantly increased with this more integrated approach. Students indicated that the learning experience was enhanced because content relevance was now more obvious to them and the new level of integration provided a more cohesive learning approach.

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INTEGRATION OF POPULATION HEALTH INTO THE BASIC SCIENCE MEDICAL CURRICULUM

Sharon K. Hull1,[2], M.D., MPH, ***George A. Dunaway, Ph.D.,[3]****, Anna Mies-Richie[2] M.D., Tracey Smith[4], APRN-BC, MS, Brenda Yale[4], RNC, BSN, and Steven J. Verhulst, Ph.D.[5], Department of Medical Humanities[1], Department of Family & Community Medicine[2], Department of Pharmacology[3], Department of Medical Education[4], Division of Statistics[5] Southern Illinois University School of Medicine, Springfield, IL 62794-9629, USA*

SIU-SM initiated a program to integrate population health and preventive medicine throughout its four year curriculum. Student experiences involved critical appraisal of medical literature, presented in a context relevant to problem-based case materials in each educational unit. In the Endocrinology, Reproduction, and Gastrointestinal educational unit of the second year, techniques for critical appraisal of a scientific paper describing a clinical trial were demonstrated using a seminal article from the Women's Health Initiative (WHI) study concerning the postmenopausal use of estrogen and progesterone for prevention. Students were then assigned one of six case scenarios, and were asked to conduct a literature review, to find and review one high-quality study so they could decide whether to use hormone replacement therapy (or other treatment) in that clinical setting. Students discussed the six scenarios in a small-group setting, facilitated by faculty with expertise in population health and prevention, pharmacology, physiology, and primary care clinical medicine. The series of events concluded with a one-hour, large-group panel discussion of two additional clinical case scenarios. Student efforts were assessed by small group participation and a written summary of the search strategy used.

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INTEGRATION EXERCISES FOR PRECLINICAL COURSES –From basic sciences to real world –

Héctor F. Gómez M.D.*, *Physiology/Pathology Department, Martha García M.D., Microbiology Department and, Alvaro Pérez M.D., Institutional Research San Bautista School of Medicine, Caguas, Puerto Rico, 00725*

Integration has been accepted as an important educational strategy in medical education. In the process of institutional curriculum review and renewal, it was identified the need to increase integration in the basic sciences courses. To meet this requirement and strength other competences it was implemented a series of exercises during the preclinical years. The principles considered for the design were: student centered; promote self-learning; facilitate integration (both vertical and horizontal using a multidisciplinary approach); early exposure to clinical scenarios and experiences; integration of technology in the learning process; diverse evaluation and assessment strategies; highlights the values, attitudes and social responsibility in the practice of medicine; community based medical education; incorporation of information literacy and Evidence-Based Medicine.
Using a small group work format, the instructional design seeks that the student analyze, discuss and propose solutions to health problems integrating the knowledge and skills from the previous and current courses. In addition, elements of clinical courses are presented to strength vertical integration.
The selected topics for the series correspond to a “hot topic” in medical education or a public health problem in Puerto Rico. We will present the outcomes of the series implementation including academic results, student satisfaction and faculty opinions.

NOTES:

CLINICAL SKILLS CURRICULUM REFORM AT THE UNIVERSITY OF PUERTO RICO SCHOOL OF MEDICINE

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It is a well known fact that competency in clinical skills is essential to deliver adequate medical care. Clinical skills education has been a subject of scrutiny since the beginning of this decade when evaluation of quality of work turned to one of learner's performance outcome. Performance outcome of clinical skills is evaluated at the medical school level by the LCME who requires schools to teach and assess competency in these skills and by the USMLE 2 CS which evaluates each student competency in such skills. In 2001 the UPR School of Medicine began a clinical skills curriculum reform. One of the first changes to be implemented was a continuum between the first year course, Introduction to Clinical Skills, and the second year course, Fundamentals of Clinical Skills. Basic history taking, communication and physical examination skills are taught in the first year. New teaching methods include lectures, demonstrations and practice with Standardized Patients (SP) and small group discussions with role playing. Formative assessments of skills are carried out by SPs. During the second year advanced physical examination, history taking and communication skills are taught. Students now have more clinical correlations and always practice skills on real patients with the guidance and feedback of a faculty member. Evaluation methods include competency examinations by faculty members and a Clinical Skills Assessment Test (CSA). The results of these changes include a 95% passing average on the USMLE 2 CS for the class of 2004, a 92.7% agreement by the Class of 2005 on the AAMC Medical School Graduation Questionnaire that these courses prepared them for the clinical clerkships and a significantly improved performance on the CSA.

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INTEGRATING THEMES INTO AN INTEGRATED CURRICULUM: GENETICS AS A MODEL

Katherine M. Hyland, Ph.D.*, *and Tai M. Lockspeiser, Department of Biochemistry & Biophysics, School of Medicine, University of California, San Francisco, CA 94143 USA*

The recent explosion of genetic applications in medicine and the fact that genetics/ genomics had minimal coverage in the integrated pre-clinical curriculum introduced at UCSF in 2001 motivated an effort to integrate new genetics instruction into an already integrated curriculum. During 2004-05, we undertook a curriculum development process, applying Kern's six-step approach. Step 1: Problem Identification- Genetics was underrepresented in the UCSF curriculum. Step 2: Needs Assessment- We compared the current learning objectives to those established by the AAMC (2004) and conducted a focus group with pre-clinical students. Step 3: Goals & Objectives- We solicited internal and external expertise in different areas of genetics and medicine. The consensus from steps 2 and 3 was to highlight basic genetic concepts while teaching the current genetic approach to medicine, use more small groups, and cluster sessions. Step 4: Educational Strategies- We negotiated with course directors to determine where and how to integrate genetics content. Step 5: Implementation- The first year was implemented in 2005-06, the second year in 2006-07. Step 6: Evaluation- Student evaluations from the first year indicate high satisfaction with the new sessions. This curriculum development process revealed a common challenge of balancing basic and applied content when teaching rapidly expanding fields such as genetics, and unique challenges associated with integrating genetics instruction into an integrated curriculum, such as finding appropriate points of integration while maintaining a logical order of content and working with multiple course leaders with different areas of expertise.

NOTES:

MSSM'S CURRICULUM CONTENT REVIEW TASKFORCE (CCRT): A PEERREVIEW PROCESS TO PROMOTE CURRICULAR INTEGRATION

Nancy Kheck, Ph.D.*, *Lisa Bensinger, M.D., Laurie Brown, MA, Faye Logothetis and Erica Friedman, M.D., Department of Medical Education, The Mount Sinai School of Medicine, New York, NY, 10029, USA*

In compliance with the LCME mandate for periodic update of medical school curricula, we developed a peer-review mechanism to assess our curriculum across all four years. The goals are: 1) to assure appropriate level of curricular depth and detail, 2) to demonstrate that the curriculum adequately facilitates self-directed learning, 3) to provide meaningful feedback to course/clerkship directors and oversight committees 4) to create a plan for enhancing identified deficiencies, and 5) to evaluate whether course and clerkship assessments mirror course content, and appropriately assess clinical reasoning skills. CCRT utilizes clinical advisory subcommittees comprised of an educator, a clinician, and a specialist / content expert. Assigned to each course, they review course/clerkship goals and objectives, hours, formats of all didactic sessions, content areas covered, and assessments, using standardized templates to identify strengths & weaknesses in each domain. CCRT subcommittee recommendations are reviewed with critical feedback from course leaders and implemented by consensus of the executive curriculum committee (ECC). In ECC specific attention is focused on how core basic science knowledge, clinical skills, and analytical approaches are integrated and reinforced to better prepare students for the management of patients in clerkship training. Nearing the completion of our pre-clerkship courses, we have established that this process is a vital tool for the systematic refinement of course content and in the long term for strategic curricular planning. From exit interviews, most course leaders felt the process was inclusive, provided external validation and they reported positive outcomes from the detailed critical feedback of their advisory committees.

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**** Award Finalist**

SCHOLARS PROGRAM: TARGETING INDEPENDENT, ADULT-LEARNERS IN MEDICAL SCHOOL

Ray S. King, Ph.D.* *and Carey M. James Scholars Program, Ross University School of Medicine, Portsmouth, Dominica*

Medical Schools have been characterized by offering a single model of teaching, regardless of the needs or the characteristics of the student population. Students from different backgrounds and varied learning styles are moved through a single, identical curriculum and pedagogy. The Scholars Program at Ross University School of Medicine was designed to better serve those students who are motivated, independent, self-directed adult learners. Invitation to the program is offered to selected students from the incoming class based on undergraduate performance and MCAT scores, though enrollment into the program is completely voluntary. In order to remain in the program, Scholars must maintain a preset standard of academic performance. Participants in the Scholars Program do not attend the scheduled lectures, but complete the learning objectives at their own pace, meeting regularly with faculty to evaluate their progress through weekly quizzes and clinical case studies. The case-based approach was designed to integrate didactic material with clinical relevance, and to put the student into a clinical framework from the onset of medical school. Scholars can also view daily lectures from on- and off-campus with either live-feed, or archived videos. This independent style of learning gives the students in the Scholars Program the flexibility to tailor their own study schedule, while still retain access to all faculty and available resources. Currently there are 114 students in the Scholars Program: 37 first semester students, and 77 second semester students, out of a class size of 339 and 364, respectively. The overall student population is divided into three groups: Lecture-based, Scholars, and Control. The Control group consists of students who qualified for the Scholars Program but opted to remain in the classroom and attend lectures. Using standardized examination scores, we found that the Scholars students consistently scored ~7-9% above the average of students in the traditional didactic classroom. When compared to control group, we did not find any statistically significant differences between the performance levels of the two groups.

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STUDENT FEEDBACK REGARDING PEER-EVALUATION IN THE FIRST-YEAR CURRICULUM

Kirsten A. Larson, Ph.D. *, *Dennis M. DePace, Ph.D., Janet D. Smith, Ph.D., Departments of Microbiology and Immunology, Neurobiology and Anatomy Drexel University College of Medicine, Philadelphia, PA 19129 USA*

Excellence in medical care requires mastery of core knowledge and technical proficiency along with acquisition of appropriate behaviors and attitudes. We have added a student peer-evaluation component to promote effective team-based, humanistic medical care. Throughout their first-year, students completed self-evaluations and anonymous peer-evaluations for each laboratory or small group member in Gross Anatomy, Microanatomy, and Medical Immunology. Students were asked to rate each group member on overall participation, contribution to learning, and willingness to do his/her fair share of the work. Students were also given an opportunity to make comments regarding the group. Prior to completing the formal evaluation, students were encouraged to discuss group dynamics and to provide positive and constructive feedback directly to one another. After the results were complied for each course and reviewed by a group of course directors, individual action plans were created. A number of students were identified by a threshold-based criterion to receive either positive recognition for exemplary behavior or remediation. Action plans for identified students were sent to the Preclinical Promotions Committee for approval and to the Dean of Students or the appropriate course director for implementation. In a student survey, the peer evaluation process was rated highly and written comments were favorable.

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** Award Finalist

TEACHING COMMUNICATION SKILLS TO MEDICAL STUDENTS, A CHALLENGE IN THE CURRICULUM?

Deveugele M*, *Derese A, De Maesschalck S, Willems S, Van Driel M, De Maeseneer J. Department of General Practice and Primary Health Care, Medical School Ghent University, BELGIUM*

As communication skills become more and more important in medical practice, the new medical curriculum at Ghent University (1999) implemented a communication curriculum. Communication training or experiences in 'real life' settings are provided every year of the medical curriculum. The training starts with simple basic skills but gradually slips into medical communication or consultation training and results in communication in different contextual situations or with special groups of patients. Rehearsal is important and seen as inevitable. Poorly performing students get extra training. Several didactical methods are used: the skills are demonstrated by means of video-tapes and paper cases of patient stories. Skills are trained in small groups (10 to 15 students), with focus on role-playing with colleague students or simulated patients (SP). Video tapes of real consultations give an idea of the performance of each student. Every year the students are assessed by means of an OSCE (objective structured clinical examination). After six years of experience with the new curriculum, remarks and questions need to be answered. Small group training gives a huge workload and with different trainers discrepancies between groups can appear. Choosing the most suitable trainer for communication skills is not easy; several options are available: specialists in communication like psychologists with interest in medical practice, GPs with interest in medical communication, medical specialists for communication topics concerning medical problems within their domain. As the most important didactical approach lies in practising the skills, the selection and training of simulated patients remains a challenge. A communication continuum during the whole curriculum seems to be worthwhile. Students with specific communicative problems are detected early, remediation is provided. Rehearsal every year seems to lead to better acquisition. The most positive point is that communication is embedded in a global patient-, student-and community-oriented curriculum and that communication skills are seen as core elements of good doctoring.

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JUNIOR AND SENIOR MEDICAL STUDENTS TEACH GROSS ANATOMY: A WIN - WIN SITUATION

Carol A. Nichols, Ph.D.* *and Julia Shelton, M.D., Department of Cellular Biology and Anatomy, Medical College of Georgia, Augusta, Georgia 30912 USA*

Residents and senior medical students at most medical schools are expected to assist with the clinical teaching of more junior medical student colleagues. Faculty at the Medical College of Georgia have developed a new elective to help junior and senior medical students prepare for this teaching expectation. Approved students spend four weeks serving as teaching assistants for our freshman medical gross anatomy course, which runs for 18 weeks and enrolls approximately 200 students. Students taking the elective attend all lectures and prosections, participate as laboratory instructors, and hold a minimum of 10 additional office/lab hours per week.

The elective has four primary objectives.
1. Junior/senior medical students have an opportunity to review anatomical areas of interest.
2. Junior/senior medical students will have an opportunity to hone teaching and mentoring skills.
3. Freshmen medical students interact with and receive “peer” instruction.
4. Freshmen medical students benefit from the having more instructors in the lab.

To date, two students have participated in the elective. Both reported increased confidence in their anatomy knowledge base. Comments from freshmen students suggest that having upper level student teaching assistants is beneficial. We are exploring better measures to determine if we are meeting the elective’s objectives.

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**** Award Finalist**

MEDICAL STUDENTS' AUDIT OF CHRONIC DISEASE CARE IN A SERVICE-LEARNING ENVIRONMENT

Tomlin J Paul MB BS MPH*, *Anna Matthews MB BS, DM, MPH, Anika D Mitchell BSc., Satnarine R Maharaj MA, FFPHM, Pauline Williams-Green MD. Department of Community Health and Psychiatry, University of the West Indies, Kingston 7, Jamaica*

Chronic diseases in particular, diabetes mellitus and hypertension, account for substantial morbidity and mortality in Jamaica. In addition to teaching medical students on diagnosis and management of these conditions, it is important for them to examine quality of care issues and factors affecting outcomes. At the University of the West Indies, Jamaica, students in their final year community health clerkship are asked to do a structured review of the management of diabetes and hypertension in rural health centres. This paper describes the students' assessment of the management of chronic diseases (diabetes and hypertension) in selected rural health centres. Students were asked to conduct a thorough review of case-notes for a patient with diabetes, hypertension or both. An audit form, with a summarised listing of protocol guidelines for the management of these conditions, was used as a guide. A small sample of thirty students (30% of the class) completed the exercise over a six month period. The gaps in adherence to the protocol for managing these conditions were determined.

The frequency of protocol adherence gaps ranged from 2% to 83%. In 70 percent or more cases, protocol was not adhered to for routine urinalysis, appropriate investigations for hypertension, annual tests for assessment of diabetes and its complications and referral to ophthalmologist and nutritionist. In fewer instances (25 to 50%), ECG assessments, glucometer readings and fundoscopy were not recorded. A family history of the condition was not recorded 41% of the cases. Blood pressure assessment however was missing in only 2% of cases. This service-learning environment illustrates several gaps in protocol adherence for the care of diabetes and hypertension. This can form a basis for students' discussions and reflections on improving quality of care for chronic diseases.

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MEDICAL STUDENTS' FEEDBACK ON RURAL CLINIC EXPERIENCES IN JAMAICA

Tomlin J Paul, MB BS, MPH*, *Anika D. Mitchell, Winsome Segree, MB BS, MPH, Satnarine Maharaj MA, MFPHM*

At the University of the West Indies, in Jamaica, final year medical students work in a rural community for a 3 week period. This broadens their training beyond that of the hospital and urban community setting giving them a more rounded outlook on the practice of medicine. This study sought to ascertain the views of final year medical students on their rural clinic experiences. Students worked in a rural clinic setting for three weeks, where they saw and managed a range of primary health care/ family medicine problems. At the end of the 5 week clerkship they completed course evaluation questionnaires within which they were asked to comment on and rate the rural clinic experience using a 5 point scale (1= poor, 5 = excellent). Feedback was obtained from 153 students (approximately 50% of participating students) over the period spanning May 2000 to March 2004. Small group face-to-face feedback was also obtained.
Over 80.4% of the students who responded rated the experience as above average (mean 4.1, range 2 - 5). The experience was seen as useful as it allowed students to build clinical confidence and enhanced clinical skills. One group felt that their experience would have been ideal if a greater patient load was available. The small group feedback was consistent with the written evaluations. More than 80% of the students deemed this rural clinic experience to be of great value (above average to excellent) as it allowed them to develop clinical skills and confidence. Exposure to clinical care in rural settings is an important component of the medical curriculum at the University of the West Indies.

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TEACHING MENDEL? TEACHING HARDY-WEINBERG? TEACHING HOX? – HOW TO TEACH HUMAN GENETICS IN THE MEDICAL CURRICULUM

Ute Tautenhahn, Dr.*, *Jörg Pelz, Dr., Prodekanat Studium und Lehre, Charité Universitätsmedizin Berlin, 10117 Berlin*

With the completion of the human genome project a milestone for research in human genetics has been achieved. This work is generating a new surge of experimental studies. Exiting prospects arise for the application of this knowledge to medical clinical practice. On the other hand studies show that (primary care) physicians misinterpret a lot of genetic test results. Medical educators are facing two problems:
-to strengthen the knowledge about genetics among practicing physicians by ensuring the quality of continuing genetics education; this is highly dependent on the motivation of this group
-to increase the emphasis on genetics in medical school curricula. Since changes in medical curricula are zero sum games a major problem for the latter undertaking is the incorporation of new knowledge into an existing curriculum. We analyzed the content of the genetic curricula in a majority of medical departments in Germany. Medical genetics is explicitly includes in the curricula and is in addition taught in the overlapping zones by other medical disciplines. We made comparisons between the different curricula and extracted the competencies and specific learning objectives apparent or hidden. Medical genetics can be taught particularly well using PBL with an especial emphasis on genetic principles. These principles have to be understood as abstracts, universal entities that could serve to designate classes of entities or relations - universal in that they apply equally to every thing in their extension thus enabling students to solve problems when confronted with seemingly new and challenging situations.

NOTES:

EXPERIENCE WITH AN INTEGRATED COURSE IN HISTOLOGY AND PHYSIOLOGY: EMPHASIS ON INTEGRATED ORGANIZATION, DELIVERY OF CONTENT AND STUDENT ASSESSMENT

Thomas V. Peterson, Ph.D.* *and Douglas P. Dohrman, Ph.D., Department of Systems Biology and Translational Medicine, Department of Neuroscience and Experimental Therapeutics and Office of Educational Development, Texas A&M University System Health Science Center College of Medicine, College Station, Texas 77843-1114 USA*

Current trends in educational curriculum development are focused towards more integrated teaching. This past year, the curriculum at our institution included a new first year integrated course combining material previously taught in separate Histology and Physiology courses. All aspects of the course emphasized a philosophy and an attitude of integration of effort to yield a course product that truly reflected more than just a combination of two past independent courses. This resulted from the faculty being willing to have a team approach of working together in both organizing and delivering the course to the students. This was further emphasized in terms of the methods of testing the students in that faculty wrote combined exam questions that assessed students' knowledge of both Histology and Physiology and also incorporated material previously taught in the course. Finally, because the institution was chosen by the NBME to be a pilot school for their new customized exam project, the final exam used was a computerized NBME exam with the question number breakdown per organ system and particular question format being selected by the course faculty. Year end evaluations of the course showed that it was very highly rated by the students.

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CURRICULUM DEVELOPMENT: FUNDAMENTALS OF MOLECULAR MEDICINE

Julie M. Tebo, Ph.D*., *Donna Driscoll, Ph.D., Richard Mortensen, Ph. D., Kathy Berkner, Ph.D., Mike Kinter, Ph.D., Daniel Neides, M.D. and Alan Hull, M.D, Ph.D., Departments of Immunology, Cell Biology, and Medical Education, Cleveland Clinic and Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, Cleveland, Ohio, 44195 USA*

The Fundamentals of Molecular Medicine (FMM) course is a component of the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University medical school. The primary objective of the course is for students to become facile with cell and molecular biology and biochemistry in order to apply that knowledge to solve clinically relevant questions. Ancillary to the acquisition of basic science information, the students develop skills in small group interactive student-centered learning. The Fundamentals of Molecular Medicine course is comprised of two sections: problem solving sessions (PSS) and focus topic (FT) sessions. The problems solving session utilizes a case-based approach to acquire a foundation in basic cell and molecular biology and biochemistry in an environment similar to problem-based learning. The focus topic sessions emphasize research and clinical applications of the basic science material through demonstrations of core concepts, use of research tools and demonstrations of physician/patient interactions.

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COMMUNITY INVOLVEMENT: A CURRICULAR STRATEGY

Grisel Burgos, MS* *Clinical Skills Department, Carmen Hernandez, M.D., Community Program, Alvaro Perez, M.D., Institutional Research, Martha Garcia, M.D., Outcomes Learning Assessment. Escuela de Medicina San Juan Bautista, Caguas, PR 00725*

Escuela de Medicina San Juan Bautista is a Community–based Institution that has the pledged to prepare physicians with strong community awareness. The Community Research Course is offered as part of the preclinical training with the objective of exposing students to the community's dynamics. Different approaches were used to impact the Caguas population of all ages: a) "Knowing the Community activities": Assessment of community needs- Most prevalent conditions of a community and available community services (house-to-house questionnaires); visit to a Senior Center to join them in recreational activities; b) Health promotion and prevention (role as educator); Conferences/Lectures in environmental and personal hygiene, sexually transmitted diseases, common diseases associated with elderly health fair clinic including talks on Parkinson and Alzheimer disease, prostate and breast cancer, diabetes mellitus; and dengue; c) Community Clinics: hypertension and diabetes.

Students presented their results in a symposium for Caguas Municipality representatives, community leaders, and the Institution's community. They also documented their work in a portfolio, and was assessed by using a focus group interview, which revealed that the students' concept of the role of the physician as a community healthcare provider was modified and meaningfully increased the awareness of their role in the community. Community leaders were grateful for "being considered in the health care process for the first time". All the assessment results will be extensively discussed during the meeting.

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IMPLEMENTING AND EVALUATING AN EARLY CLINICAL EXPERIENCE LONGITUDINAL BLOCK FOR FIRST-YEAR MEDICAL STUDENTS

Tommie Farrell, M.D.[1], Betsy Goebel Jones, Ed.D.[1], and ***Kathryn McMahon Ph.D.[2],****, Departments of Family & Community Medicine1and of Pharmacology & Neuroscience [2], Texas Tech University Health Sciences Center, Lubbock TX 79430 USA*

Texas Tech School of Medicine is undergoing a curriculum redesign that is attempting to cultivate mentoring relationships and promote acquisition of self-directed learning skills. This led to the development and implementation of The Early Clinical Experience (ECE) in MS1 beginning in 2005. Students go monthly to Texas Tech ambulatory clinics, where they are mentored by a core group of faculty with special expertise and responsibility in teaching history taking and physical exam skills. The ECE gives students both patient care experience and familiarity with the health service team. Each 4 weeks, students are exposed to a different set of skills and objectives. To ensure the highest quality and to assess effectiveness, students were asked to complete an on-line instrument to assess ECE activities, faculty mentors, and clinic sessions, particularly to gauge how the ECE promotes self-directed learning and fosters mentoring relationships. 92 of 144 students completed the first instrument. Students gave the ECE overwhelmingly positive ratings. Particularly salient are students' agreement that the ECE provides an engaging opportunity for learning (92%), promotes self-directed learning (87%), and is relevant to their future careers (97%). Overall, students rated the ECE as 4.2 (out of 5). The ECE shows signs of meeting its goals for providing positive early exposure to patient care settings and encouraging self-directed learning.

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EFFECT OF A MIND-BODY MEDICINE SKILLS COURSE ON MEDICAL AND GRADUATE STUDENTS' PERCEPTIONS OF THEIR STRESS AND MINDFUL AWARENESS

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Purpose: This study compares the self-reported perceived stress and mindfulness awareness of 28 Physiology masters degree students in a complementary and alternative medicine program (CAM-MS) and 111 first and second year medical students (MEDS) at <institution> before and after an eleven-week Mind-Body Medicine Skills (MBS) course.

Methods: The MEDS were self-selected and screened by the course directors through a written essay in which the students described their interest in participating in the course. In contrast, the CAM-MS students were all required to take the course as part of their curricular requisites. An informal survey indicated that not all members of the CAM-MS group would have enrolled in the course had it been offered as an option. The students met each week, in groups of 10 with two faculty facilitators, for a two-hour group session in which they were introduced to various mind-body techniques: drawing, autogenic training, eating and walking meditations, several guided imageries, breathing, movement, and writing exercises. Two instruments were used to assess the students' psychological and attitudinal states before and after the Mind-Body Skills course: the ten-item Perceived Stress Scale (PSS)(J Health Soc Behav 24:385-396, 1983) and the fifteen-item Mindful Awareness Attention Scale (MAAS)(J Pers Soc Psychol.84:822-48. 2003),.
Results: Baseline scores on the MAAS were significantly lower ($P<0.01$) in MEDS (pre-mean 54.8; std. dev. 11.4) compared to CAM-MS students (pre-mean 61.8; std. dev. 11.4) prior to participating in the MBS course, but the PSS scores were not significantly different between the two student groups (pre-mean 16.3; std. dev. 6.4 versus pre-mean 14.2; std. dev. 6.2). Following the course, the MAAS scores were still significantly lower in the MEDS students ($P<0.05$), but there was no statistical difference between the student groups in the PSS scores. Both groups of students exhibited significant increases in MAAS scores ($P<0.05$ in the CAM-MS group and $P<0.001$ in the MEDS), and decreases in the PSS scores ($P<0.05$ in the CAM-MS group and $P<0.001$ in the MEDS). These changes represent a significant reduction of perceived stress and an increase in mindfulness awareness in both student groups.

Conclusion: Our findings support the notion that the Mind-Body Medicine Skills course can foster student self-awareness and self-care by enhancing their mindfulness awareness and reducing their perceived stress, even in graduate students required to take the course.

NOTES:

TEACHING MIND-BODY MEDICINE SKILLS GROUPS TO MEDICAL STUDENTS HELPS FOSTER MINDFULNESS AND SELF-AWARENESS AND REDUCES PERCEIVED STRESS

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Purpose: This study of 111 self-selected first and second year medical students at Georgetown University School of Medicine (during 2003-2004 semesters) explored the effects of an eleven-week Mind-Body Medicine Skills course on self-reported perceived stress, mindfulness and general attitudes about their health and well-being. The students met each week, in groups of 10 with two faculty facilitators, for a two-hour group session in which they were introduced to various mind-body techniques: drawing, autogenic training, eating and walking meditations, several guided imageries, movement, and writing exercises.

Methods: Three instruments were used to assess the students' psychological and attitudinal states before and after the Mind-Body Skills course: the ten-item Perceived Stress Scale (PSS)(J Health Soc Behav 24:385-396, 1983) the fifteen item Mindful Awareness Attention Scale (MAAS)(J Pers Soc Psychol.84:822-48. 2003), and a newly created 21-item survey instrument, the Mind-Body Skills Scale (MBSS).

Results: 70 students completed the PSS instrument both before (pre-mean 16.3; std. dev. 6.4) and after the course (post-mean 13.1; std. dev. 5.8), with the mean paired difference equal to -3.2 (95% CI: -2.1 to -4.2:$P < 0.001$), indicating a significant reduction in the scores of the Perceived Stress Scale. 102 students completed the MAAS instrument before and after the course (pre-mean 54.8; std. dev. 11.4) and (post-mean 61.0; std. dev. 11.3) with a mean paired difference equal to 6.2 (95% CI: 9.00 to 3.44: $P < 0.001$), indicating a significant increase in the Mindfulness Awareness Attention Scale. Results from the MBSS survey instrument showed a trend towards greater awareness, increased empathy toward their classmates, decreased perceived stress, and a better appreciation for effects of mind-body techniques.

Conclusion: Our findings support the notion that this Mind-Body Medicine Skills course may help advance several desirable educational goals, such as increased empathy and mindfulness, in addition to reducing students' perceived stress in medical school.

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