WINDSOR UNIVERSITY
SCHOOL OF MEDICINE

Windsor Insight

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CONGRATULATIONS OUR NEW CLASS OF PHYSICIANS

"GLIMPSES OF THE WHITE COAT CEREMONY"

WHATS INSIDE

WINDSOR WELCOMES OUR NEW FACULTY

By Bikramajit Singh Saroya

Dr Sanjib Das

Education
MBBS, Netaji Subhash Chandra Bose Medical College , RDDV University , India 1996
Residency, Medical Pharmacology, MGM Medical College, DA University ,India 2000
PGDHA , AHERF, India 2006
Fellowship in Diabetes, The Royal Liverpool Academy, UK - ongoing

Dr Das started his teaching career as Assistant Professor in Pharmacology at RDGMC, Ujjain. He was promoted to Associate Professor at PCMS & RC, Bhopal, India where he served for 3.5 years. Apart from teaching post-graduate and undergraduate medical students he was actively involved in research and has extensive experience in neuro and cardiovascular pharmacology. He first came to the Caribbean in 2009, serving as Associate Professor and Course Director of Pharmacology at Medical University of the Americas (MUA),Nevis. He is fluent in English, Hindi and Bengali. His interests include travelling, cooking and adventure sports. He is a very passionate teacher an avid soccer fan. He joined the Windsor family in January 2016.

Mr Safeer Khan

Education
Graduation, Rajiv Gandhi University of Health Sciences, India, 2002
MSc.(Med.) Anatomy , Kasturba Medical College, Manglore, India.
Member National M.Sc Medical Teachers Association (NMMTA).

Mr Khan started his teaching career as a lecturer in Anatomy at Srinivas Institute Of Medical Science And Research Centre, in 2010. In 2011 he moved to, Dali University, Yunnan Province, China as Assistant Professor . He returned to India briefly to work at The International Medical School before joining Jinan University, International Medical School, China as Foreign Expert. He has a wide repertoire of skills and in his five years of teaching he has taught medical anatomy, Embryology, Histology ,genetics, and Neuroanatomy. Apart from teaching, he has extensively research experience and has published various articles in anatomic morphology and embryology. His interests include exploring new cultures, playing chase and snooker, listening to different kinds of music and reading. He joined the Windsor family in January 2016 as well.

Dr Samal Nauhria

Education
MBBS-Government Medical College, Patiala, India 2008
Residency -Pathology-MMIMSR, MM University, India 2015

After finishing his residency Dr Samal started his career as a consultant at a state of the art pathology laboratory in his home town Ludhiana. Before starting his residency he worked as a medical practitioner specializing is emergency medicine and intensive care. His has a wide range of expertise including surgical pathology specimens, hemato-oncology samples, fine needle aspiration cytology and exfoliative cytology. He has an avid interest in research in breast cytolomorphology, ovarian carcinoma, ameloblastoma and has published many articles in Indian and international journals. He is an extremely dedicated individual and loves to teach. His

WINDSOR REINVIGORATES ITS BIOMEDICAL RESEARCH AND RESEARCH EDUCATION PROGRAM

By Guri Tzivion

Biomedical research and research education are fundamental components of progressive adroit medical schools. Biomedical research aims at establishing the understanding of the cellular, molecular and physiological mechanisms underpinning human health and disease. Today's and more so tomorrow's successful doctors will be expected to incorporate new developments in the biomedical field in their practice as well as to contribute to the advancement of knowledge. Hence, Windsor undertook the mission of enhancing this discipline for the benefit of both its students and faculty.
The revitalization of the program is spearheaded and directed by Dr. Guri Tzivion, who brings invaluable biomedical research experience and training to Windsor. Dr. Tzivion was trained at the Hebrew University in Jerusalem in cancer and Immunology research, followed by a postdoctoral fellowship at Harvard Medical School and Massachusetts General Hospital in Boston, focusing on cancer and metabolic signaling research. He has a distinguished publication record, including publications in the leading scientific journal Nature, and is an internationally renowned expert in the field of cancer and metabolic signaling research. Dr. Tzivion held multiple faculty positions at US medical schools before joining Windsor, including the Karmanos Cancer Center at Wayne State University, Detroit and the University of Mississippi Cancer Center.
The mission of the Biomedical Research and Research Education Program is to provide Windsor's students and faculty a vibrant academic environment supportive of team-based education, with a focus on evidence-based medicine and advancing health care. The program is responsible for directing and supporting several graduate courses aimed at providing Windsor's students the tools and opportunities for conducting biomedical research and writing scientific articles. It also provides the faculty with the environment and support for establishing and maintaining research programs and student mentoring opportunities. The program is supported by a standing "Research and Research Education Committee" that helps in coordinating the program's diverse missions.

Key activities initiated by the program or planned for initiation during this academic year include:
1. Establishing a biomedical research course for MD2 and MD3 students entitled: "Principals of Biomedical Research".
2. Establishing a research-focused Journal Club for MD2 students.
3. Revising and enhancing our MD 6-10 Research Rotation course.
4. Establishing the "Windsor Research Seminar and Grand Rounds Series".
5. Initiating Windsor's Research Day.
6. Enhancing the scope of Windsor's Adjunct Professorship Program and recruiting internationally renowned researchers to the program.
7. Providing a mechanism to support faculty in developing research and scholarity activities.
8. Supporting the research enterprise at Windsor through establishing collaborations with outside institutes and identifying funding mechanisms.

The following are the members of the Research and Research Education Program:
Dr. Guri Tzivion, PhD, Chair
Ms. Avonda Moore, Secretary
Dr. Soumitra Chakravarty, MD
Dr. Vivek Joshi, MD
Dr. Bikramajit Singh Saroya, MD
Dr. Samuel Taiwo Alawode, MD
Dr. Fatai Oluyadi, MD
Dr. Kusai Salhanie, MD
Dr. Abiodun Mark Akanmode, MD
Dr. Uchechukwu E. Amaefuna, MD
Dr. Baby Maloor, PhD

ZIKA VIRUS PANDEMIC

Zika virus is a member of the virus family Flaviviridae. it was first isolated in 1947 in the Zika forest of Uganda. Zika virus is related to dengue, yellow fever, Japanese encephalitis and West Nile viruses. In 2013 and 2014 the virus spread eastward across the Pacific Ocean and had reached pandemic levels in Central America by 2015. In January 2016, the U.S. Centers for Disease Control and Prevention (CDC) issued travel guidance on affected countries, including the use of enhanced precautions, and guidelines for pregnant women including considering postponing travel. St. Kitts and Nevis have no suspected or confirmed cases at this time. However, there are confirmed cases in the following Caribbean islands: Aruba, Barbados, Bonaire, Curacao, Dominican Republic, Martinique, the Commonwealth of Puerto Rico, a U.S. territory, St. Martin, U.S. Virgin Islands, and Jamaica.

How do you get it?

- Through mosquito bites

Zika virus is transmitted to people primarily through the bite of an infected Aedes species mosquito (A. aegypti and A. albopictus).

⇒ These mosquitoes typically lay eggs in and near standing water in things like buckets, bowls, animal dishes, flower pots and vases.

⇒ These are the same mosquitoes that spread chikungunya, dengue and are aggressive daytime biters. They can also bite at night.

⇒ Mosquitoes become infected when they feed on a person already infected with the virus. Infected mosquitoes can then spread the virus to other people through bites.

- Rarely, from mother to child

⇒ A mother already infected with Zika virus can pass on the virus to her fetus during pregnancy and time of delivery.

⇒ To date, there are no reports of infants getting Zika virus through breastfeeding. Because of the benefits of breastfeeding, mothers are encouraged to breastfeed even in areas where Zika virus is found.

⇒ However, there have been cases of Guillain-Barre syndrome reported in patients following suspected Zika virus infection. The Brazil Ministry of Health is also investigating the possible association between Zika virus and a reported increase in the number of babies born with microcephaly. Due to concerns of microcephaly associated with maternal Zika virus infection, fetuses and infants of women infected with Zika virus during pregnancy should be evaluated for possible congenital infection and neurologic abnormalities.

- Through infected blood or sexual contact

⇒ Zika virus can be spread by sexual intercourse..

⇒ In known cases of likely sexual transmission, the transmitter had Zika symptoms or developed symptoms within a few days..

⇒ The virus is present in semen longer than in blood.

Prevention

⇒ Wear long-sleeved shirts and long pants.

⇒ Stay in places with air conditioning or that use window and door screens to keep mosquitoes outside.

⇒ Sleep under a mosquito bed net if you are overseas or outside and **use mosquito repellants.**

Use an insect repellent with one of the following active ingredients:

Active ingredient Higher percentages of active ingredient provide longer protection	Some brand name examples* (Insect repellents may be sold under different brand names overseas.)
DEET	Off!, Cutter, Sawyer, Ultrathon
Picaridin, also known as **KBR 3023, Bayrepel**, and **icaridin**	Skin So Soft Bug Guard Plus, Autan (outside the United States)
Oil of lemon eucalyptus (OLE) or **para-menthane-diol** (PMD)	Repel
IR3535	Skin So Soft Bug Guard Plus Expedition, SkinSmart

Incubation period

Although not fully known, symptoms appear between 2 to 7 days of being bitten by an infected mosquito.

Symptoms

⇒ About 1 in 5 people infected with Zika virus become ill (i.e., develop Zika).

⇒ The most common symptoms of Zika are fever, rash, joint pain, or conjunctivitis (red eyes). Other common symptoms include muscle pain and headache. The illness is usually mild with symptoms lasting for several days to a week.

⇒ People usually don't get sick enough to go to the hospital, and they very rarely die of Zika.

⇒ Zika virus usually remains in the blood of an infected person for about a week but it can be found longer in some people.

Diagnosis

⇒ The symptoms of Zika are similar to those of dengue and chikungunya.

⇒ See your healthcare provider if you develop the symptoms described above and have visited an area where Zika is found.

⇒ If you have recently traveled, tell your healthcare provider when and where you traveled.

⇒ During the first week after onset of symptoms, Zika virus disease can often be diagnosed by performing reverse transcriptase-polymerase chain reaction (RT-PCR) on serum. Virus-specific IgM and neutralizing antibodies typically develop toward the end of the first week of illness.

Treatment

⇒ There is no vaccine to prevent or specific medicine to treat Zika infections.

⇒ Treat the symptoms:

◊ Get plenty of rest.

◊ Drink fluids to prevent dehydration.

◊ Take medicine such as acetaminophen (Tylenol®) to relieve fever and pain.

◊ Do not take aspirin and other non-steroidal anti-inflammatory drugs.

◊ If you are taking medicine for another medical condition, talk to your healthcare provider before taking additional medication.

- If you have Zika, prevent mosquito bites for the first week of your illness.

◊ During the first week of infection, Zika virus can be found in the blood and passed from an infected person to a mosquito through mosquito bites.

◊ An infected mosquito can then spread the virus to other people.

- For more information and for status updates, please refer to the Pan American Health Organization's website at www.paho.org as well as the World Health Organization at www.who.int

References

All the above information and pictures were taken from the CDC website.

CORE COMPETENCIES IN BASIC AND CLINICAL SCIENCES

By Andy Vaithilingam, Bikramajit Singh Saroya

(From CAAM-Hp IS)**The accreditation process requires educational programmes to provide assurances that their graduates exhibit general professional competencies that are appropriate for entry to the next stage of their training, and that serve as the foundation for life-long learning and proficiency in patient -centered medical care.**

Accreditation agencies, expect medical students to engage in studies and training, which is clearly based on the core competencies. This article describes the six core competencies, as outlined by Stanford University. I have made suggestions on how these competencies may be met in various courses within the MD program at Windsor University. Several professors are already integrating theses competencies by using case studies, student presentations, small group discussions and clinicopathological correlates (CPCs) in their courses. Faculty all over the world, especially in basic sciences, have wrestled with establishing a relationship between these essential competencies and teaching their subject--a fair concern. The method of teaching is flexible, and within the purview of the Department Chair and individual instructors. Should any educator within the Windsor organization require further clarification or assistance on implementation of these competencies, I would be glad to provide guidance. There are several physician teachers at Windsor, who have a good understanding of these competencies and have implemented them in their respective courses and I would be glad to put you in contact with them.

Competencies can be woven into any medical school's curriculum starting as early as semester one. These are indeed, intuitive in that they formally describe a "common sense" approach to patient-centered healthcare. The current curriculum design is founded on the guiding principle that student-centered teaching is conducted in such a way, that it would ultimately lead to patient-centered healthcare. This process is informed by each of the following competencies:

1) Patient Care

Ironically, we easily forget the fundamental principle of medical practice which is addressed by this competency. It starts with simple courtesy, kindness, and respect for one's patient, through addressing the troubled individual by their correct name; being aware of their age, ethnicity, religious/social/cultural beliefs and practices (this information will also, significantly influence your plan for care). It is very easy for medical educators, universally, to focus most of their attention on the acquisition of medical knowledge that we all tend to forget the fact that our patient is a human being first and is putting his well being in our hands and he/she deserves our respect and care. Reference to this in all courses makes it known that we as educators are guiding our students to understand the utmost significance of "humanizing" our craft of medical practice. A colleague once told me, after years of practice "The patient knows their history, and symptoms the best." This vital information, in part may be obtained optimally when one becomes adept at this competency.

Students must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

In many clinical rotation student evaluations, this competency is addressed and carries significant weightage. Many of the Pre-clinical courses such as Introduction to Clinical Medicine address this through the use of Objective Structured Clinical Examinations (OSCE's). These courses not only test a student's clinical skills, but also evaluate the student's empathy for patient concerns. Ethics courses address many of the issues surrounding compassion for cultural differences and appropriate considerations given during different social settings as well. In basic science courses, such as Pharmacology and Pathophysiology, the use of case studies throughout the curriculum may facilitate the development of decision making skills for a wide variety of scenarios. Patient-care inherently denotes use of our medical knowledge, accurately, appropriately, efficiently, and above all, compassionately. This competency can be continued into other courses **(horizontal & vertical integration)** by aiding the student in obtaining a focused history and performing a focused physical examination (ICM). This in turn would lead to a good understanding of the possible differential diagnoses and investigations to be ordered (Microbiology?, Immunology?, Histopathology?, Enzymes?, Renal/Liver Function? etc). Subsequently the student can formulate a treatment plan (pharmacology) keeping in mind the patient's personality, state of mind, optimum time for their benefit and support structure of the patient and his/her family. (Behavioral Science, Ethics, Community Medicine). The student would also be able to counsel and advise the patient regarding latest and upcoming treatment modalities and methods based on evidence-based medicine (Biomedical Research?, Continued Medical Education?)

2) Medical Knowledge

Students must demonstrate knowledge of established (all courses MD1-10) and evolving biomedical, clinical, epidemiological (Biomedical Research, Epidemiology courses) and behavioral sciences (Ethics), as well as the skill set of applying this knowledge to patient care (see "Patient Care", above).

This competency is easily addressed and evaluated. The USMLE Step 1 and Step 2 CK exams are the gold standard to evaluate medical knowledge. In the basic sciences, the use of case studies and clinicopathological correlates(CPCs) enables the students to apply this knowledge to the clinical setting.

In order for the student-physician to analyze the "whole" patient (big picture) for accurate and efficient implementation, knowledge must be stored in an integrated and meaningful format. This warrants the implementation of a horizontally & vertically integrated curriculum.

3) Interpersonal and Communication Skills

Students must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families and health professionals. As physicians we are expected to - communicate effectively and appropriately with patients across a broad range of socioeconomic and cultural backgrounds; communicate effectively with physicians, other healthcare professionals/agencies; work effectively as a member or leader of a healthcare team/professional group and maintain comprehensive, timely, and legible medical records.

Interpersonal skills refer to how the "future" physician presents themselves (demeanor and "spirit" of interaction) to their colleagues and patients. This competency represents the foundation on which bedside manner and professionalism is developed. The effectiveness with which information is relayed to the patient and coworkers ultimately determines the outcome of the patient.

In the Pre-clinical courses, communication skills can be addressed through various modalities such as presentations, small group discussions, OSCEs and journal clubs. Students in my classes are encouraged to debate/discuss with me as long as they communicate their thoughts, clearly, comprehensively and respectfully. Making students write SOAP notes/case summaries as part of the ICM course is another method of addressing this competency (written communication).

4) Professionalism

Students must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Students are expected to demonstrate: compassion, integrity, and respect for others; responsiveness to patient needs that supersede self-interest; respect for patient privacy and autonomy; accountability to patients, society and the profession and sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation. This competency could be fulfilled by the following methods:

In the basic science curriculum, ethics is taught either as a separate subject or as a component of the Behavioral Science course. OSCE's are often developed integrating components of professionalism such as hand washing, greeting the patient, addressing the patient respectfully, making him/her comfortable in the exam room, respecting privacy by proper draping and asking permission for examination, explaining procedures beforehand etc.

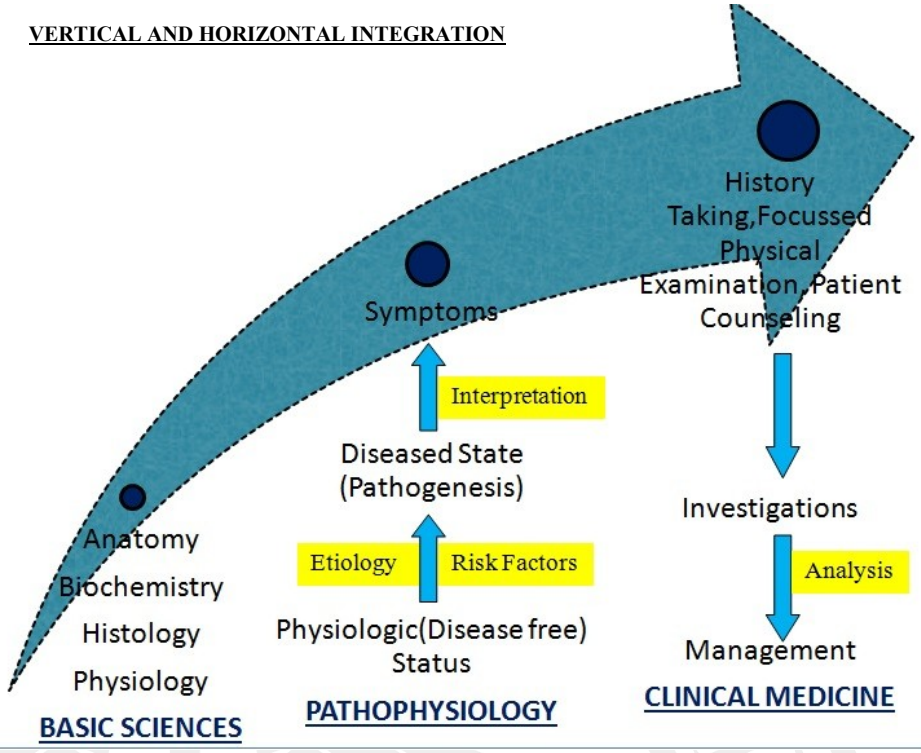
In the clinical curriculum, professionalism is an inherent component of any student/patient interaction. Student evaluations lay heavy emphasis on this competency and this can be addressed in all courses of the MD program through discussions and presentations. For example: Case-based discussion, journal club discussion, active engagement of students in class, class presentations followed by discussion etc are some of the modalities that can be used.

5) Practice-Based Learning and Improvement (PBLI)

Students must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. Students are expected to develop expertise and habits to be able to meet the following goals : identify strengths, deficiencies, and limits in one's knowledge and expertise (self-assessment and reflection); set learning and improvement goals; identify and perform appropriate learning activities; systematically analyze practice using quality improvement (QI) methods, and implement changes with the goal of practice improvement; incorporate formative evaluation feedback into daily practice; locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems (evidence-based medicine); use information technology to optimize learning; and, participate in the education of patients, families, students, Students and other health professionals.

Life-long-learning is a concept which permeates basic and clinical sciences. In the basic sciences, faculty continues to explore information via latest technology and assimilate scientific evidence. Formative evaluations such as quizzes, CPC assignments, concept maps in the basic sciences, and mid-rotation feedback in the clinical sciences are valuable components of this competency.

VERTICAL AND HORIZONTAL INTEGRATION



6) Systems-Based Practice (SBP)
Most basic sciences faculty have difficulty relating this competency to their subject, again a fair concern. As we understand the meaning of this competency, better, relation to one's courses may become self-evident. **Students must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.** An MD program is a collection of particular courses basic sciences and clinical sciences which **are interrelated vertically**. Simply put one, may suggest that the following courses inform the specialties accordingly:

Throughout all such courses students are in fact functioning within a system. An MD program would not be effective, if courses are "disconnected" from each other.

Students are expected to: work effectively in various health care delivery settings and systems relevant to their clinical specialty; coordinate patient care within the health care system relevant to their clinical specialty; incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate; advocate for quality patient care and optimal patient care systems; work in interprofessional teams to enhance patient safety and improve patient care quality; and participate in identifying system errors and implementing potential systems solutions.

In the clinical setting, it is critical for students to understand that they operate in a system with a variety of different services (cardiology, orthopedics, neurology etc) which can supplement patient care. In the basic sciences, discussions on topics such as Medicare, introduction to cost awareness and working in an interprofessional setting should be emphasized as a part of the ICM curriculum. OSCE's can be developed to deliver the requirements of this competency. For example, an OSCE can evaluate a student's performance on discussing the risk-benefit analysis of gall bladder removal surgery.

I request and challenge all the educators in the Windsor family to send in methodologies which you are currently (or plan to) use in your teaching to fulfill the above mentioned competencies.

For example:
Subject: Physiology:
Topic: Cardiac Function (MI)
Competency: Patient Care

Suggested Teaching Methodology: Case-discussion, Student presentations: Combining medical knowledge learned in anatomy (blood supply of the heart); physiology (stroke volume, ejection fraction etc...); biochemistry Labs (troponin, CK-MB etc....); histology (intercalated disc); pathology (atherosclerosis, thrombus formation etc…) with patient communication skills, learned in ICM and formulating a management plan (pharmacology).
Academic achievement:
1) Addresses Competencies;
2) Horizontal integration with other courses in same semester
3) Vertical integration with courses in previous semester

A UNIQUE LOOK AT PATHOLOGY AND TEACHING MEDICINE - INTRODUCING 'THE PATH MAN'

By Fatai Oluyadi

The Medical Profession like any other profession has made tremendous strides in the past 200 years. These changes ensure a constant re-evaluation and re-invention of the field by its professionals in order to evolve with the changing times and stay relevant. Numerous changes are evident in various aspects of medical practice including surgical and diagnostic procedures, treatment approaches, ethical considerations etc. An aspect of the medical field that has been most resistant to this level of change and perhaps is more important than all the ones mentioned above is "medical education".

One can argue that perhaps the most challenging thing for a student about being in medical school is the amount of information needed to absorb, understand and retain. This can be truly daunting because, a medical student is expected to be an efficient anatomist, physiologist, biochemist, microbiologist, pharmacologist and pathologist all at once. Understanding these challenges then suggests the need to constantly evaluate the efficiency of the ways we teach medicine and also initiate discussions on creating more efficient approaches and methodologies to medical education. We often forget that the fundamental structures and perspectives that students build through their exposure to these sciences will shape their entire lives as medical professionals and also determine the possibility of producing physicians that would possibly take the science and practice of medicine to newer heights. The goal should be to produce doctors, in whose minds the engine of medical sciences works in more dynamic and integrated ways than the current practice.

Although the "lecture" mode of delivery of medical education has through the years proven to be the most consistent, rapid societal changes and technological advancements indicate the necessity of carefully thought out approaches which will enhance and complement the historically tested modes of delivery.

"Tell me and I'll forget; Show me and I may remember; involve me and I will learn"

This growing perspective about teaching has generated multiple methodologies, tested and untested, all of which we group under the umbrella of 'active learning', using examples such as class discussion models, flipped classroom, think-pair share, concept maps etc. These active learning methodologies cannot be used all at once. It is important as medical educators to carefully select active learning tools that are most applicable to medical education. For example, a concept map is a graphic tool for organizing and representing knowledge. It is often drawn as a diagram that depicts suggested relationships and associations between concepts. It is particularly useful in medicine, as it helps establish relationships between numerous physiologic processes that underlie various pathological outcomes unique to different diseases. It can also be used to structure infectious agent groups, depicting their unique characteristics similarities, and various pathological outcomes. Drugs used in the treatment of various disease conditions can also be efficiently grouped via concept maps depicting similarities and differences in their mechanism of actions, clinical uses and side effects e. t. c. The use of these concept maps will facilitate integrative learning especially in students who have the natural ability to

learn visually.

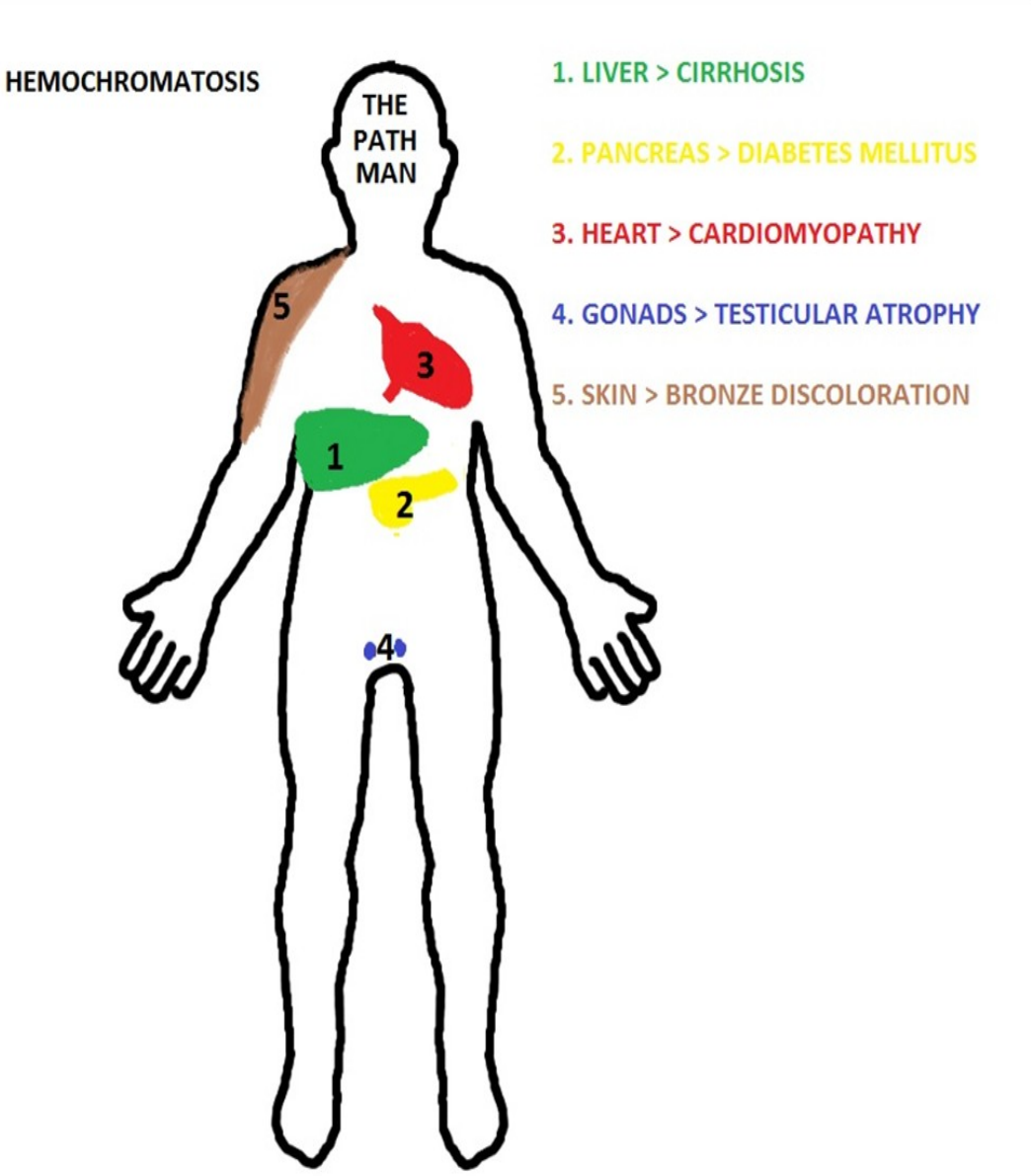
The main aim of this article is to emphasize the importance of visual learning and how medical education methodologies can harness the potential of visual learning and incorporate the other sensory modalities involved in cognition at the same time. It will be wrong to assume that all students learn the same way. However, efforts must be made to discover the most common and beneficial methods of learning that apply to medical education in order to specifically channel the potential of each student appropriately. This individualistic approach to medical education is lacking in most of our institutions.

I think, to understand the most efficient ways that students learn, we have to analyze the way humans think. When asked what our languages are, we would proudly say English, French, Arabic, Hindi, and Urdu; however, some would argue that the true human language is imagination through multiple sensory associations such as images, sounds, colors, and numbers. Let us consider an example Imagine a scenario where one is asked to think of a piece of information such as the word 'orange'. On the mention of the word 'orange' we would most likely recollect a picture of an orange as a fruit with the shape and color in our mind rather than 'O R A N G E' the letters that spell the word . This phenomenon suggests that most of us think in images, enhanced by other sensory associations as the ones already mentioned above.

THE PATH MAN

The path man is a graphical representation of medical information on a familiar landscape of the human body. The different organ system involvement of pathologic processes depicts the symptomatic associations of the disease condition. I hope most would agree that the main reason why we learn medicine is to recognize patterns of disease conditions and treat appropriately. How about having the ability to see these diseases in a flash, with the usual multiple systemic involvements and associations.

The path man uses a caricature/amateur drawing of the human body in the frontal view depicting the different organ system involvement of the disease with color codes and numbers. The likes of this description may have been seen in some other sources, however not many students have been told of its use as a tool to create their own catalogue of flash images of diseases and their organ/ system involvements. It is important to note that the cognitive benefit of this pathology learning tool is not only seen with its use of the visuospatial sensory modalities of cognition, but also the use of the verbal/ auditory and kinesthetic sensory modalities as well. In making this diagram, you involve your picture memory (converted from texts); you speak it out in the drawing and then use the motor coordination of holding the pen to achieve your goal, ensuring the incorporation of all the above mentioned modalities. Making the path man involves picking a disease condition, drawing an empty human body outline and then inserting images of the organs involved in the said disease condition, numbering the organ involvements and possibly color coding them. The List of the organ involvements can then be made on the side of the image with matching symptomatic outcomes. An Example is shown below.



'The Path man' image above shows the different organ involvements of Hemochromatosis. Different disease conditions and their multi-organ involvements can be demonstrated using 'The Path Man'.

ENJOY!!!

DEPRESSION AND SUICIDE IN THE MEDICAL PROFESSION -A GROWING CONCERN!

By Rachel Pierre

As future physicians and the pillars of society, it is our inherit duty to provide help, support and advise to the sick and needy. It is extremely unfortunate that we, as providers, ignore our own needs and mental state, which has lead to a rise in suicide and depression among physicians. Through this article I want to discuss this growing problem, its causes, its manifestations and simple things which can be done to de-stress and avoid low mood.

Over the last decade researchers have observed an alarming rise in the number of suicides and incidence of depression among physicians. A research study conducted in 2013, demonstrated that close to one third of US physicians are depressed[1]. In 2011 alone around 400 physicians have committed suicide in the United States[2]. Similar statistics have been observed in other parts of the world as well, with physicians having a 15 to 20% higher incidence of suicide compared to the general population[3].

As expected depression has been recognized as the most important risk factor for suicide[2]. Other risk factors commonly encountered in the medical field include stress, excessive workload ("spent" or "burnout"), constant pressure to perform, long work hours and failure to cope. In this age of technological advancement, awareness and ease of access to information the levels of

expectations from physicians has exponentially increased. Along with that the newer generations being less and less tolerant is not helping. It was establish that the rate of burnout in Paediatric residency is 74%[3]. These kind of numbers indicate a serious problem and warrant action on our part as physicians and future physicians to make changes in the existing ways and devise methods and techniques to help us and our peers better deal with and minimize the stressors which result in depressed mood. Another observation made by researchers is that physicians tend to internalize their emotions [4]. Since the beginning of medical career we are trained and taught to be strong to support others and show no weakness. As a result, the ones that are suffering do so in silence. Physicians are humans as well, ''they need help and support too''.

As future doctors it is important that we recognize the signs of depression and get help. Some of the alarm signs are lack of interest, low energy, inability to concentrate, feelings of guilt, sleep disturbances and a changes in appetite[5]. It is important to remember the people you started with are mostly likely the ones you will continue with. So medical students should lookout for their friends and colleagues as well. This kind of mindset actually promotes a friendly atmosphere and helps develop the skill of caring which ultimately is a quality that every physician should posses.

For my colleagues at Windsor I would like to specially emphasize this point as we are all away from our families and during the time we spend on the island of St - Kitts, we can help each other like family members do. The sleepless nights, the huge syllabus, the stress of quizzes and exams -- all of these are can be made easier and actually fun if we all support and stand by each other. We have been blessed to have Dr Williams here at Windsor who is a board certified in Psychiatry and Public Health. Apart from that every student is assigned a faculty mentor . If at all anyone has trouble coping our mentors and very empathetic and compassionate towards our problems. they have gone through the whole journey and understand our felling well. Do not hesitate to ask for their help.

Some other things to avoid stress is keeping up with your hobbies. It is universally known that in order to keep one's mind fresh sports and outdoor activities are extremely helpful. " A healthy mind resides in a health body". So make it a point that you exercise or play sports regularly. At the same time I would like to mention that every individual is different and everyone has different likes and dislikes. So if sports is not your cup of tea then spend an afternoon on the beach, go for a hiking trip, take a swim every now and then, have a few drinks on the strip, watch a movie, get together with your friends and play cards, read a book, go for a walk etc. the point being that we all need a break to rejuvenate.

On a more personal note, what I like to do is every few weeks I like to have a ''Me'' day. Have a day selfishly devoted to you. It is crazy to think like that because from the moment we get up to the moment we unwillingly put our head to the pillow, each minute is on a schedule. So going wild for one day is unrealistic. However how will you manage to integrate information when not only your body is tired but your mind as well?

These suggestions are far from being enough to prevent a troubled mind Professional help and, to some extent, medications might be needed as well. First and foremost, a physician needs to be observant of his patient and their environment; to see the unseen and to be able to treat them. Why not start by perfecting it among colleagues?

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LIQUID BIOPSY – A GROUND BREAKING WEAPON AGAINST CANCER

By Samal Nauhria, Bikramajit Singh Saroya

A major challenge in oncology these days is the unavailability of non invasive methods to screen, diagnose and monitor tumors. In today's age of personalized medicine, it is desirable to develop minimally invasive techniques which determine and analyze the molecular makeup of a patient's tumor. One such approach is liquid biopsy, which assesses the genetic makeup of a tumor from a biofluid sample (peripheral blood, saliva, etc).

Certain DNA fragments shed by tumors into the bloodstream can be used to screen for tumors thereby allowing us to catch them at an early stage. This will direct early antitumor therapy, monitor response along with early detection and explanation of development of resistance to common chemotherapeutic agents. Thus, in order to improve cancer morbidity and mortality development of such novel methods demands the interest of researchers and future physicians. Circulating tumor cells (CTC's) and cell-free circulating tumor DNA (ctDNA) which are the main sources of tumor DNA in the plasma have been extensively researched upon for development of non-invasive cancer testing[1,2]. The FDA has approved liquid biopsy, measuring intact CTC's as a prognostic indicator of overall survival[3,4]. It is well known that tumors are very dynamic and can acquire new mutations or change their dominant mutation pattern, especially after treatment. Hence, other potential applications include – early detection, measurement of minimal residual disease, analysis of resistance, in the setting of tissue unavailability, following tumor response and early detection of disease recurrence. Hereby we present a case which exemplifies the above indications.

A 74 year old, South Asian male who presented with abdominal pain, fatigue and weakness and weight loss underwent a colonoscopy which revealed an adenocarcinoma of the colon. After staging a molecular analysis he underwent surgical resection and adjuvant chemotherapy. On a follow up PET scan, a 2cm mass with stellate margins was detected in his lung, a year later after completion of chemotherapy. It was assumed to be a metastasis and he was started on chemotherapy again with capecitabine. Therapy seemed to have no effect on the mass and it kept increasing in size.

This lead to the opening up of the possibility of this mass being a new primary(lung tumor) or a non cancerous (tubercular) lesion. The idea of Liquid biopsy was suggested to the patient. Despite initial hesitation, due to the common belief that biopsy is the gold standard of diagnosis, the patient agreed to Liquid Biopsy given its simple and non invasive nature.

Result showed mutation burden of 4.6% of total cell free DNA which indicated an active primary lung carcinoma. Sensitivity analysis predicted a positive response to EGFR targeted therapies. Subsequently the patient was started on Gefitinib (EGFR inhibitor) and showed significant reduction in the mass at 4 weeks. A repeat liquid biopsy analysis at 5 weeks post starting Gefitinib, a negative mutation burden was reported.

This case exemplifies the importance of early detection of recurrence(in this case early detection of new primary tumor), non invasive and simplistic nature, chemotherapeutic sensitivity analysis-- guiding treatment and effortless follow up. Thus, the field of non invasive cancer diagnosis and follow up has high potential for development and can open up new avenues in Oncology. Modalities like liquid biopsy should be more enthusiastically explored.

"The Best Protection is Early Detection"

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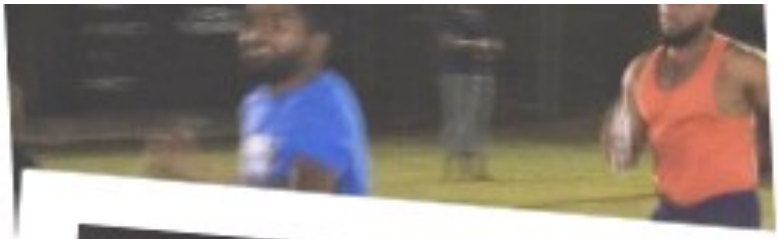
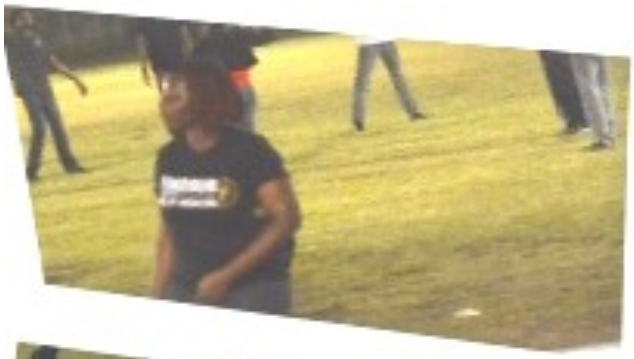
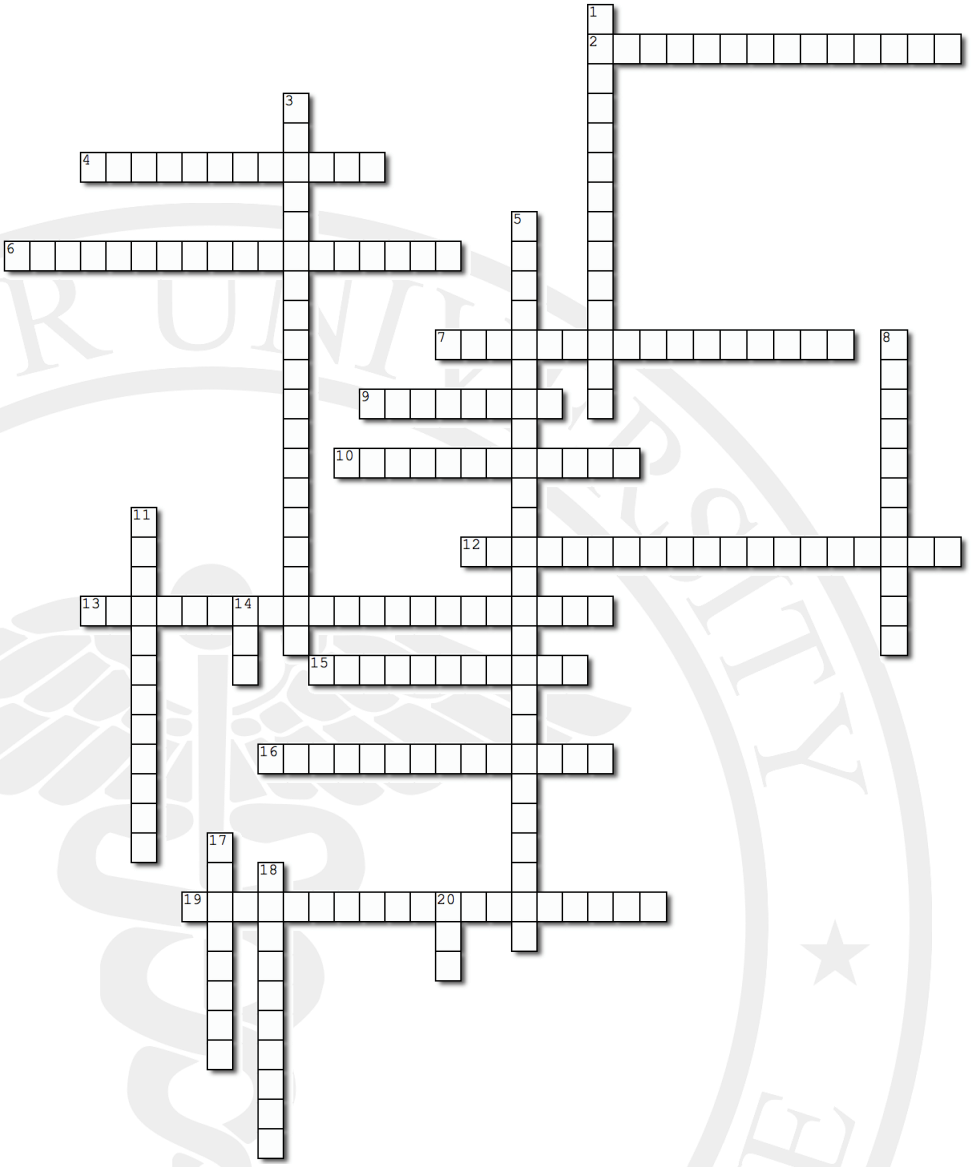
WINDSOR CELEBR





ATES SPORTS DAY!

CROSSWORD



Horizontal

2. This substance is used for sterilizing plastic materials in a laboratory setting.

4. A 25 year old pregnant woman goes to her gynaecologist for her 36 week checkup. She complains of light headedness when she goes to bed at night. In the office, her blood pressure is 120/70 mm Hg while sitting upright and 90/50 mm Hg while lying supine. This is a very general cause for the patient's hypotension.

6. A 27 year old patient presents to the clinic for an annual physical examination. On rectal examination, masses are palpated. Colonoscopy reveals adenomatous polyps located diffusely throughout the colon. Family history reveals that the patient's father passed away from colon cancer. A diagnosis of familial adenomatous polyposis is suspected. The patient asks how he got this; this is the inheritance pattern for the diagnosis.

7. A 2 year old girl who has been adopted from an impoverished family is brought to the clinic by her adopted parents. They are concerned because the child seems to be having trouble with her vision in low-light conditions. The vitamin most likely deficient in this child is absorbed by the gastrointestinal system using this type of transport mechanism.

9. A 34 year old African American woman presents to the physician with abdominal cramping that worsens during her menstrual period. The patient also says that her periods often last for more than 7 days. An ultrasound study shows multiple masses on the patient's uterus. This immunohistochemical stain would be the most appropriate for diagnosing this patient's condition.

10. A young ballet dancer in her early twenties, who is 5' 6" tall and weighs 95 pounds with BMI of 14.5 tells the doctor that she needs to lose another 15 pounds to pursue a career in dance. Physical examination is normal except for excessive growth of downy body hair. She also tells the doctor that she has not menstruated in more than 3 years as apart of her menstrual history. This patient has a high risk of developing this disease.

12. A 56 year old woman presents to her physician because of recent onset of chest pain and dyspnea. Six weeks earlier the patient suffered an MI. Her physical examination is remarkable for a friction rub over the fifth intercostal space in the midclavicular line together with an elevated jugular venous pressure. The patient is suffering from this myocardial complication.

13. A 17 year old girl who is being treated with antibiotics for recurrent sinus tract infections presents to the physician with intractable watery diarrhea and cramps. This organism is most often associated with the patient's condition.

15. A young male patient in his early twenties presents to your clinic complaining of sudden loss of vision in his right eye. Upon examination you find subluxation of the crystalline lens in the same eye. Upon auscultation of the chest there is a midsystolic click. Echocardiogram findings show a floppy mitral valve and dilated aortic arch. The patients brother and cousin have similar symptoms. A genetic defect involving this substance is most likely present in this patient.

16. A 78 year old retired female physician reports that she has been confused and forgetful over the past 10 months. She has difficulty sleeping, her appetite is poor, and she has lost 20 pounds. Further questioning reveals that her 18 year old dog died 10 months ago. This is the most appropriate diagnosis.

19. A 57 year old woman comes to the physician 6 weeks after returning from a trip to Greece. She has a fever of 38.8 degrees Celsius that rises during the day and decreases at night. She says that she feels tired and has lost weight. She mentions she enjoyed her vacation and trying local specialties such as fresh goat cheese. Her physical examination is notable for hepatosplenomegly and generalized lymphadenopathy. This organism is responsible for the patient's symptoms.

Vertical

1. A type of cell which appears on biopsy using light microscopy on tissue of patients with Hodgkin's Lymphoma

3. An 8 year old boy presents to the emergency department with a 2 hour history of vomiting after eating dinner at a seafood buffet. Arterial blood gas analysis reveals a pH of 7.50, a bicarbonate level of 34 mEq/L, and partial carbon dioxide pressure of 40 mm Hg. This describes the acid-base disturbance occurring in this patient.

5. A 75 year old woman arrives at the emergency department and states that her left arm is numb. She is diaphoretic. Laboratory studies show an elevated troponin I level and the patient is treated for an acute MI. A subsequent echocardiogram shows a wall motion abnormality of the posterior inter ventricular septum. Stenosis of this artery would most likely cause this condition.

8. A 55 year old man has a blood pressure of 150/95 mm Hg. If his hypertension remains untreated for years, this type of cellular alteration will result.

11. A previously healthy 31 year old woman is seen in the emergency department because of complete visual loss in her right eye. The patient's history is significant for a 3-day history of malaise, chills and fatigue alongside some oral pain secondary to her recent wisdom tooth removal. Ophthalmologic examination reveals a greyish white retina with an associated cherry-red spot, towboat hemorrhages and several segmented vessels with optic edema. Physical examination reveals a murmur consistent with mitral valve insufficiency. This condition is the cause of the patient's loss of vision.

14. Hemolytic disease of the newborn is caused by Rh blood group incompatibility requiring a maternal antibody to enter the fetal blood stream. This is the mediator of the disease.

17. A 45 year old man comes to his primary care physician complaining of back pain. On questioning, the patient indicates a recent history of polyuria, polydipsia, hypertension, and weight gain. X-ray of the spine shows an L4-L5 compression fracture. This is most likely elevated in the patient.

18. A 36 year old woman presents to the physician with amenorrhea. She reports an increase in her ring and shoe sizes over the past year, increased sweating and increased fatigue. Physical examination shows a blood pressure of 150/90 mm Hg and coarse facial features with mild macroglossia. This drug is appropriate for this patient.

20. A 20 year old college student presents to your clinic with a one week history of fever, headache, and painful exudative pharyngitis. Physical examination reveals enlarged cervical lymph nodes and hepatosplenomegaly. Laboratory studies show a WBC count of 15000 cubic mm with 55% lymphocytes. A heterophile antibody test is positive. This is the causative organism.

RECOMMENDED SOURCES BY TOP MEDICAL STUDENTS AT WUSOM

By Ripjit Singh

We all know the vastness of the Medical field and as a medical student it is nearly impossible to assimilate and retain the ocean of information and knowledge out there. In this day and age of cut throat competition it is extremely important to study "smart" along with studying "hard". Choosing the correct sources to study from is extremely crucial in this process.

I always had trouble figuring out what sources to use and which ones to avoid in the beginning of each medical semester. Everyone seems to have their own opinion about ideal sources. By the time I figured out which one worked best for me, it was already time for he first set of blocks.

Through this project, my goal was to increase communication amongst students in order to avoid wastage of crucial time looking for the best sources to use and rather utilize that time constructively. With the help of our Windsor faculty, I was able to get in touch with students who had performed exceptionally well in their respective classes. Almost all of the students I interviewed had a 90% grade on their final exam. I narrowed down my interviews to 2-4 students from each class (total of 14 students) and based on their responses I have compiled the following list of resources to use for each subject in each semester.

MD1

Anatomy

Netters Atlas/Flashcards
Kaplan Lecture Notes (www.kaptest.com)
High Yield Gross Anatomy, 5th Edition (Dudek; Louis)
University of Michigan Medical School Practice Anatomy Questions (www.med.umich.edu)
100 Concepts (especially for NBME)

Histology

High Yield Cell and Molecular Biology, 2nd Edition (Dudek)
Class PowerPoint Slides
Basic Histology: Text & Atlas, 11th Edition (Junqueira)

Embryology

High Yield Embryology 5th Edition (Dudek)
Kaplan (www.kaptest.com)
Human Embryology, 8th Edition (Singh; Pal)

MD2

Physiology

Class PowerPoint Slides (Check extra notes for each slide)
Kaplan (www.kaptest.com)
  Especially lecture notes
Physiology BRS, 6th Edition (Costanzo)
Physiology 3rd Edition (Costanzo)
Medical Physiology, 11th Edition (Guyton; Hall)
  Used as a reference
  Graphs and charts are extremely useful
Dr. Najeeb Lectures (www.drnajeeblectures.com)
  These videos are very time consuming so watch only if you have time
  First 2 weeks of class

Biochemistry

Class PowerPoint Slides
Kaplan (www.kaptest.com)
Read....Write...Revise...Repeat
Use a white board to rewrite pathways until you know them very well

Genetics

  Class PowerPoint Slides
  First Aid for the USMLE Step 1 2016 (Le; Bhushan; Sochat)
  Kaplan (www.kaptest.com)

MD3

Pathology I

Class PowerPoint Slides
Fundamentals of Pathology aka Pathoma (Sattar)
Robins and Cotran Pathologic Basis of Disease, 9th Edition (Kumar; Abbas; Aster)
  Used as a reference
Robins Basic Pathology 9th Edition (Kumar; Abbas; Aster)

Microbiology

Class PowerPoint Slides
Sketchy Micro (www.sketchymedical.com)
Clinical Microbiology Made Ridiculously Simple 3rd Edition (Gladwin)

MD4

Pathology II

Same as Path I
Dr. Najeeb Lectures (www.drnajeeblectures.com)
  Used to clarify
  These videos are very time consuming so watch only if you have time

Pharmacology

Kaplan (www.kaptest.com)
First Aid for the USMLE Step 1 2016 (Le; Bhushan; Sochat)
Pharmcards 4th Edition (Johannsen; Sabatine)

--Using the main textbook is highly recommended for each respective class if you have enough time to go through it without sacrificing studying time for other courses.
--If you do not have enough time to go though the entire recommended text, use it to clarify any confusions or concerns regarding complex topics. --It is wise to read the chapters on high yield topics or your weak areas.
--Doing a lot of practice questions is recommended for each and every class!

CROSSWORD ANSWERS

Horizontal

2. Ethylene-oxide
4. Vasodilation
6. Autosomal-dominant
7. Micelle-mediated
9. Vimentin
10. Osteoporosis
12. Dressler's-syndrome
13. Clostridium-difficile
15. Fibrillin-1
16. Pseudodementia
19. Brucella-melitensis

Vertical

1.Reed-Sternberg
3. Metabolic-alkalosis
5. Posterior-descending-artery
8. Hypertrophy
11. Endocarditis
14. IgG
17. Cortisol
18. Octreotide
20. EBV

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Dr Bikramajit Singh Saroya
Editor In Chief
bsaroya@windsor.edu