

The Integumentary System Module and How to Situate it in the Curriculum

I would like to express my thanks to Professor Shekhar Kumta and Professor Ng for giving me the opportunity to share these thoughts with you today. I am also very grateful to Miranda Chan of the OES who has allowed me to share my thoughts in print as a supplement to my talk. I am one of the growing numbers of people around the world who are looking into the post power point era of presentation and I shall be attempting a “cloud” presentation. I bought my own educational subscription to Prezi and this is my first live attempt to use it. In case things become frozen or there is an outbreak of vertigo in the audience at least there will be this written record to fall back on.

Before I launch into the topic there is some necessary preamble to give context to the ‘why’ and ‘what’ and also the ‘so what’.

Culture

I am a gweilo. A minority, subject at times to discrimination. It is part of the patch and relevant to this presentation. Apartheid, segregation, indeed wars have, are and will be a function of skin colour. I have raised the ‘elephant in the room’ before. Indeed when the ‘new’ curriculum was introduced by Clark Hazlett under Sydney Chung’s Deanship I somewhat timorously raised this at a curriculum retreat. The sub-text of the response was perceived by me; you are contract staff, create waves at your peril. Yes Gweilo’s can be sensitive too! But what about the reverse situation? Just this week the Times, a fairly balanced weekly, has looked at the rather idiotic move by the American Senate to put pressure on the Chinese government to raise the value of the yuan. Idiotic because it was already appreciating in value and the cultural response of the Chinese government is to do the opposite of anything the Americans try to force them to do. It is in this cultural context that I ask individuals not to feel on the defensive about what I have to say. Indeed, as a consequence of my excellent upbringing I shall give a pre-emptive apology for any perceived offence consequent upon the text and subtext of my talk as none is certainly intended.

Two minute presentations

The next aspect of this pre-amble is to acknowledge the input from our excellent final year medical students. I have incorporated a two minute project into my teaching week. Succinctly I have 17-18 students for one week every five weeks. Monday morning is a time to share an introduction to this wonderful and mysterious surgical specialty, Plastic Surgery, after which I divide the class up into groups of two and give each pair a topic. The assignment is to prepare four slides over the extended lunch break and to present the assigned topic in two minutes in the afternoon. We discuss each presentation and then the students have the opportunity of a few days to refine the style and content and represent the topics on the Friday afternoon. I am posting the presentations on the Department of Surgery intranet and labelling them “By students, for students”. Last year I did the same thing but asked individual students to present for one minute. Working in pairs seems to develop a synergy in knowledge processing and I have been very impressed by the results. So now I come to the subject of my presentation and immediately we find an anomaly.

Curriculum and Syllabus

How many of the teaching faculty appreciate the difference? Let me allow the students to explain. In simple terms the syllabus is the content i.e. what is taught. The curriculum is how it is taught

(and assessed). It is obvious then that before I find a place in the curriculum I need to find a place in the syllabus.

What is the difference between a Curriculum and a Syllabus

Fanny Yip Lai Ting
Eugenia Ma Pik Yu
Leung Ka Shing

Curriculum

- Educational experiences (Sessions on a subject clinical rotation/ clerkship, an entire training programme)¹
- 5 elements²
 - Aims, objectives, outcomes
 - Content statements
 - Teaching and learning activities
 - Assessment methods
 - Processes for monitoring and evaluation

Syllabus

- Lists/ scope of teaching material
- "what should be covered throughout a period of study"³
- A statement or outline of the subjects covered by a course of teaching; a programme of study. Also, a statement of the requirements for a particular examination⁴

Examples

Curriculum

Emphasis on communication and life-long learning skills

Skills in communication, ethics and self-learning (OT, library search, critical appraisal, evidence-based medicine) are learned in the first two years and reinforced throughout the undergraduate years.

Syllabus

Society see Doctor

	Past	Current
Social Status	• Top	• High, but not top
Role	• Much respected	• Less respected
Possible reasons	• Professional	• Professional
	• Scholar	• Superstar (good image)
	• No ads	
	Shifting Values : respect money more than professionalism	
	Ethical Issues e.g. corruption	

How do the medical school curricula differ between CUHK and HKU?

KH Cheng, YK Ho

The two towers

Objective of course same: training doctors.

- Clinical competency
- Safe doctors
- Involutive care
- Life long learning

Even the schedule are very similar.

Difference lies on the delivery scheme, the **curricula**.

- Integrated system-panel based vs problem based
- Practical, philosophical, social needs

Practical Difference: Delivery approach

	CUHK	HKU	Remarks
Concepts	Integrated-system-panel	Problem based	
Features	Dialectic lectures, with handouts & reinforcement courses	PBL sessions	CU: CUHK aims to cover the critical thinking and info searching skills
	More practical sessions (anatomy, histology, etc) in basic science	7 Elective sessions	CU: Structured SSAM provided HKU: Students plan their own SSAM
Assessment	Continuous assessment	Final exam	

Do we need such difference? Or what is missing?

- Philosophical difference/ Rationale:
 - Students' perspective
 - Curricula planners' perspective
- HKU: ? Critical thinking of knowledge
- CUHK: ? Safe guarding knowledge
- Missing link = bi-directional adaption
- Social needs: HA, society, doctors

Should all New Doctors in HK take the Same Licensing Exam?

Ling Kin Ho Steven
Lam Ka Fung William

Current System - Three Exams

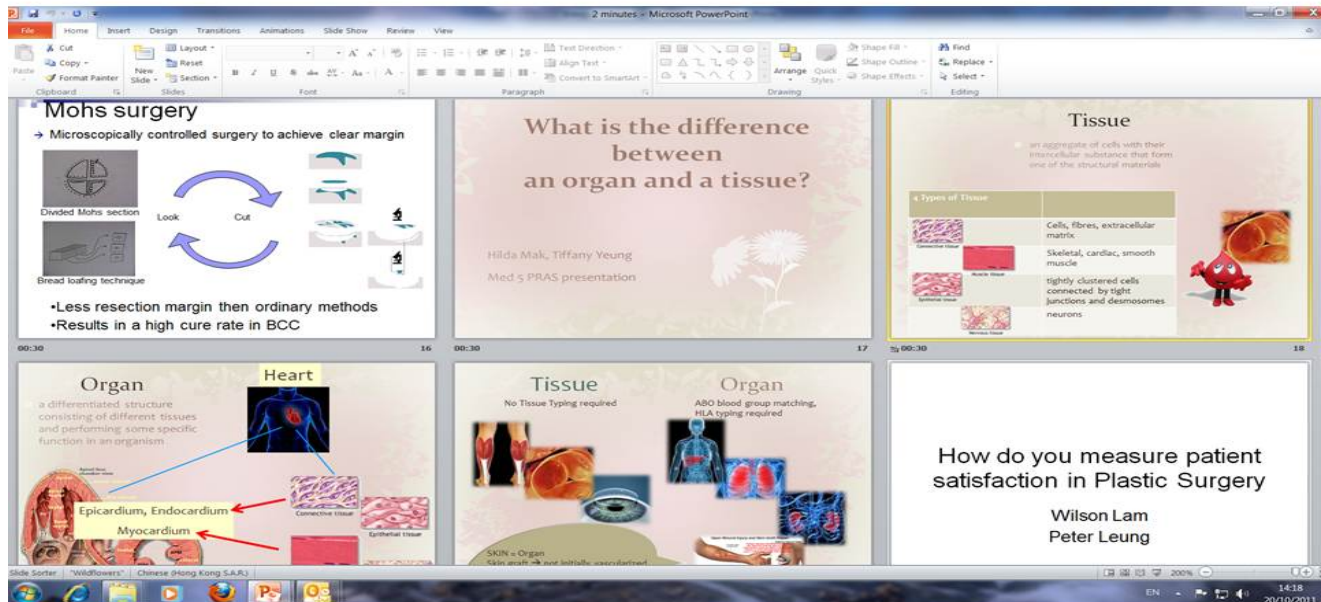
	HKU	CUHK	LMCHK
Passing Rate	>90%	>90%	<10%

近年執業資格考試成績

年份	HKU	CUHK	LMCHK
2000	90%	90%	10%
2001	90%	90%	10%
2002	90%	90%	10%
2003	90%	90%	10%
2004	90%	90%	10%
2005	90%	90%	10%
2006	90%	90%	10%
2007	90%	90%	10%
2008	90%	90%	10%
2009	90%	90%	10%
2010	90%	90%	10%

The Integumentary System

When the new curriculum was introduced I was very excited about the concept of system based panels. Do we all know what a system is? Indeed do we all appreciate such fundamental concepts as cells, tissues, organs and systems? Our final year students don't!



Not until they are directed to find out the difference. What about the teachers? How many think of the skin as being an organ, with multiple functions? A favourite series of questions that I ask our final year medical students go as follows: In the last four plus years have you heard about liver failure? Yes. Renal failure? Yes. Heart failure? Yes. Respiratory failure? Yes. Adrenal failure? Yes. Skin failure? What? Skin failure? No.

Our final year medical students have never been introduced to the failure of the largest organ in the body. The skin. How many of the teaching faculty can list eight principle functions of the skin? It is basic biology. Okay, you begin to see where I am going. What about the integumentary system? Do our final year students know what it is? Never heard of it. So what is the integumentary system?

The Integumentary System

Skin

Hair

Nails

Breasts

Subcutaneous Adipose Tissue

Breasts? Yes, these are the largest skin glands. Basic embryology.

Curriculum aka Syllabus Design

It is interesting that thus far I have not found a single medical school in the world, where there is a systems based approach, that specifically contains the integumentary system as such. That is not to say that no medical school incorporates this into the teaching programme, I just haven't found an example. I was looking for pictures to emphasise this and yes I have one of the elephant in the room to depict the lack of awareness but for the lack of content I was searching Google images for "yawning chasm" and "deep crevasse" and lo and behold came up with Elizabeth Hurley. I debated about whether I should include the image in my presentation. I know Dean Fok tends to a conservative view but heck, we are all adults here and what a wonderful example of integumentary system glands. And yes, one of those eight principle functions of the skin? Psycho-socio sexual. We are in the business of training doctors after all and we need to be open minded, non-judgemental and accept humanity in all its forms. But back to the point. I asked our medical students to look at the HKU systems panels, we find it in Professor Ip's slides in "the cloud", no integumentary system.

Medical Curriculum Design **The Experience of** **the University of Hong Kong**

Professor Mary Ip
Associate Dean (Education)



Faculty of Medicine
The University of Hong Kong

Curriculum Structure

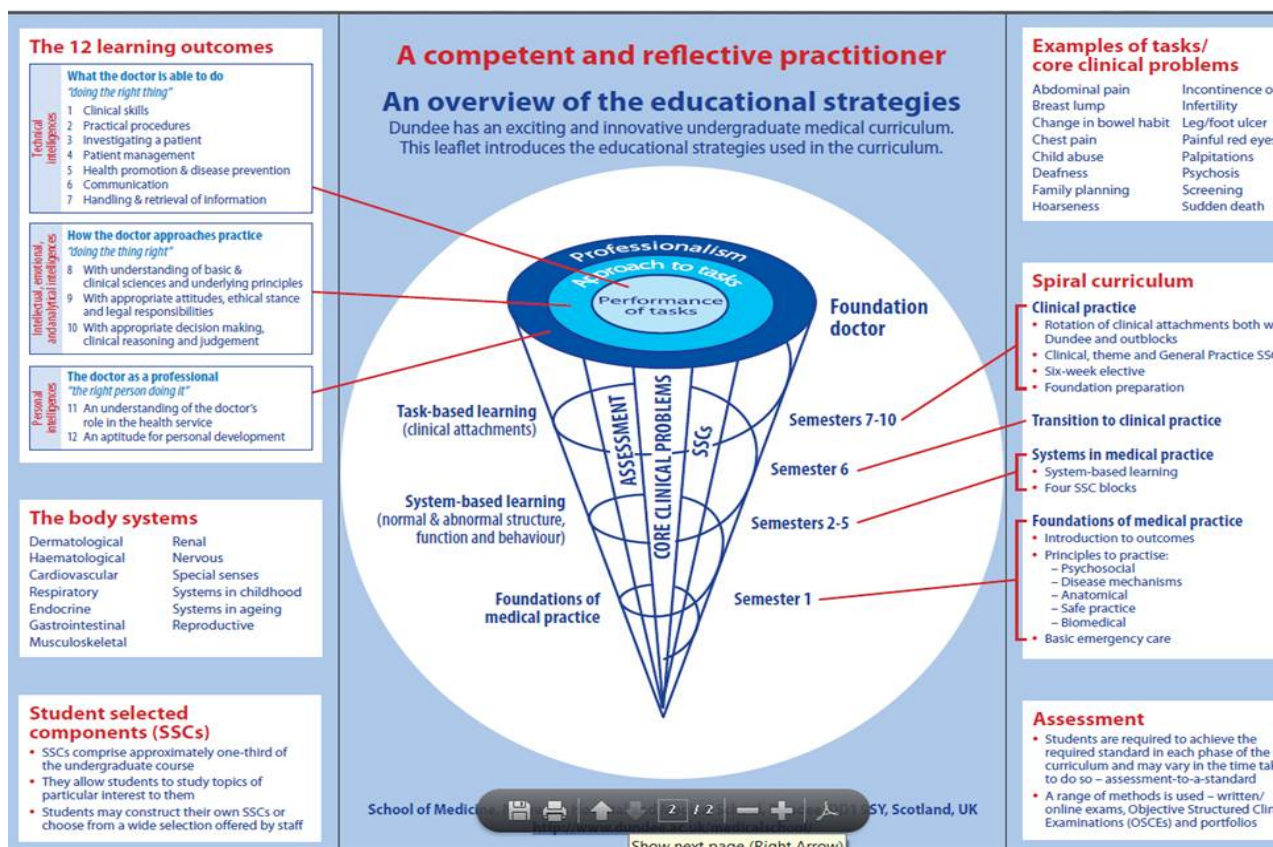
Year 1						
Sep	End of Jan		Mid-Feb		May	Jun
Introduction to Health & Disease Block			Formative Exam	Cardiovascular System	Respiratory System	First Exam
Year 2						
Sep	Jan			May		Jun
Gastrointestinal System	Urogenital System	Musculoskeletal System	Central Nervous System	Haematology/Immunology System	Endocrine System	Second Exam
Year 3						
Late - Aug		Mid-Oct		Jan		
May						
Integrated Block		Phase I Clerkship: Core Programme Exam SSM				Third Exam
Year 4						
Mid - Jul			Jan			
Phase II Clerkship: Extended Programme			Phase III Clerkship: Advanced Programme			
Year 5						
Mid - Jul		Jan		Mar	Apr	Jun
Phase III Clerkship: Advanced Programme (continued)		Revision		Final Exam	SSM	Pre-intern Prog

Oxford. Cambridge. Harvard. Yale. Stanford. It was put to me by an educational consultant; if no medical school incorporates the integumentary system in its curriculum aka syllabus then is it really important?? What a question? First of all there is one which edges towards it and I really like this one. Dundee in Scotland.

Dundee Medical School

I understand that the CUHK new curriculum was based around the Cardiff curriculum.

It is a shame I was not consulted as I could have let Dean Chung knows that the Welsh are good at rugby and singing but a funny lot in other respects. Sydney knows the Irish and did well to avoid them but the Scots? I trained in Aberdeen, Scotland, a country that has given so much to the world. I have no bias when I come to Dundee. This simple brochure is inspired and says so much but look at the systems.



Partly right. They do acknowledge a dermatology system. Going slightly off topic here I note another part of their philosophy is to acknowledge that students learn at different rates. In this respect do take time out to watch the wonderful presentation by Sir Ken Robinson. The factory concept of education is thought provoking although the logistics of the timeless, modular concept must be a nightmare.

<http://www.youtube.com/watch?v=zDZFcDGpL4U>

RSA Animates - Changing Education Paradigms

For some reasons which is difficult to explain, but perhaps relates to tradition and the conservative nature of medical education with a global fear of breaking out of the mold; medical educators just do not see what is right in front of them. People covered and packaged in yes, you are right, the Integumentary System.

Back on focus. Yes of course there are innovative challenging medical school curricula. John Hopkins: From gene to society. New Pathways in the East Coast, the Double Helix in the West etc. etc. And what about us? At CUHK. What is our legacy going to be?

From Gene to Society

Let me just underline again the breadth and extent of the Integumentary system.

Epidermolysis bullosa – a deficiency of the gene which codes for Type VII collagen an essential component of the molecular complex which form the dermo-epidermal junction. A wonderful clinical illustration of genes, proteins, structure and function.

Wound Healing and Scarring – Come on now what could be more generic and ubiquitous in medicine affecting every organ and tissue but most visible, accessible and prevalent when involving the skin. Scar. And wound healing? Our generic doctor is going to see far more diabetic and vascular ulcers in their professional lives than acute abdomens, heart attacks etc etc.

Transplantation – The most common transplant performed in the world is the skin graft. An open window to the biological processes and principles.

Immunology – Our understanding of the absolutely fundamental aspects of self and non-self? Yes allogeneic skin transplantation the study of which by Tom Gibson, a Plastic Surgeon and Peter Medawar, a Scientist led to a Noble Prize in Medicine.

Tissue Engineering – Medical dreams but where is it used in routine clinical practice? Integra a dermal regeneration template.

Stem Cells – Cultured keratinocytes have been used clinically since the late 1970's. Whilst other system panels discuss potential clinical applications we are using them. What an excellent model for teaching the biology of differentiation, plasticity, clonicity and translational biology.

Pathology? No problem. Skin tumours. The basal cell carcinoma is the commonest cancer in Caucasians; Malignant Melanoma the cancer with the fastest growing incidence in the world. But look at the diverse spectrum of malignancy with appendageal tumours, dermato fibro sarcomas, lipo sarcomas, Merkle cell tumours.

Benign Skin Lesions; Degenerative Disease; Inflammatory Disease, Infection Disease the list is endless.

Diseases of Children Eczema, Autoimmune Disease Behcets, Diseases of the Elderly, the Integumentary System has them all.

Trauma – Cuts, bruises, grazes, abrasions and of course Burns. Burns, electrical chemical, radiation, thermal. The diagnosis, management, pathophysiology, acute and rehabilitative treatment cover so many aspects of medicine.

Congenital – Birth marks, vascular malformations, aplasia, ichthyosis the list is not endless but certainly extensive.

Ethics – I must add that the fundamental principles of contemporary medical ethics have their origin in the Dax case. A young man with extensive burns who wanted to die.

Ageing – No where is the process of aging more apparent than in the Integumentary System. Skin wrinkles, fat sags. The implications on health and disease of the aging process cannot be underestimated.

Cosmetic – I know the Dean and also Dr Fung Hong are very nervous about this word but we cannot be in denial. Billions of dollars are spent each year in a global context by those who are not happy with their integumentary system. Surely we should look at this in medical school in the same way as we look at for example nutrition and preventive medicine.

Pharmacology – The skin is a conduit for drug administration. The skin is the target for a wide spectrum of agents. How do they work?

Psycho social – What an influence the colour and the appearance of the skin has on psychological well being, but moreover what an influence on societal integration and harmony on the one hand and discrimination and racial discord on the other. What does it mean to be a gweilo in Chinese society in terms of health related issues or to have black skin in a brown skinned country?

Is the Integumentary System relevant?

A recent study in the UK published in one of the highest impact factor dermatology journal indicates that 24%, I repeat, twenty four per cent, of consultations in UK general practice relate to integumentary system disorders. Of course it is relevant. Particularly to our generic doctor.

EPIDEMIOLOGY AND HEALTH SERVICES RESEARCH

BJD
British Journal of Dermatology

Skin conditions are the commonest new reason people present to general practitioners in England and Wales

J.K. Schofield, D. Fleming,* D. Grindlay and H. Williams

Centre of Evidence Based Dermatology, University of Nottingham, King's Meadow Campus, Nottingham NG7 2NR, U.K.
*Royal College of General Practitioners Research and Surveillance Centre, Birmingham B17 9DB, U.K.

Summary

Background Knowledge of the prevalence and incidence of skin conditions is a prerequisite for designing clinical services and providing appropriate training for primary health care professionals. In the U.K. the general practitioner and practice nurse are the first point of medical contact for persons with skin conditions. **Objectives** We aimed to obtain contemporary data in age-, gender- and diagnosis-specific detail on persons presenting to primary care with skin problems. **Comparisons** were made with similar data for other major disease groups and with similar data from other recent years. **Methods** We used surveillance data collected in the Weekly Returns Service (WRS) of the Royal College of General Practitioners during 2006 and trend data for subsequent years. The WRS sentinel practices monitor all consultations by clinical diagnosis in a representative population of 950 000 in England and Wales. **Results** For conditions included in chapter XII of the International Classification of Diseases Ninth Revision (ICD9), 15% of the population consulted; a further 9% presented with skin problems classified elsewhere in the ICD9, making a total of 24%. There was no evidence of increasing or decreasing trend since 2006. Skin infections were the commonest diagnostic group, while 20% of children

Correspondence
Julia K. Schofield.
Current address: Lincoln County Hospital, United
Lincolnshire Hospitals NHS Trust, Lincoln
LN2 5QY, U.K.
E-mail: j.k.schofield@herts.ac.uk

Accepted for publication
6 June 2011

Funding sources
British Association of Dermatologists, Centre of
Evidence Based Dermatology, Psoriasis Association
U.K., Primary Care Dermatology Society.

Conflicts of interest
None declared.

The opinions expressed in this paper are exclusively
those of the authors, who do not act as

The Current Curriculum

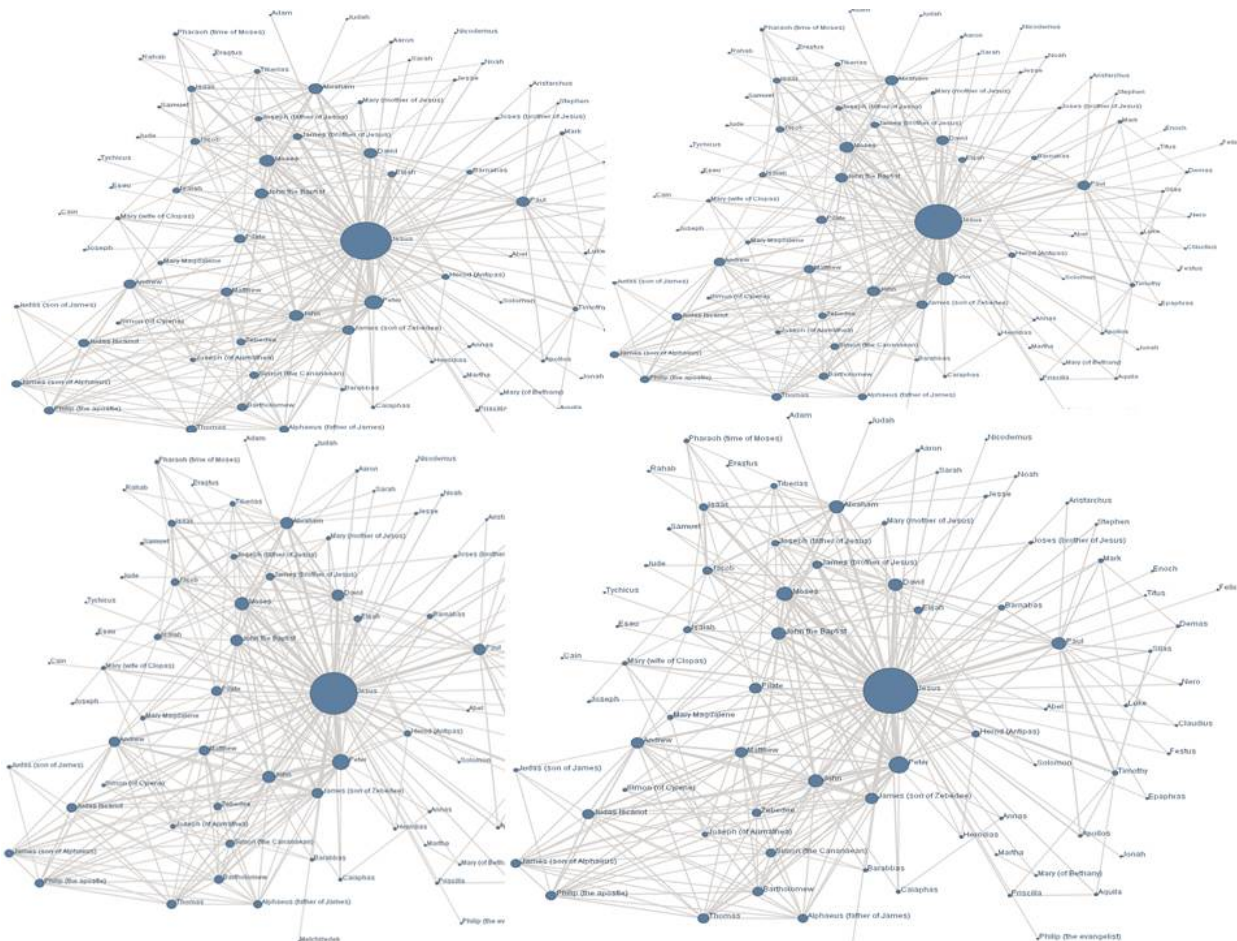
So where can we put an integumentary system panel? Last year, ever optimistic I applied for financial resource from the faculty to help develop a virtual integumentary system panel. Of course I was not present at the deliberations of the committee which pondered over the allocation of funds but suffice to say I was given an unequivocal, "Thank you but no thank you." Indeed I was told that the funding was to develop the current curriculum not to develop new initiatives. What state of denial are we in at CUHK? How can any one say the integumentary system should not have an exclusive panel? It is THE system in the body that envelopes, literally, all other systems.

We need it. Where to Place it?

The present curriculum is so cumbersome, is so overloaded. To incorporate the integumentary system would be the final straw. It would never get off the ground. In addition I do think we need a complete overall of our curriculum in order to deliver the doctors we need in the 21st century. So, frankly I do not propose or want the integumentary system being caught up, or bound down, in an anachronistic curriculum.

The Cloud

I hate the term but that is where we need to be. I need some latitude here because I am looking into a future that is so rapidly changing but bear with me whilst I try to share with you some very visceral concepts. The world is changing so rapidly in such an unpredictable way, technologically, economically, politically that I think we should be looking at an organic syllabus, responsive, changing, adapting, and evolving. We have some brilliant minds in this University. Not just measured by the impact factors of the journals they publish their papers in. No. Measured, immeasurably, by their thoughts, vision, drive, enthusiasm. I was told when I came to Hong Kong in 1999 that the only limit to what can be done, what could be achieved, is, the imagination. It has not quite worked out that way; the economy, SARS, a cautious governance but let us indulge ourselves, each other. As a medical school in the global context, are we? Fair? Mediocre? Supremely average or are we brave, innovative, challenging, risk taking, at the cutting edge? As a medical faculty? Let me make a proposal. Let us use the Integumentary System as our trail blazer. As our experimental module. Let us put it in the 'cloud'. Let us make a copy of every lecture, workshop, tutorial, resource that includes any reference to the integumentary system from medicine, from nursing, from pharmacy and put it into that virtual panel. Let us connect it in the same way that social networks have evolved. I am sure many teachers belong to such concepts as those that link themselves to authors and co-authors e.g. Biomed experts.



We can create a mesh, a network of all things related to the integumentary system. We can use multimedia, Ipads, Ipods, iPhones. We can have dynamic and evolving information repositories like Wikipedia but call it [Medipedia] and when we get to a critical mass, agreed by the majority, we selectively remove firewalls and link with other world schools. We involve the students in writing the syllabus. We encourage blogs. We experiment with assessments. We never rest. We extend from gene to society. We have a panel which contains ‘magnets’ to draw students into the environment. We engage in commercially sponsored, incentivised assessments. Let us work with

Apple, Microsoft, Samsung. We go where no medical school has gone before. If you have got this far in terms of reading and beginning to wonder what this is all about then the seed is sown. You cannot erase this tantalizing concept from your conscious awareness.

I think we have an opportunity to make a quantum leap in terms of the preparation of our students to become generic doctors. Does the Faculty of Medicine of the Chinese University of Hong Kong have the will, the energy, the commitment to become world leaders in medical education? I think so.

Let me say, before I finish that I am clinically sane, pragmatic and this is no flash in the pan idea. What I am proposing is, potentially huge but let us keep our feet on the ground but begin to build this jewel in the sky. At the last East meets West Medical Education forum sponsored by the Li Ka Shing foundation we were talking about global medical education in terms of a global curriculum. A curriculum that reflects the rich diversity of culture, creed, ethnicity, language and environment but the singular universality of our humanity. Do we want to be part of this global initiative? I do and I want to put the Integumentary System on the table, or more precisely in the “cloud”, for CUHK and beyond.

Thank you.

