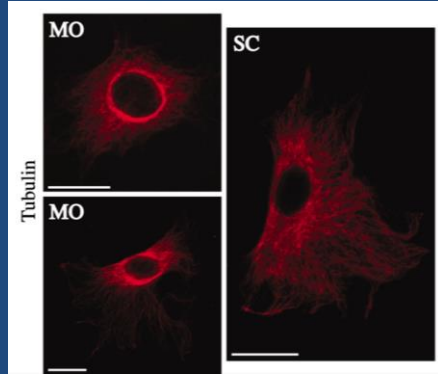


How to Develop Faculty into Modern Educators

Victor Soukoulis, MD, PhD
Assistant Professor
University of Virginia

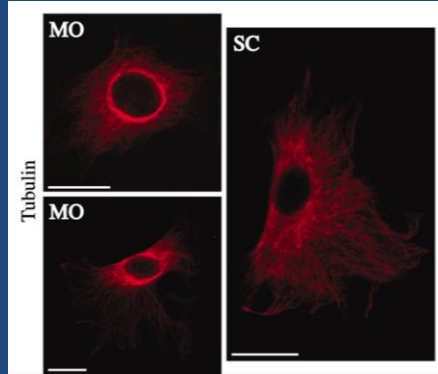


My career development...



Mammalian cells

My career development...



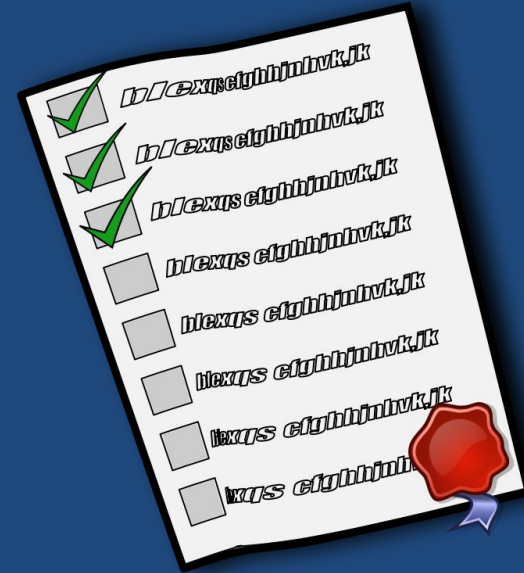
Mammalian cells



Small mammals

Outline of Presentation

- COCATS 4 and active learning
- Team-based learning
- Web-based learning
- OSTEs



COCATS 4

- Based on ACGME core competencies
- Emphasis on curricular milestones and evaluation
- These are basis of Entrustable Professional Activities (EPAs) for cardiologists

Table 1. ACGME Core Competencies

- **Patient Care** – that is compassionate, appropriate, and effective for treating health problems and promoting health
- **Medical Knowledge** – about established and evolving biomedical, clinical, and cognate (e.g., epidemiological and social-behavioral) sciences and the application of this knowledge to patient care
- **Practice-Based Learning and Improvement** – that involves investigation and evaluation of their own patient care, appraisal, and assimilation of scientific evidence, and improvements in patient care
- **Interpersonal and Communication Skills** – that result in effective information exchange and teaming with patients, their families, and other health professionals
- **Professionalism** – as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population
- **Systems-Based Practice** – as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value

COCATS 4

- *Evaluation tools include a variety of modalities... Case management, judgment, interpretive and technical skills must be evaluated regularly.*
- *Evaluation tools ... include **direct observation by instructors**, in-training examinations, case logbooks, conference and case presentations, multisource evaluations, trainee portfolios, **simulation**, and self reflection.*

COCATS 4

*The rapid evolution of cardiovascular medicine requires that all training programs have an experienced faculty, adequate facilities, and a **rich assortment of didactic offerings** for fellows. **Case-based conferences** are vital to train fellows and develop their skills in evidence-based decision-making. **Self-learning** is emphasized, and **Internet-based, online educational programs, many of which are interactive**, play an increasingly important role in learning during fellowship and beyond.*



NOT MORE LECTURES!





NOT MORE LECTURES!



CC Images courtesy of Flickr (S Chase, dave78981)

Active Learning

- Is “active” rather than “passive”
- Requires learners to do meaningful learning activities and think about what they are doing
- Can increase participation, enthusiasm, self-directed learning
- Involves higher-order thinking
- Can enable faculty to determine what learners know in real-time

Increased Emphasis on Educational Innovation

- In 2011 Harvard received a \$40,000,000 gift to be used for educational research and innovation (HILT)
- This could be used to construct next-generation classrooms and fund research on new teaching techniques (enhanced HMS curriculum revamp)



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Active Learning in GME

- This can actually be a form of direct observation of fellows/residents
- Can evaluate multiple competencies

Medical Knowledge

Practice-based Learning and Improvement

Interpersonal and Communication Skills

Why not just rely on case conferences?

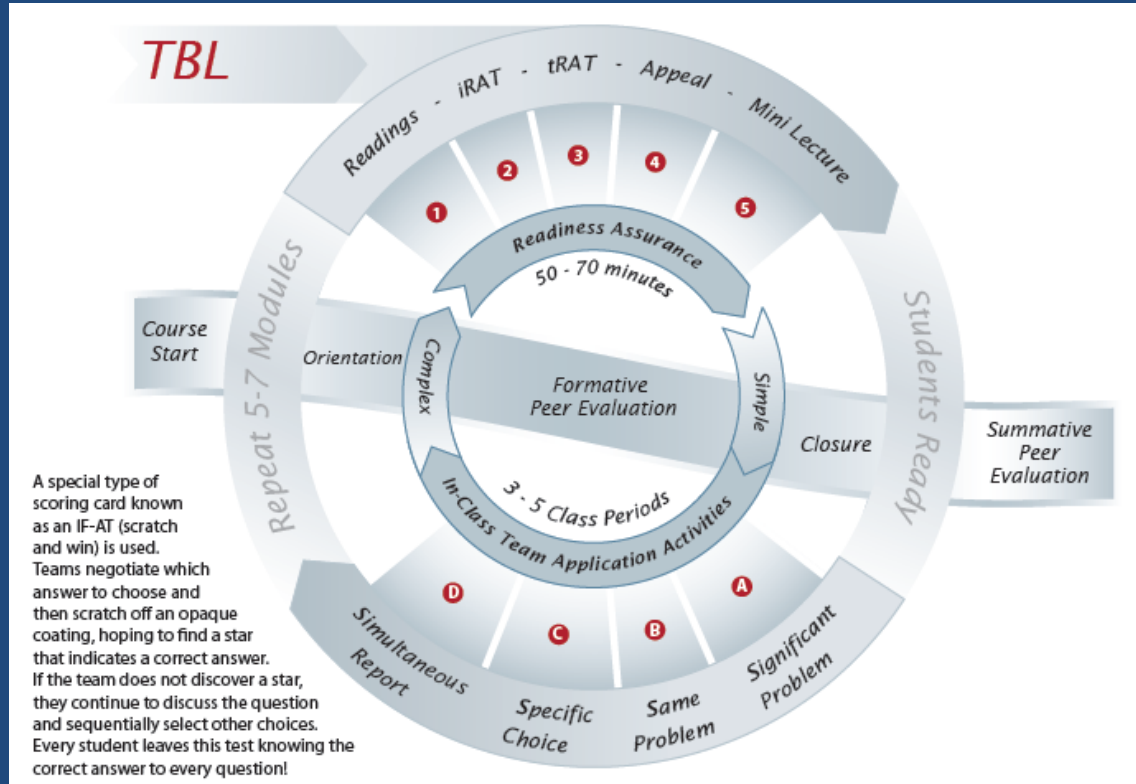
- Tendency to revert to lecture-based format
- Can have awkward silence due to intimidation factor of individual opinion
Bueller F et al. 1986
- Certain individuals tend to dominate/monopolize discussion

Why not just rely on case conferences?

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One solution is to use structured discussion format such as team-based learning (TBL)

Team-based Learning



Team-based Learning at the University of Virginia

- TBL became a mandatory part of med school curriculum (session q2weeks)
- Oversight group created to help facilitate and design TBL sessions
- Any faculty can come to this group with a proposal and receive support
Guidance on design, trained moderators, etc.
- First GME project is ongoing (Dept of Anesthesia)

What if there is no TBL expert in the department?

What if there is no TBL expert in the department?

FIND ONE ON CAMPUS

- Undergraduate medical education is well ahead of GME
- Very likely that being used in some form in medical school
- Find person and ask for help

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CREATE ONE!

- *Team-based Learning Collaborative* has national conference where workshops held on running TBL (~\$500)
- Can send one dedicated member of faculty and have them teach/help others back home

Web-based Learning



We are all familiar with boring web-based learning...

Mandatory New Employee Training

PRIVACY & INFORMATION SECURITY

1: Confidentiality - Everyone's Concern

Key Learning Points

- **Confidentiality is a cornerstone upon which our relationship with our patients is built.**
- **Information about patients should be available only to those who have a need to know based on their authorized role-related duties.**
- **Privacy and security rules require us to safeguard patient information.**

Protected Health Information



Protected Health Information (PHI) is healthcare-related information that is protected by federal legislation and must be kept confidential. It includes:

- any medical information that can be identified as belonging to a particular person
- any combination of medical and personal information such as name, medical record number, address, telephone number, birth date, or dates of admission, treatment and discharge

PHI must be protected in any form (e.g. oral, written/printed, electronic) and in all locations:

- oral communications (e.g., patient care reports, rounds)
- written or printed information (e.g., patient medical records, prescriptions, faxes, radiology reports, schedules, notes, appointment notices)
- electronic data (ePHI) (e.g., in computers, laptops, personal digital assistants [PDAs], mobile devices and computer systems)

HIPAA

HIPAA stands for the **Health Insurance Portability and Accountability Act**. This federal legislation enacted standards and regulations that hospitals, doctors, and other healthcare providers must follow to ensure the privacy and security of healthcare information.

Web-based Learning

- Need to offer something *unique not otherwise easily available*
- Discuss two free software platforms and their use in cardiovascular education

Open Labyrinth

Moodle



CC Image courtesy of Wikimedia (P Mercator)

Open Labyrinth



- Free, open-source software platform for developing medical education cases
- Can incorporate text, pictures, video using online design interface
- Allows branched-narrative interactive cases
- More advanced features enable tracking of time taken, path chosen, learner feedback, etc.

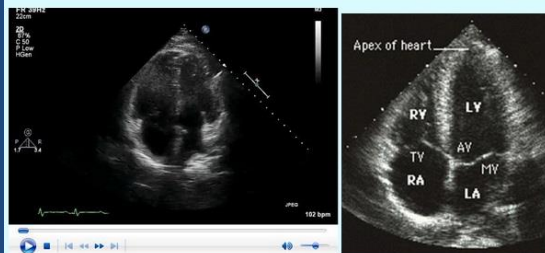
Open Labyrinth



OpenLabyrinth

Echocardiogram

The echo tech comes by and performs the echocardiogram. One of the representative apical four-chamber views is shown below, along with an orientation guide.



The official report states that there is evidence of some RV dysfunction.

The RV systolic pressure is estimated to be ~50 mmHg (normal <25).



The patient's vitals are stable and he wants to know when he can leave the hospital, as he feels run down and fatigued from all the testing. "You've made me feel wo

You next decide to:

Contact cardiology for possible lytic therapy.

Continue heparin and start warfarin in preparation for discharge.

Open Labyrinth in Use

- Open Labyrinth modules were used at BWH to educate oncology PAs about PE/DVT management and when to call a consult
- Opportunities for interprofessional education in cardiology topics (easy upkeep)
- Need to have interested/motivated faculty (incentivize?)...or fellows

Moodle



- Free, open-source software platform for developing online courses
- Basic interface allowing article storage, quizzes/assignments, discussion forums


A screenshot of the Moodle user interface for Mt Orange School. The page title is "Mt Orange School: My home". The user is logged in as Gary Vasquez. The interface is divided into several sections: "NAVIGATION" with links to home, profile, and courses; "ADMINISTRATION" with profile settings; "CALENDAR" for August 2014; "COURSE OVERVIEW" listing "Geography Module 2", "Psychology in Cinema", "Art History", and "English: The Lake Poets"; "MY PRIVATE FILES" with a file named "Geogfiles.pdf"; "ONLINE USERS" listing several users; and "UPCOMING EVENTS" with various scheduled activities.

<http://moodle.org/>

Web-based Cardiology Education at UVA

- The UVA Realm is a comprehensive repository of cardiology resources
- Goal is to ensure core cardiology knowledge base for all housestaff/students
- Key articles, guidelines, and *Top 10 lists with associated quizzes*

Web-based Cardiology Education at UVA



You are logged in as **VictorSoukoulis** (Logout)

REALM Interns: MK

Learners

- Faculty
- NPs and PAs
- Nurses
- Fellows
- Upper Residents
- Interns
- Medical Students
- NP Students

Rotations and Labs

- ACS
- CCU
- Consults
- Electrophysiology
- Emergency Medicine
- Interventional
- Noninvasive
- NP Inpatient
- Outpatient Clinics

Resources

Articles: BY TOPIC
Case Studies
Clinical Guidelines
Clinical Trials: KEY TRIALS
Clinical Trials: BY ALPHA
ECG Course
Heart Songs
PPTS: INSTRUCTORS ONLY
Topics in CV Disease
Tutorials
Uva Clinical Trials

Directories

- CV Faculty
- CV Fellows
- IM Residents
- Medical Students

Offsite Links

- ACTOR: UVA IM LEARNING
- CardioExchange
- CardioSmart: PATIENTS
- CardioSource: DOCTORS
- CardioVillage: FREE CME
- CME Credit: ONLINE FORM
- EPIIC: LEARNING LIBRARY
- Health Library
- New Innovations
- Uva Clinician Portal
- Wave Maven: ECGs
- When to Work: SCHEDULES

Topic outline

Interns: **Medical Knowledge**

1 **Instructional Resources** These tools are available only to faculty and teaching fellows.

- Instructional PowerPoints

2 **Topics in Cardiovascular Medicine** Topics are assigned by rotation. Please go to your rotation page to find out which topics to complete.

Resource Materials

Outstanding Resources on All Curricular Topics
Resource articles, guidelines, heart sounds, images, etc., arranged by curriculum topic.

Aortic Dissection

- Interns: Aortic Dissection Top 10
- Interns: Aortic Dissection: CCU Quiz

Arrhythmias

Atrial Fibrillation

- Interns: Atrial Fibrillation Top 10
- Interns: Atrial Fibrillation: ACS Quiz
- Interns: Atrial Fibrillation: CCU Quiz
- Interns: Atrial Fibrillation: Outpatient Clinics Quiz

Atrial Flutter

- Interns: Atrial Flutter Top 10
- Interns: Atrial Flutter: ACS Quiz

Pacemakers and ICDs

- Interns: Pacemakers and ICDs Top 10
- Interns: Pacemakers and ICDs: ACS Quiz
- Interns: Pacemakers and ICDs: Outpatient Clinics Quiz

Sudden Cardiac Death

- Interns: Sudden Cardiac Death Top 10
- Interns: Sudden Cardiac Death: CCU Quiz

Supraventricular Arrhythmias

- Interns: Supraventricular Arrhythmias Top 10
- Interns: Supraventricular Arrhythmias: ACS Quiz

Cardiovascular Emergencies

- Interns: CV Emergencies Top 10
- Interns: CV Emergencies: CCU Quiz

Calendar

January 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Events Key

- Global
- Course
- Group
- User

Patient Safety

Patient Safety

Quality Improvement

Quality Improvement

Assistance or Suggestions

Webmaster

Computer Requirements

Pop-up Blocker turned OFF
QuickTime & Flash installed

Messages

No messages waiting
Messages...

Administration

- Profile

Web-based Cardiology Education at UVA

Acute Pericarditis Top 10 List

1. Acute pericarditis generally presents with retrosternal, sharp, and pleuritic chest pain that radiates to one of the scapulae; it is classically aggravated by recumbent positioning, it is alleviated when leaning forward.
2. The presence of a pericardial friction rub is 100% specific for acute pericarditis. This rub can have 3 components- atrial systole, ventricular systole, and rapid diastolic filling.
3. The most common cause of acute pericarditis is idiopathic; other causes include viral, bacterial, tuberculous, uremia, aortic dissection, traumatic, hypothyroidism, post-myocardial infarction (Dressler's syndrome), post-pericardiectomy, malignant, autoimmune, drugs, etc.
4. The ECG of acute pericarditis shows diffuse concave ST elevation and PR depression in most leads (except aVL and V1- ST depression and PR elevation).
5. There are four stages of ECG changes associated with acute pericarditis:
1st= ST elevation with PR depression
2nd= resolution of #1 with T-wave flattening
3rd= diffuse T-wave inversions
4th= resolution of changes
6. Patients with acute pericarditis can have positive cardiac biomarkers (troponin and CK-MB), usually indicative of myopericarditis.
7. The diagnosis of acute pericarditis is made if: a pericardial rub is found in auscultation or the patient has diffuse ST elevation and classic chest pain with or without a pericardial effusion by echocardiogram.

UNIVERSITY OF VIRGINIA HEALTHSYSTEM

REALM Residents Assessments Quizzes RLM: Acute Pericarditis: Consults Quiz Attempt 1

RLM: Acute Pericarditis: Consults Quiz

1 Marks: 10
The initial therapy for the first episode of acute pericarditis in an otherwise healthy patient could include any of the following EXCEPT:
Choose one answer.

- corticosteroids
- colchicine
- indomethacin
- ibuprofen

2 Marks: 10
The most common cause of infectious pericarditis in the world is:
Choose one answer.

- viral
- fungal
- tuberculous
- bacterial

3 Marks: 10
All of the following are treatments of recurrent pericarditis EXCEPT:
Choose one answer.

- sulfasalazine
- prednisone
- intrapericardial steroid instillation
- colchicine

4 Marks: 10
A 65-year-old man with a recent viral infection presents with chest pain and is found to have diffuse ST elevation on ECG and a moderate pericardial effusion. The next step in his management includes:
Choose one answer.

- diagnostic pericardiocentesis
- NSAIDs and observation
- chest CT
- surgical pericardial window

5 Marks: 10
A patient undergoes diagnostic pericardiocentesis which reveals staphylococcal pericarditis. The definitive treatment of this condition involves:
Choose one answer.

- antibiotics for 2 weeks

Moodle in Use

- Can help ensure key competencies/knowledge are met
- Faculty/fellow pairs update content periodically (resource-intensive)
- Site can become unwieldy as expands

Faculty development off the beaten path...



CC Image courtesy of Flickr (A Nicol)

OSTE (Objective Structured Teaching Exercise)

- Modified “OSCE” focused on evaluating teaching skills of residents and faculty
- Simulated learner encounter on giving feedback or interacting with learner in difficult situation
- “Faculty” do self-assessment and also get feedback from others

OSTE (Objective Structured Teaching Exercise)

- Example scenarios in literature:

Feedback to a learner in difficulty

Bedside teaching

Outpatient precepting

Teaching how to deal with a seductive patient

OSTE (Objective Structured Teaching Exercise)

- Has been used in Internal Medicine at NYU and UCSF; being implemented at UVA for anatomy lab teaching
- Could be used to directly evaluate fellows' communication and teaching skills (*the early bird gets...*)
- Resource-intensive and unclear if faculty teaching evaluations improve

Summary

- GME (incl COCATS 4) moving towards more active learning and evaluation
- Team-based and web-based learning are underused methods
- Always try to offer something unique and not easily available

Thank you!!!!!!

