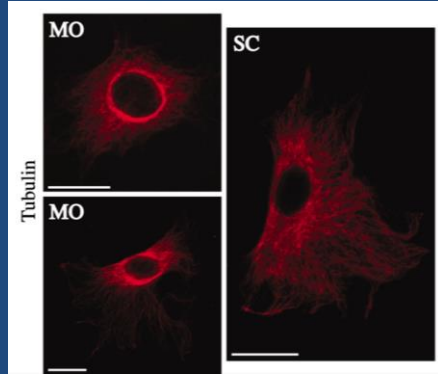# How to Develop Faculty into Modern Educators

Victor Soukoulis, MD, PhD

Assistant Professor

University of Virginia
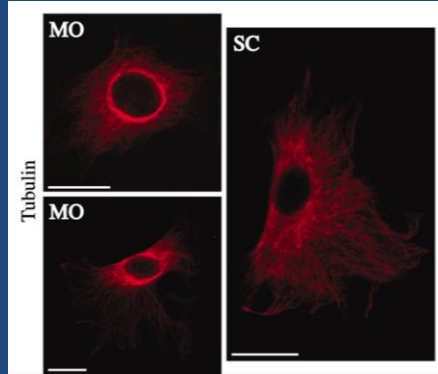
My career development…

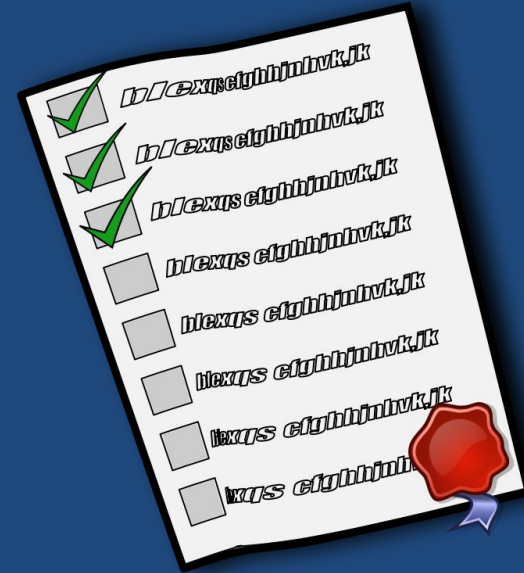Mammalian cells

My career development…

Mammalian cells

Small mammals

My career development...

Mammalian cells

Small mammals

Large 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

ACC Competency Management Committee

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.*

ACC Competency Management Committee

NOT MORE LECTURES!

CC Images courtesy of Flickr (S Chase, dave78981)

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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

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

Team-based Learning
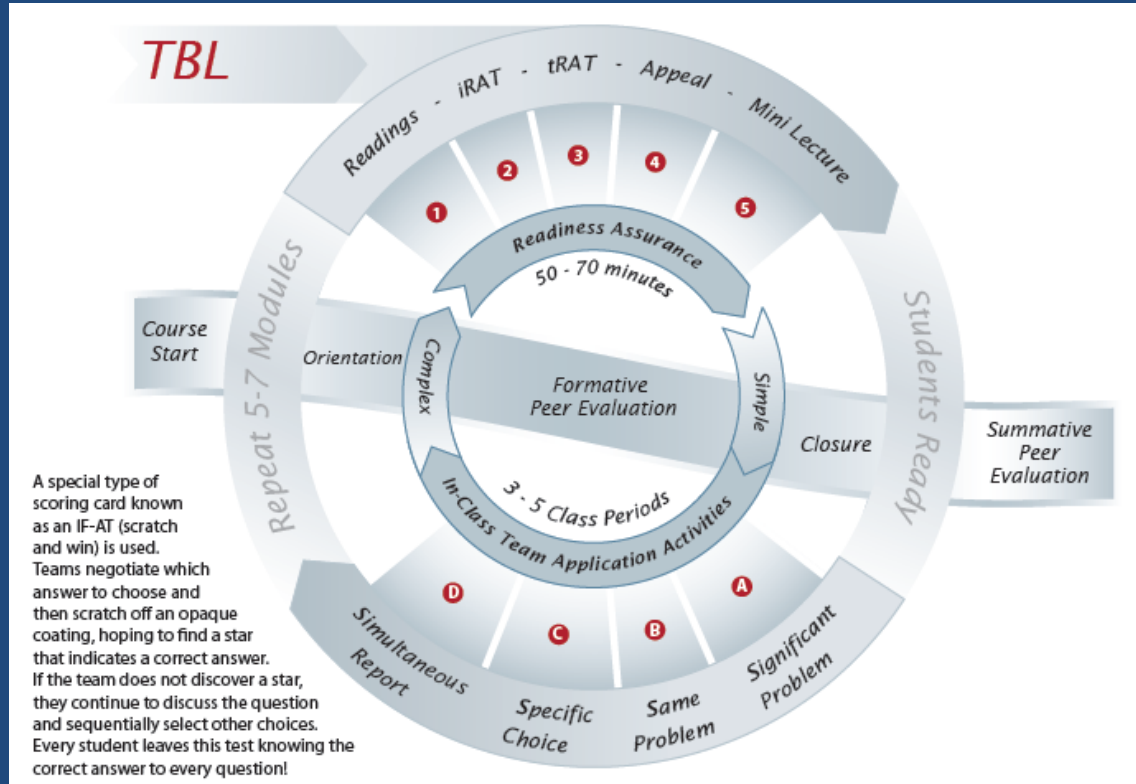
Team-based Learning at the University of Virginia

- 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?

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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

http://openclipart.org/

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 **H**ealth **I**nsurance **P**ortability and **A**ccountability **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.

http://openlabyrinth.ca/

Open Labyrinth

Open Labyrinth

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

Soukoulis et al. *Acta Cardiologica* In press

Moodle

- Free, open-source software platform for developing online courses

- Basic interface allowing article storage, quizzes/assignments, discussion forums

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

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Acute Pericarditis
Top 10 List

1. Acute pericarditis generally presents with retrosternal, sharp, and pleuritc 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-pericardiotomy, 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 HEALTH SYSTEM

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 pericardi... 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 percardiocentesis 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…

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

Julian et al. *Teach Learn Med* 2012
Boillat et al. *Med Teach* 2012

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!!!!!