



The University of Pittsburgh School of Medicine

A different kind of medical school. A different kind of medicine.

ENHANCING THE IMPACT AND OUTCOME OF LECTURING

Medical Education enters the 21st century

Academy of Master Educators Seminar Series

Rosanne Granieri, MD

Professor of Medicine







WHY GIVE A LECTURE?

- To give information not available in print to a large audience
- To give information which has been synthesized from many print sources
- They can be efficient

Whitman, Neil. *There is no good gene for teaching: a handbook on lecturing medical students*; 2nd edition. 1999



They are efficient (and effective) in

- Transferring knowledge and concepts
- Providing core material
- Directing further learning



They may not be as effective as other methods to

- Stimulate thinking
- Inspire interest in a subject
- Teach behavioral skills
- Change attitudes
- Assure that our students learn what we want them to learn



One of the problems of the lecturer is that the student in a lecture is usually passive and sometimes asleep- a condition not conducive to maximal learning.

McKeachie, 1965





ACTIVE
TEACHER

PASSIVE
TEACHER

ACTIVE
LEARNER

PASSIVE
LEARNER



ACTIVE
TEACHER

PASSIVE
TEACHER

ACTIVE
LEARNER

PASSIVE
LEARNER





ACTIVE
TEACHER

PASSIVE
TEACHER

ACTIVE
LEARNER

PASSIVE
LEARNER





ACTIVE



PASSIVE
TEACHER

ACTIVE
LEARNER

PASSIVE
LEARNER



ACTIVE
LEARNER



PASSIVE
TEACHER

PASSIVE
LEARNER





**content without good process is as
illegitimate as good process
without content**

**Whitman, NA. There is No Good Gene for Teaching,
2nd edition; pg 23**





LET'S GET PRACTICAL





LEARNING OBJECTIVES

- **To utilize the 3 stages of teaching in the approach to a successful lecture**
- **To successfully use quality lecturing techniques, effective public speaking and effective audiovisual aides when delivering a lecture**



LEARNING OBJECTIVES

- **To utilize the 3 stages of teaching in the approach to a successful lecture**
- **To successfully use quality lecturing techniques, effective public speaking and effective audiovisual aides when delivering a lecture**



- 1. PREPARE**
- 2. TEACH**
- 3. REFLECT**



- 1. PREPARE**
- 2. TEACH**
- 3. REFLECT**





ASK 4 QUESTIONS

- **DO I KNOW MY AUDIENCE?**
- **WHAT ARE MY OBJECTIVES?**
- **WHAT ARE MY RESOURCES?**
- **AM I COMPETENT?**



ASK 4 QUESTIONS

- **DO I KNOW MY AUDIENCE?**
- **WHAT ARE MY OBJECTIVES?**
- **WHAT ARE MY RESOURCES?**
- **AM I COMPETENT?**



■ AUDIENCE

- who are my learners?
 - what level(s)?
 - current knowledge/experience?
- how does my lecture fit in with the curriculum?
- what methods have been used to teach students in the past?
- how many will be there?



- **DO I KNOW MY AUDIENCE?**
- **WHAT ARE MY OBJECTIVES?**
- **WHAT ARE MY RESOURCES?**
- **AM I COMPETENT?**



Specific

Measurable/observable

Attainable

RELEVANT

Targeted to the learner



■ OBJECTIVES

- **what do I want them to learn?**
- **what are THE MOST IMPORTANT messages?**
- **What knowledge/skills related to your lecture will students be expected to demonstrate on an assessment?**



- **DO I KNOW MY AUDIENCE?**
- **WHAT ARE MY OBJECTIVES?**
- **WHAT ARE MY RESOURCES?**
- **AM I COMPETENT?**



- where is the room and how large is it?
- how is the room arranged?
- what AV equipment is available?
- what version of PowerPoint®?
- do I need to bring equipment?
 - (computer, LCD)



- **DO I KNOW MY AUDIENCE?**
- **WHAT ARE MY OBJECTIVES?**
- **WHAT ARE MY RESOURCES?**
- **AM I COMPETENT?**



■ COMPETENCY

- am I competent in doing the session?
 - do I have the **cognitive skills** for the lecture?
- am I competent in the use of the audiovisual materials?



NEXT.....

- Decide on an organizational structure
- Prepare an **outline**

Students learn information better if it is effectively organized



- Plan for well-placed **summary slides**

***Clear conclusions and summaries
reinforce and clarify messages***



- Decide how to illustrate key points



Students learn information better if they recognize it as important



1. PREPARE
2. **TEACH**
3. REFLECT





- Bugs, Mice, Snakes, and Bats
- Heights
- Water
- Public Transportation
- Storms
- Closed Spaces
- Tunnels and Bridges
- Crowds
- Speaking in Public



GENERAL INITIAL TIPS:

- **prepare yourself**
- **be on time**
- **introduce yourself**
- **introduce your topic**
- **project positive anticipation**



■ **the outline**
TELL THEM WHAT YOU'RE GOING TO TELL THEM

■ DO IT **the talk**

■ **the summary** TOLD





PASSIVE



ACTIVE



TYPE OF PRESENTATION	RECALL AFTER 3 HRS	RECALL AFTER 3 DAYS
Verbal (one way) lecture	25%	10-20%
Written (reading)	72%	10%
Visual and verbal (illustrated lecture)	80%	65%
Participatory	90%	70%

Dale E. Cone of experience. Educational Media, 1969




- **INTRODUCTION**
 - **Grab their attention**
 - **Set the mood**
 - **Demonstrate relevance**



- **INTRODUCTION**
 - **Grab their attention**
 - Set the mood
 - Demonstrate relevance



ATTAINING ATTENTION

- 
- the anecdote
 - the interesting case, dilemma
 - emphasizing the relevance of the topic
 - surveying the audience
 - asking questions
 - presenting a situation that requires active participation



ANECDOTES

- must illustrate a principle you are trying to teach
- should be enjoyable/interesting
- student should be able to relate to it
- it's nice to be humorous/don't push it



ATTAINING ATTENTION

- the anecdote
- **the interesting case, dilemma**
- **emphasizing the relevance of the topic**
- **surveying the audience**
- **asking questions**
- **presenting a situation that requires active participation**



SOME EXAMPLES

- **“How many people in the audience have asthma or know someone with asthma?”**
- **Begin with a picture showing John Kennedy in a lecture on Addison’s Disease**
 - **Ronald Regan and Alzheimer’s disease**



Every teenager's nightmare...turning into her mother.
JAMIE LEE CURTIS **LINDSAY LOHAN**



WALT DISNEY PICTURES
PRESENTS

FREAKY FRIDAY

CASTING BY JANE FOSTER. COSTUME DESIGNER: JENNIFER HARRIS. HAIR: JENNIFER HARRIS. MAKEUP: JENNIFER HARRIS. PRODUCTION DESIGNER: JENNIFER HARRIS. EXECUTIVE PRODUCERS: JENNIFER HARRIS. PRODUCED BY JENNIFER HARRIS. WRITTEN BY JENNIFER HARRIS. DIRECTED BY JENNIFER HARRIS. **GET FREAKY IN CINEMAS SOON**



PASSIVE



ACTIVE



MAINTAINING ATTENTION



- Attention span wanes after about 15-20 minutes
- One study of student attentiveness suggests students are paying attention **40%** of the time



MAINTAINING ATTENTION

- watch the audience/maintain eye contact
- be creative but not cutesy
- 15-20 minute attention span
- vary your delivery. Move your body and your voice
- maintain your enthusiasm
- identify transitions and make them fluid



- Plan for some active participation



- Ask questions
- Handouts with tasks
- Outlined handouts with key words missing for listeners to fill in as they listen to the talk
- Gimmicks
 - Ask the audience: audience response clickers
 - Phone a friend
- Post-test
- Demonstration
- **Summarize regularly/bring 'em back**





THE CONTENT

- Tell the story
- Limit content so that all major points are clear and generalizations and principles are emphasized
- Use “signposts”
- Summarize subsections



ENDING THE LECTURE

- Finish on time (bring a watch)
- Announce it
- Don't race to squeeze in more info
- Summarize (have summary slide(s))
- The last things you say are the ones the students are most likely to remember



OTHER TIPS

- Be conversational
- Watch for monotone speak
- Avoid distracting mannerisms: “ah”, “uh”
 - consider taping/videoing lecture
- Routinize but don't memorize



- Use concrete examples to illustrate abstract principles
- Pause intermittently
- Check for understanding

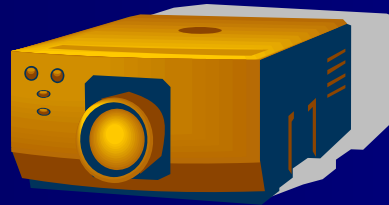


DO A DRY RUN





AUDIOVISUAL AIDES





AUDIOVISUAL AIDES

- They work
- People generally remember
 - 20% of what they hear
 - 30% of what they see
 - 50% of what the hear and see



- Make sure you know
 - what is there
 - if it's compatible with your equipment
 - you know how to use it



PowerPoint or other slides



- **Bad slide**
- **Bad slide**

➤ Bad slide



another bad slide





4 important principles

- Slides should be simple
- Slides should be legible
- Progressive disclosure
- See/hear compatibility



4 important principles

- **Slides should be simple**
- Slides should be legible
- Progressive disclosure
- See/hear compatibility



watch your PowerPoint® animation



4 important principles

- Slides should be simple
- **Slides should be legible**
- Progressive disclosure
- See/hear compatibility



- 35 words (5-7 lines/slide; 5-7 words/line)
- font size (this is 12, **this is 32**; **this is 48**)
- avoid non standard abbreviations



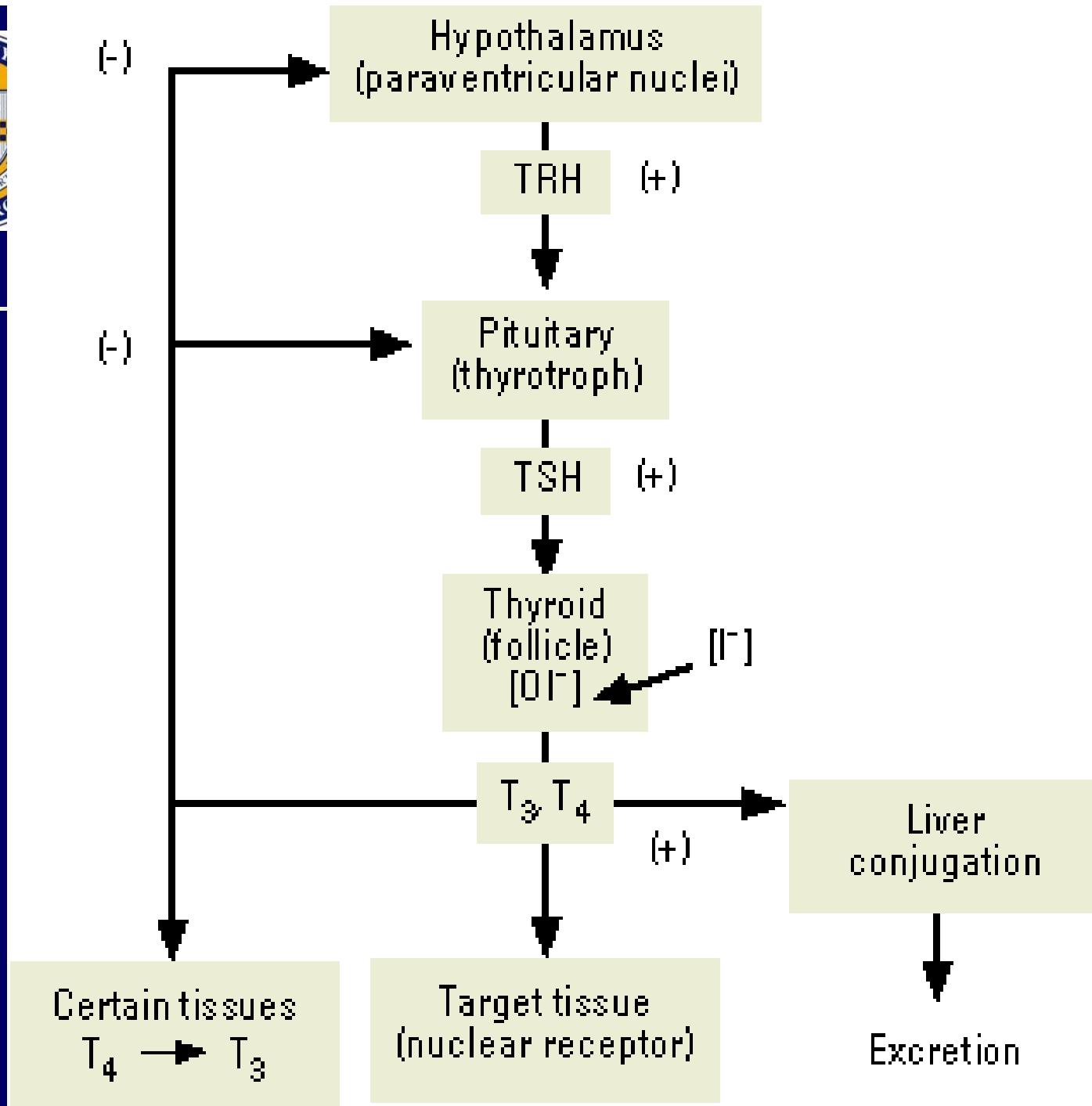
4 important principles

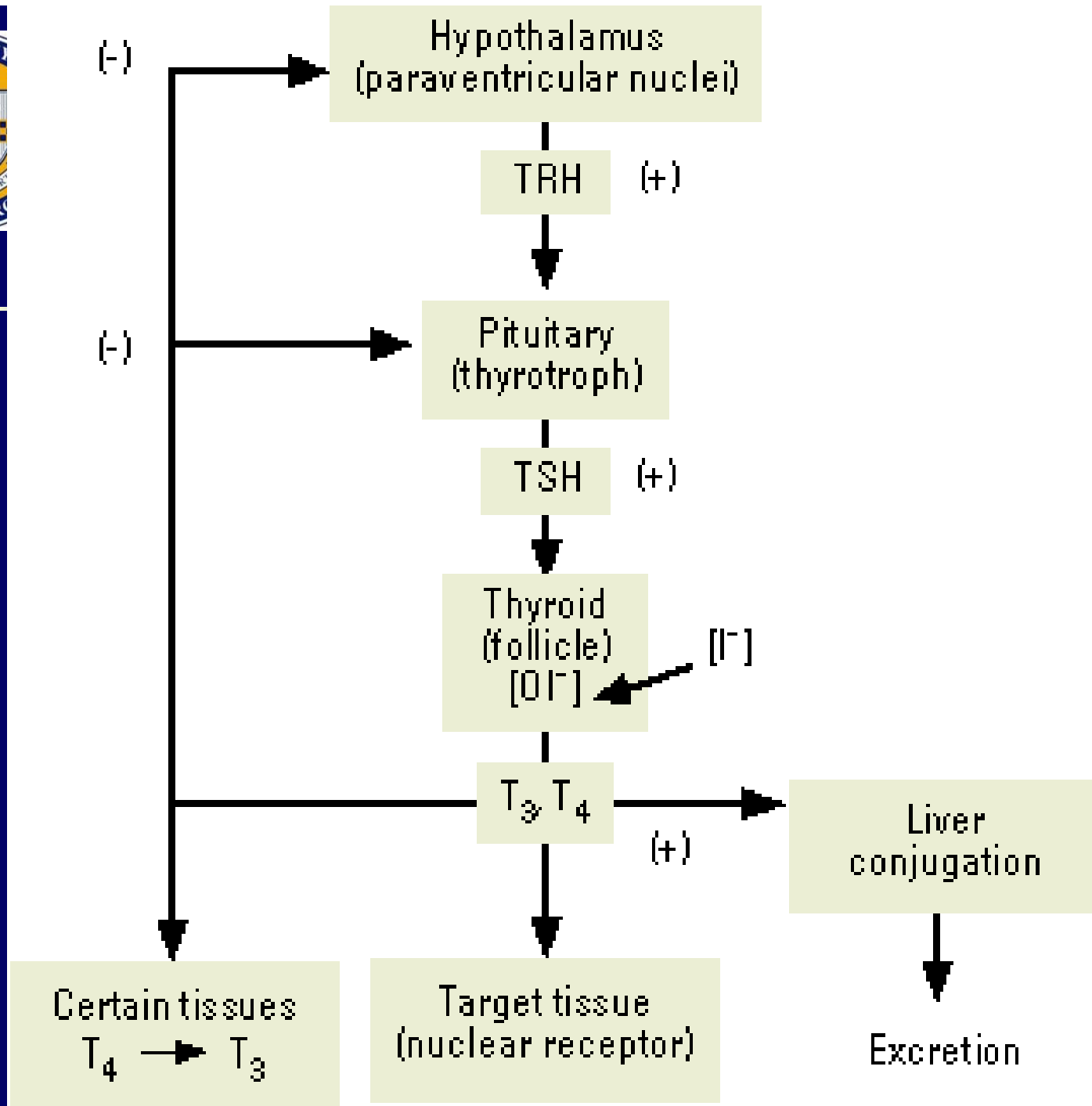
- Slides should be simple
- Slides should be legible
- **Progressive disclosure**
- See/hear compatibility

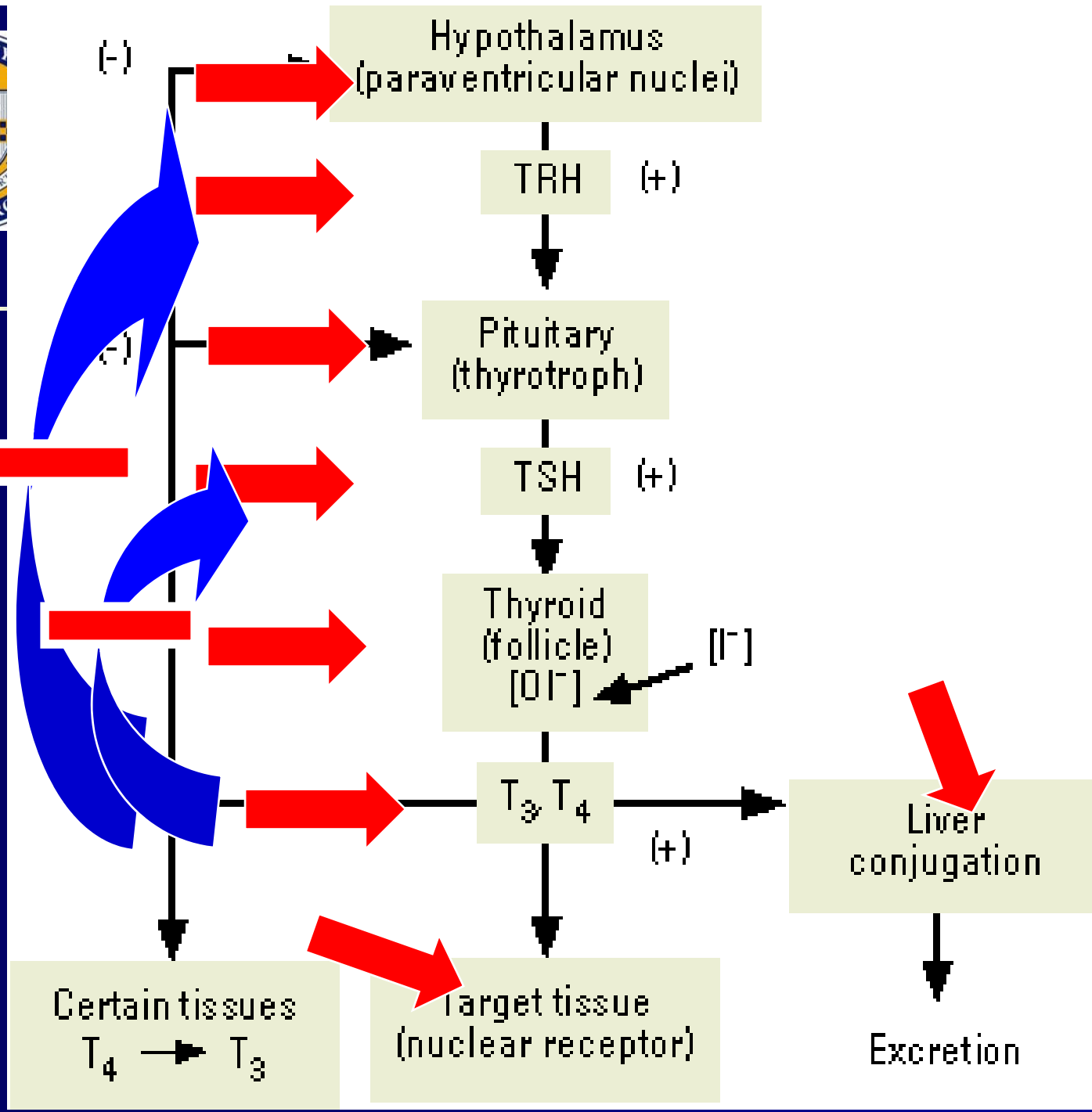


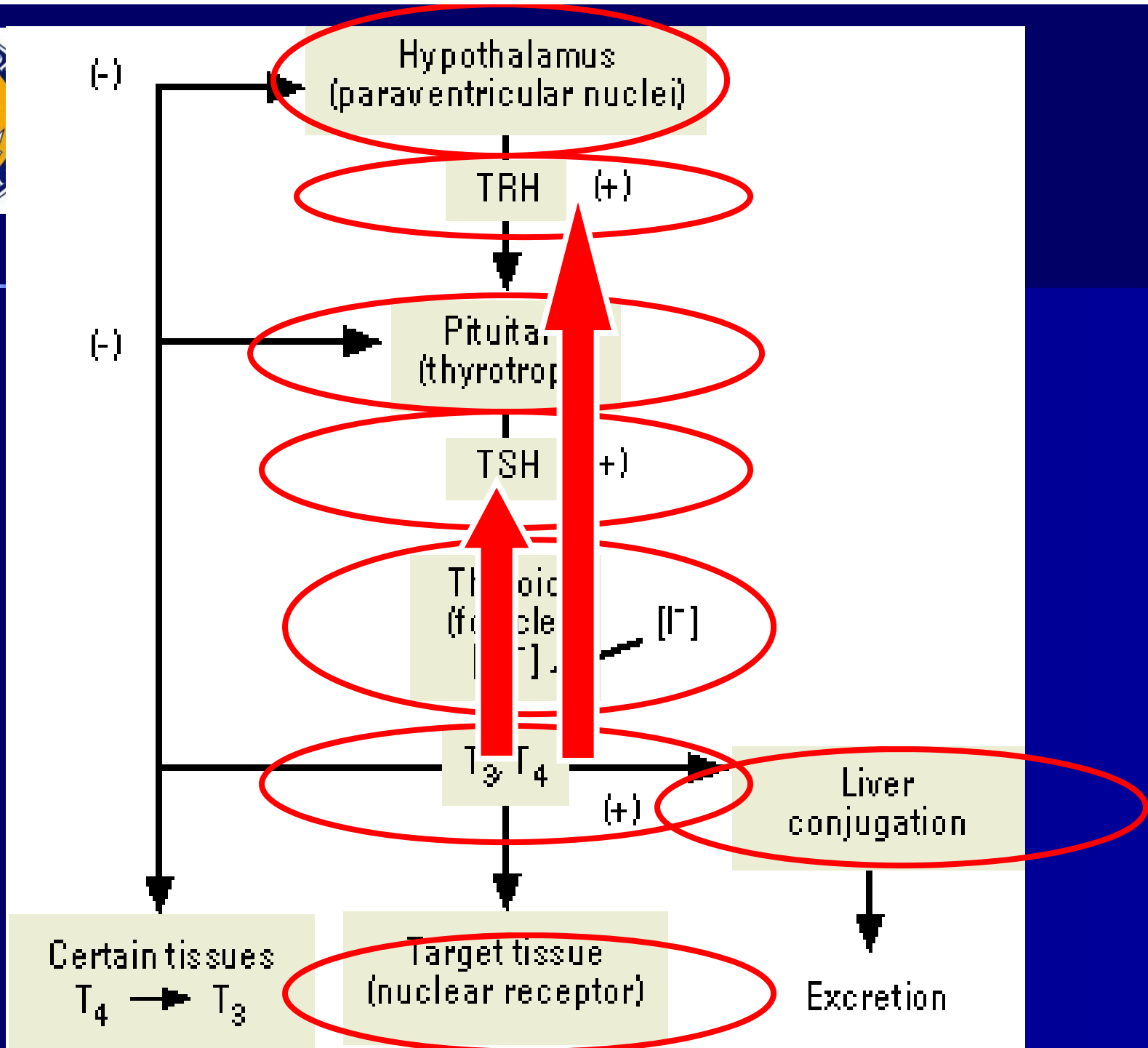
PROGRESSIVE DISCLOSURE OF

- WORDS
- PICTURES/GRAPHS











Hypothalamus
Paraventricular nucleus

TRH

pituitary

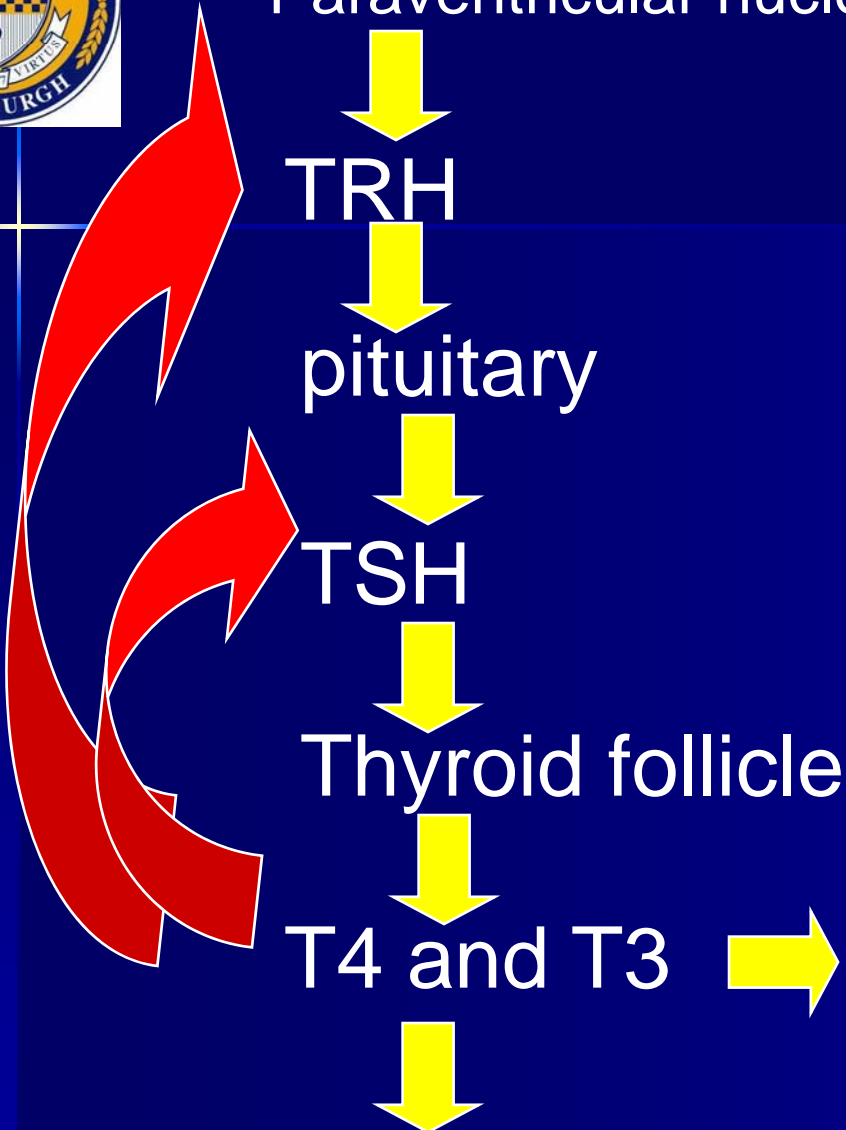
TSH

Thyroid follicle

T4 and T3

Target tissue

Liver conjugation





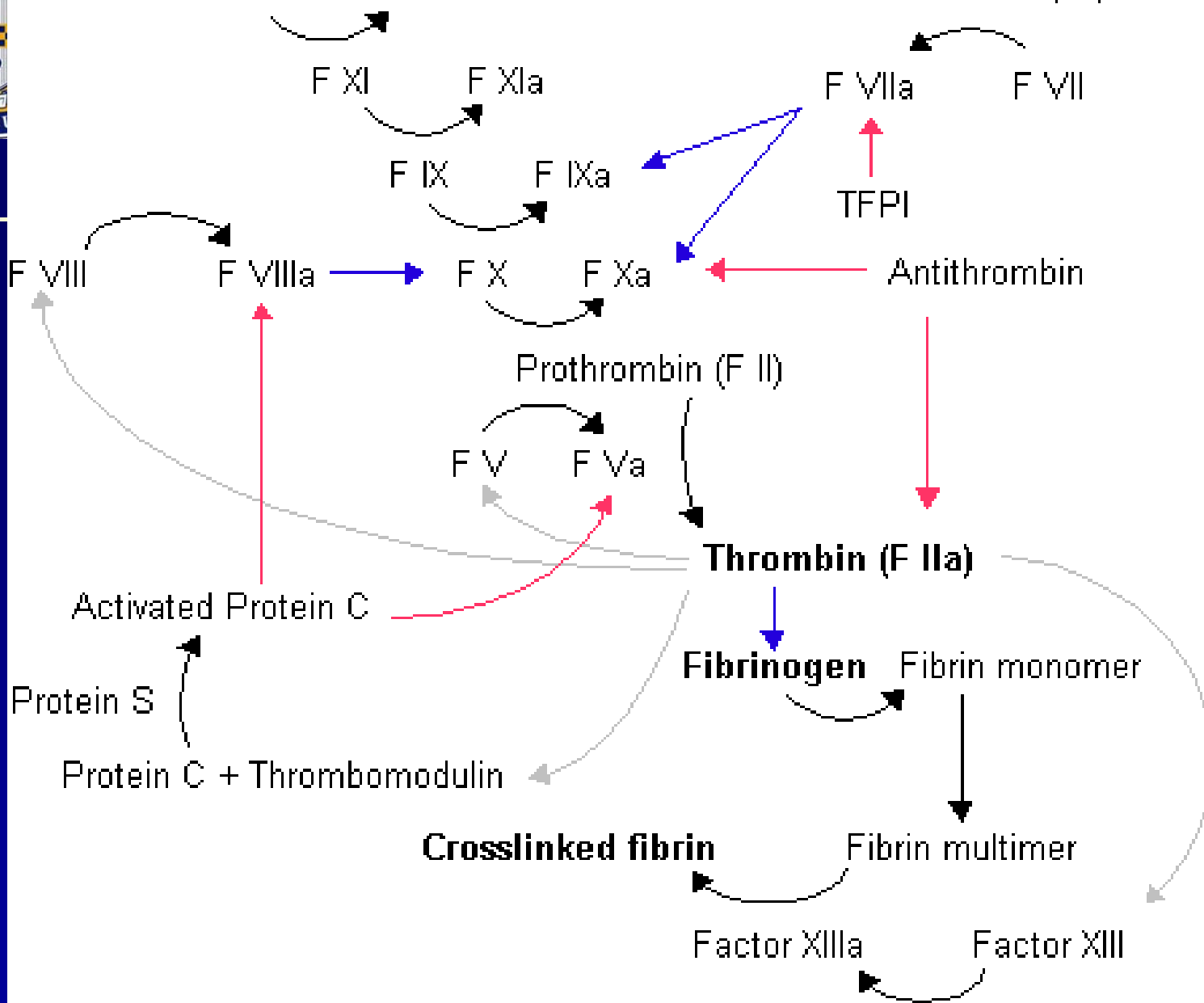
Contact system:

HMWVK, PK, F XII

F XIIa, Kallikrein

Cellular injury:

Tissue Factor (TF)





4 important principles

- Slides should be simple
- Slides should be legible
- Progressive disclosure
- **See/hear compatibility**



WHAT YOU SEE AND WHAT YOU HEAR SHOULD BE COMPATIBLE

- the blank slide
- “B” or “W”
- PowerPoint with slide ins





HANDOUTS

- Handouts are a good idea
- Should have summary of major points
- Variety of styles
 - copies of slides with place to write notes
 - overall outline with space to write note
- Bibliography (brief) if applicable
- Summary points
- The art of knowing when to hand them out



YOU THINK YOU'RE DONE





REFLECTION

- Self evaluation
- Evaluation by your learners
- Outside evaluation by colleague or educational service (videotape)





COMMON PROBLEMS

- covering too much material
- speaking too quickly (anxiety)
- speaking too quickly (compensation for too much material)
- reading from the text
- speeding up at the end
- introducing a key point in the last minute
- encouraging passivity
- going over your time
- something goes wrong with the AV equipment



always have a printed copy of all your slides in case AV projector/LCD fails



■ How can we improve

– Patricia Hayes, Dept of Speech Communication, Indiana U

- Acknowledging/dealing with speech anxiety
- Anticipating the teaching environment
- Planning carefully for each lecture
- Combining lecturing with other teaching techniques
- Use visual aides
- Deliver the lecture extemporaneously
- Demonstrate respect for student reactions
- Seek feedback on teaching



SUMMARY

- 1. Lectures are an efficient way to transmit information or synthesize information not available in other sources. They work best for the cognitive domain**
- 2. Lectures full of content but without ways to attain and maintain attention or to enhance active learning are less effective.**



SUMMARY

- 3. Begin preparation by asking and answering 4 questions: audience, objectives, resources, competency**
- 4. Do something every 15-20 minutes to bring back the audience to you. Plan for some active participation if possible.**



6. The 4 important principles of good slides are simplicity, legibility, progressive disclosure and see/hear compatibility.
7. Self, student and outside evaluations are priceless.



Challenge

- Attend any lecture in your department over the next 3 weeks. This time, don't concentrate on the CONTENT of the lecture but actually the lecturing process itself. Critique the lecture, thinking about what was done well or what you could have done to make the lecture better.
- Ask a colleague to sit through one of your lectures. Ask him/her to give you honest feedback.
- Videotape your next lecture and watch it.



- “When an artist won first award in an art fair and the judge presented her with the prize, the artist said, “You know, I didn’t submit my best work!” The surprised judge asked, “Well, why not?” She replied, “Because I haven’t done it yet.”
- ...None of us have done our best teaching...yet.
- Whitman, NA. There is No Gene for Good Teaching. A Handbook for Lecturing for Medical Teachers, 2nd edition