Preparing and Presenting an Effective Lecture

There is no cookie cutter approach
Know the Material

• Demonstrate confidence
• Review the material
• Practice your lecture
• Revise if necessary
• Be passionate
Know the Room

- Learn the lecture room
- Arrive early
- Walk around the speaking area
- Practice with the AV equipment
Detach Yourself From Your Own Interests

• Consider the needs of the students

• Don’t teach material that’s only of interest to you

• Theory and science not applicable to patient care are okay, but …

• Put yourself in the position of the student

• Know the audience
Choose Your Material Carefully

• Limit amount of material
  – Include all necessary material
  – If excessive, little is learned

• Limit complexity of material
  – Avoid
  – Simplify
  – Explain
Target Audience

- Any student that wants to learn

- Donald Seldin: “Teach to the least intelligent student in the class. Anyone can teach a genius. What separates good teachers from great teachers is the ability to teach students at the lower end of the class.”
Engage the Students

• Make the students partners with you regarding the subject

• Give them a reason to care

• Explain to the students why they should be interested in the material
Engage the Students

• Make eye contact
• Use your hands
• Move
• Face the audience
• Use the laser pointer minimally
Engage the Students

• Humor
  – Spontaneous
  – Relevant
  – Balance entertainment with information
  – Medical cartoons available on internet

• Enthusiasm
  – Be interested in material
  – Be interested in teaching
"Bummer of a birthmark, Hal."
Engage the Students

• Pay attention to the audience

• Modify your speaking style and actions based on audience response

• State rhetorical questions from the student’s point of view
Attitude

- Relax
- Exercise
- Mentally walk your way through the experience step by step
- The audience wants you to succeed
- Don’t apologize
- Turn nervous energy into enthusiasm
- Gain experience and training
Voice Tips

• Adequate speaking level
• Microphone
• Articulate every word
• Don’t speak with too many words in one breath
• Rest your voice
• Keep water available
Voice Tips

- Avoid alcohol and caffeine before speaking
- Be rested
- Don’t smoke
- Avoid eating or drinking just prior to lecture
- Treat or avoid heartburn
Slides

• Slides can be deadly
  – Students need to listen to you and think
  – Too many words → too much writing
  – Reflex pathway

• Slides are okay if best for presenting information
  – Not just for your convenience
  – Displaying images
  – Put them in the syllabus or handout
Slides

• Don’t include material you won’t discuss
  – Distracting
  – Don’t use old slides

• “I apologize for this slide.”
  – Unacceptable expression
  – Don’t apologize. FIX IT!
Slides

• A font size of 32 is ideal

• 28 font is also easy to see

• Font size 24 is acceptable

• A font size of 20 may be difficult to see from the back of a large room

• Forget about size 16 font or lower, unless it is a disclaimer that you don’t want the audience to read

• The authors of this presentation are not responsible for any disasters that may occur during your future lectures
Slides

• Keep the background simple
• Use just one or two colors for fonts
  – Avoid dark colors
  – Use bright colors
• Use light font on a darker background
• Color blind students
• 12 lines per slide, if possible
• List the main point on each bullet, then expand on it verbally
• Minimize movement and audio if it distracts from your message
Examples of Bad Slides

We’ve all used these!
Resistive Exercise Instructions for Older Participants

- The participant should perform at least a 10-minute full-body warm-up before each resistive exercise session, to include flexibility exercises.
- The participant should be instructed to breathe normally or exhale during muscle contraction, without breath-holding.
- Have the participant maintain a loose, comfortable grip during muscle contraction on each resistive modality.
- The participant should perform lifting movements through a complete range of motion, or their "pain-free" zone.
- Machine and free weights should be lifted smoothly to a count of two, held for a count of one, and then lowered slowly to a count of four.
- All major muscle groups should be exercised—large muscles should be worked before smaller muscles.
- The participant should learn and practice proper form and technique on each piece of strength training apparatus.
- The participant should never drop the free weights or bang the machine weights.
- The participant can avoid injury by adhering to the instructions of the health professional and by adhering to the written instructions at the weight station.
- Resistive exercise should be terminated if the participant develops symptoms of intolerance, such as chest pain, dizziness, faintness, fatigue or joint/muscle pain.
- Never permit the arthritic participant to perform strength training exercises during periods of inflammation.
- The participant should record the amount of resistance (e.g., the number of machine plates, color of elastic band), the number of repetitions and the number of sets performed on a recording form provided by the health professional. This record should be maintained over time to record weight progression or regression.

Source: Verrill, 2001
Sequence Analysis Overview Flow Chart

1/30/01

Sequence Assembly and Editing
(Project Management)

Enter Sequence into the Computer
(Manual, Gel Reader, Automated,
Download from Database)

Sequence Database
(Browsing/Retrieval)

Nucleotide Sequence Analysis

Search Sequence Databases
(Nucleotide and Translations of all ORFs)

Pairwise Alignment
Sequence Comparison

Search for Known Sequence Motifs

RNA Structure Prediction

Pairwise Alignment
Sequence Comparison

Create and Edit Multiple Sequence Alignment

Format for Publication

Molecular Phylogeny

Protein Sequence Analysis

Search for ORFs & Coding Regions
(ORF ID, Exon, and Gene Prediction)

Coding Region

Non-coding

Translate into Protein

Protein Sequence File

Protein Properties
Maps
Proteomics

Search Databases for Similar Sequences

Pairwise Alignment
Sequence Comparison

Search for Motifs

• Consensus and Motif Derivation
• Protein Family Analysis

Predict Secondary Protein Structure

Predict Tertiary Protein Structure
Blackboard

• Advantages of the “blackboard”
  – You can’t write faster than the students can
  – Allow them to relax and listen to you
  – The time and effort it takes to write on the board causes you to limit what you write
    • The material eliminated is generally not missed by anyone
Above All...
Be Yourself