

**Supporting
Health Care and Medical Physics
Around the World Through
Collaborative Teaching**

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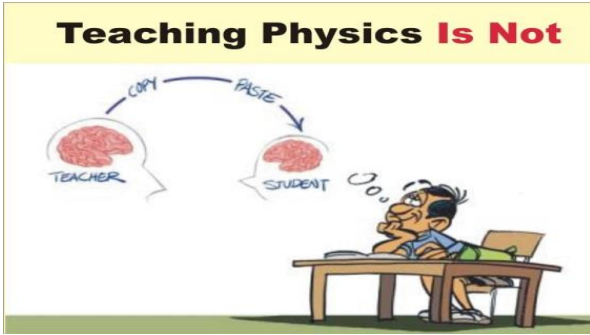


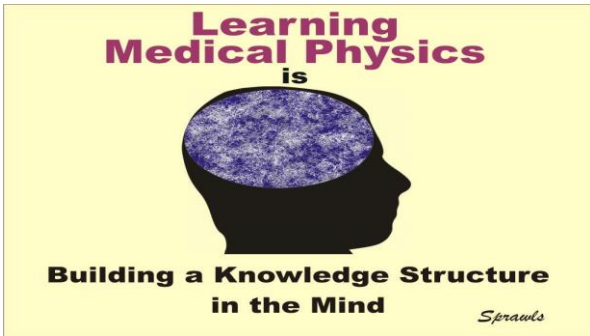

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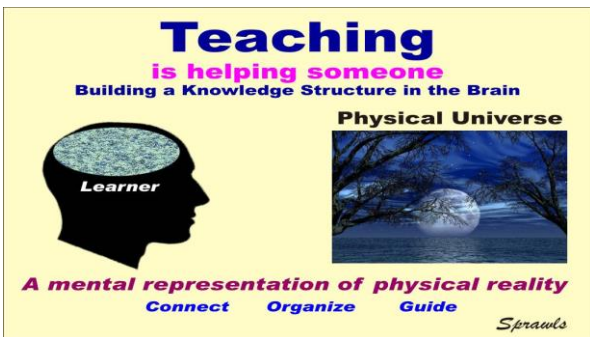
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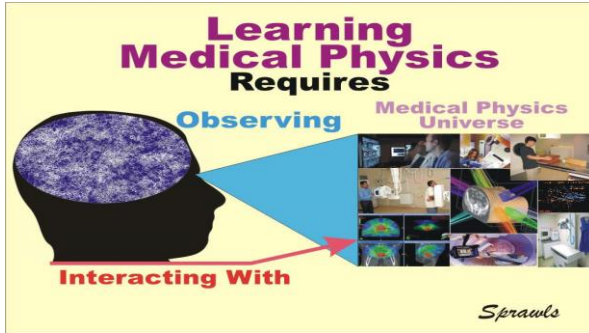
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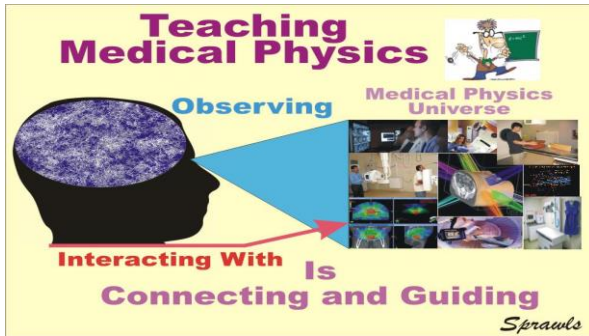
**The Model
Method
Results**

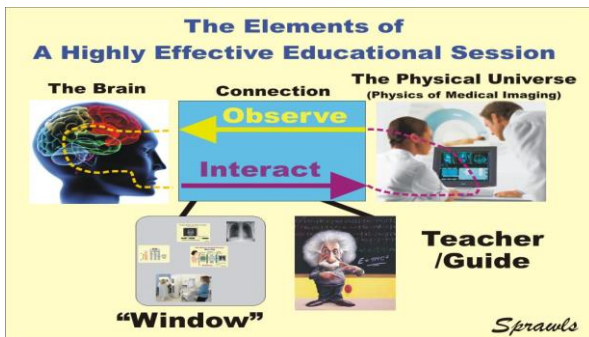













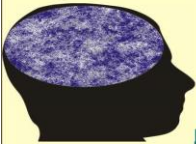
The Traditional Classroom

“ A Box for Enclosing Students...”




**And hiding them from the world
about which they should learning.**

Teaching Medical Physics




“Window”




Provide Window

Guide the Learning Process

Teacher must




Medical Physics Universe



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Rich Classroom and Conference Learning Activities

Learning Facilitator
“Teacher”

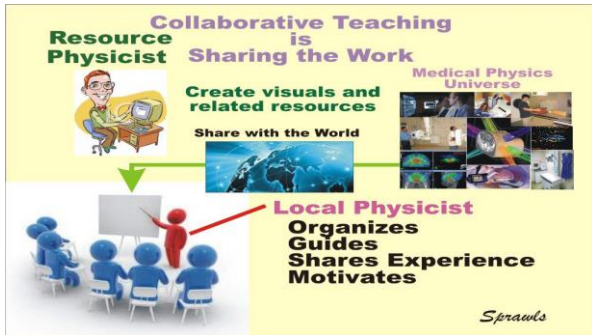


Visuals

Representations of Reality

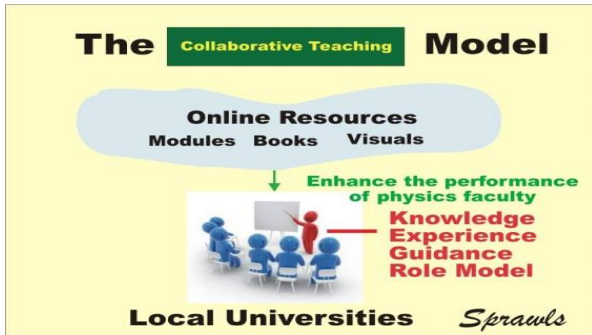
Organize and Guide the Learning Activity
Share Experience and Knowledge
Explain and Interpret What is Viewed
Motivate and Engage Learners

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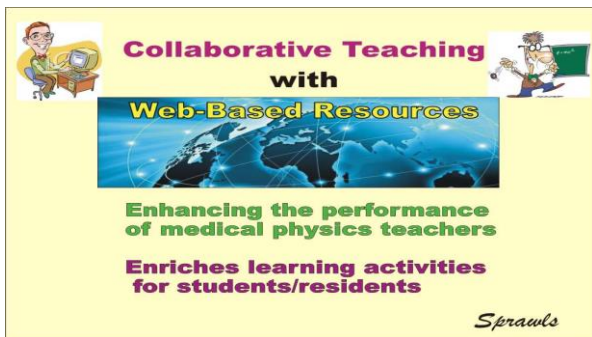






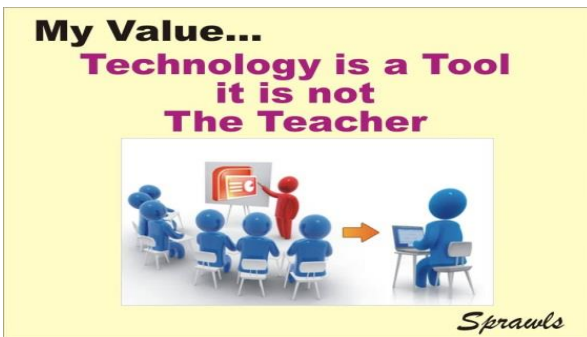






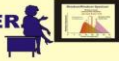






The Values We Hold

The **PHYSICIST** is the **TEACHER**



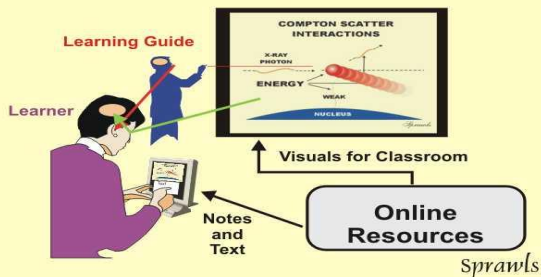
TECHNOLOGY is the **TOOL** that can be used for effective and efficient teaching.

Technology should be used to enhance human performance of both learners (residents, students, etc.) And teachers



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Technology Enhanced Learning



Rich Classroom and Conference Learning Activities

Learning Facilitator "Teacher"



Visuals
Representations of Reality

Organize and Guide the Learning Activity
Share Experience and Knowledge
Explain and Interpret What is Viewed
Motivate and Engage Learners

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Visuals
for
Effective and Efficient
Medical Imaging Physics Education
Provided by the
Sprawls Educational Foundation

Windows to the World of
Medical Imaging Physics

Window

Medical Physics Educator
Organizes
Guides
Shares Experience
Motivates
Role Model

www.sprawls.org/PhysicsWindows

Medical Image Quality Characteristics

The visual provided here was designed to be used in direct and other learning activities that introduce the learner students to the overall characteristics of medical images. The individual characteristics will be covered in more detail in other modules.
Richard O'Brien, MSc, PhD, SPRAWLS Educational Foundation, SPRAWLS Educational Foundation

THE MEDICAL IMAGE
A Window Into The Human Body

IMAGE QUALITY
VISIBILITY
of
Anatomy and Signs of Pathology

IMAGE QUALITY CHARACTERISTICS
THAT AFFECT VISIBILITY

What Determines Visibility?
Characteristics of Objects in the Body That Affect Visibility

www.sprawls.org/resources

SPRAWLS EDUCATIONAL FOUNDATION
Open Resources
for
Learning and Teaching
The Physical Principles of Medical Imaging

PHYSICAL PRINCIPLES of MEDICAL IMAGING
Second Edition
Perry Sprawls, Jr.

Magnetic Resonance Imaging
Perry Sprawls, Jr.

Online Textbooks

File View History Bookmarks Tools Help

The Physics and Technology of M... GA

SPRAWLS INTERNATIONAL FOUNDATION
 Physics and Technology
The Physical Principles of Medical Imaging

Mammography Physics and Technology
 for effective clinical imaging
 Perry Sprawls, Ph.D.

Outline Mind Map Learning Objectives Visuals for Discussion Text Reference

To step through module, [CLICK HERE](#)
 To go to a specific topic click on it below

Imaging Objective	Electron Source	Blurring and Visibility of Detail
Visibility of Pathology	KV Values for Mammography	Focal Spot Blurring
Image Quality Characteristics	Scattered Radiation and Contrast	Receptor Blurring
Not a Perfect Image	Image Exposure Histogram	Composite Blurring
Mammography Technology	Receptor & Display Systems	Magnification Mammography
Imaging Technique Factors	Film Contrast Transfer	Mean Glandular Dose
Contrast Sensitivity	Film Contrast Factors	
Physical Contrast Compared	Film Design for Mammography	
Factors Affecting Contrast Sensitivity	Controlling Receptor Film Exposure	
X-Ray Penetration and Contrast	Film Processing	
Optimum X-Ray Spectrum	Variations in Receptor Sensitivity	
Effect of Breast Size	Film Viewing Conditions	

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**The Model
 Method
 Results**

**Sprawls
 Collaborative Teaching Network**

Live Visitor Map, July 25, 2016

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