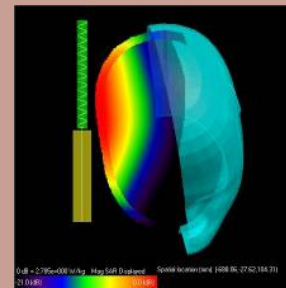
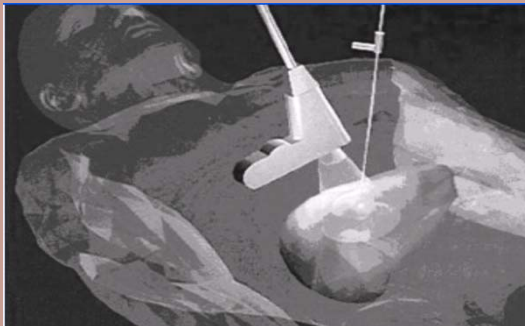
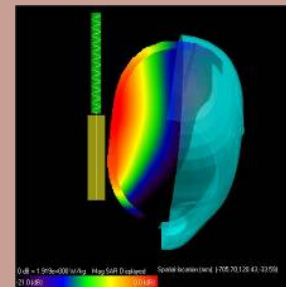
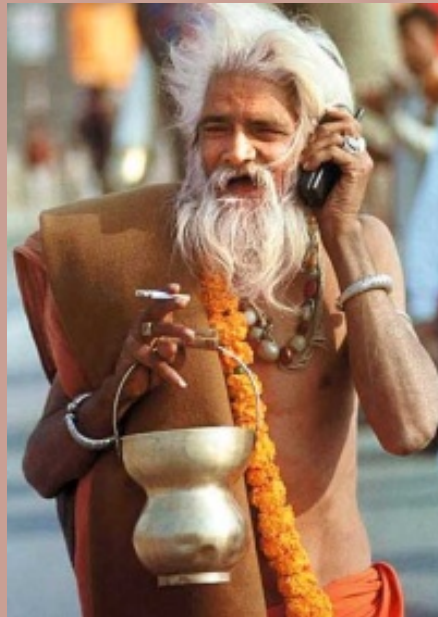


# WELCOME

## Workshop: Thermal Aspects of Radio Frequency Exposure



# Participants

## Academia

- Dartmouth
- Harvard
- U Michigan
- UCLA
- U Maryland
- U Pennsylvania
- U Bordeaux
- Duke U
- Temple U
- UC London
- U Rochester
- Roswell Park Can Inst
- UC San Francisco
- University Uppsala
- Nagoya Inst Tech
- INERIS, France
- Chungbuk Nat'l U

## Government

- US FDA
- US FCC
- US EPA
- Nat'l Inst Drug Abuse
- Nat'l Inst Athletic Health
- US NIH
- US NCI
- UK HPA
- German BfS
- Health Canada
- Health Council  
Netherlands
- ARPANSA
- Japan EMF Info Center
- Nat'l Inst Comm Tech  
(Japan)

## Military

- US Army Med Res Detach  
(Brooks AFB)

## Industry

- Motorola
- Nokia
- Ericsson
- France Telecom
- Siemens
- Cisco
- Alcatel-Lucent
- Nextel
- Mobile Manufacturers  
Forum
- GSMA Association
- IT'IS Foundation
- Industry Canada
- Philips Medical
- nContact Surgical
- Ethicon Endo-Surgery
- Procter & Gamble

# Format of the Workshop

- Session 1: Scope of the Workshop
- Session 2: Whole body heating issues
  - **DISCUSSION BASED**
- Session 3: Immune System
  - Presentation
- Session 4: SAR vs temperature, simulation tools
  - Presentation
- Session 5: Local heating issues
  - **DISCUSSION BASED**
- Session 6: Group Discussion / Consensus

# Breakout Sessions

- Monday 11:00AM – 12:15PM
  - 2A: Cardiovascular System (Montgomery)
  - 2B: Behavior (Rockville Potomac)

**Lunch 12:15-1:15PM (continue discussion)**

- Monday 1:15 – 3:00PM
  - 2C: Pregnant Women / Fetus (Montgomery)
  - 2D: Children (Rockville Potomac)

**Break 3:00-3:15PM (continue discussion)**

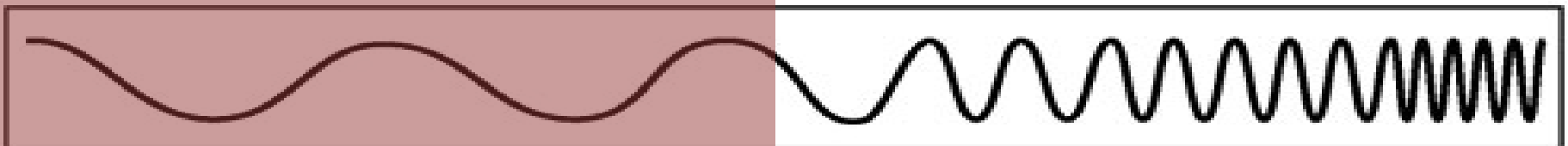
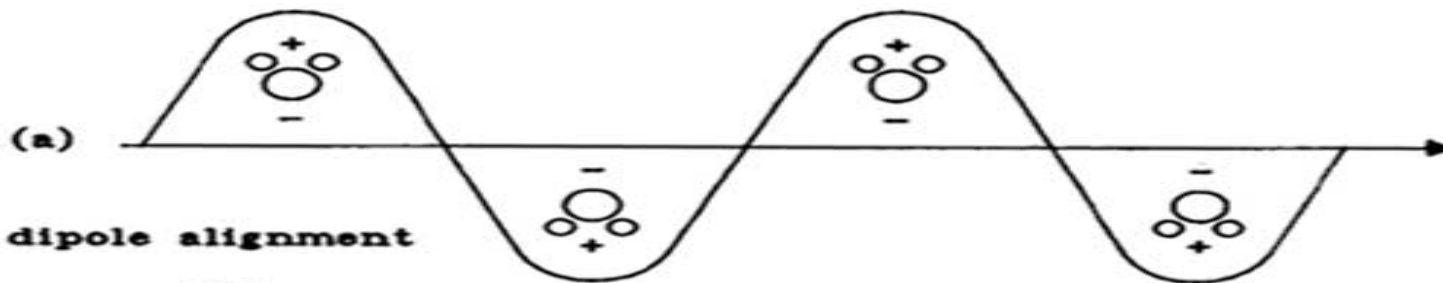
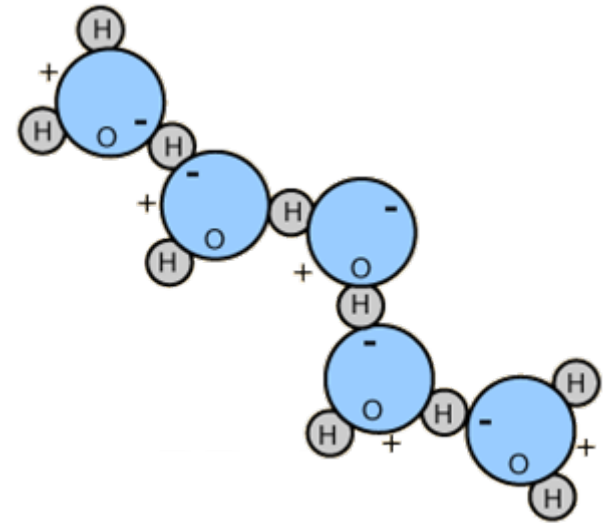
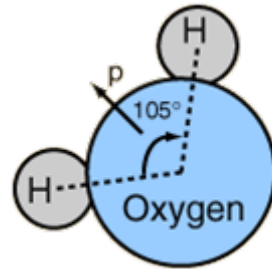
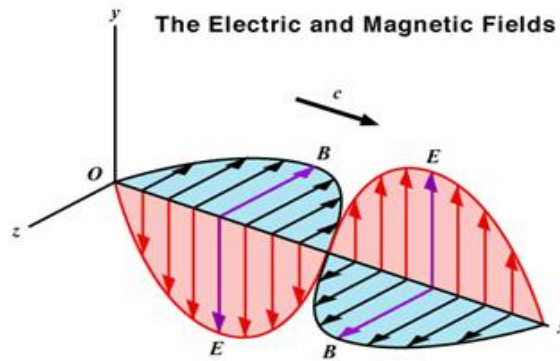
- Tuesday 1:15-3:00PM
  - 5D: Skin (Montgomery)
  - 5E: Testes (Rockville Potomac)

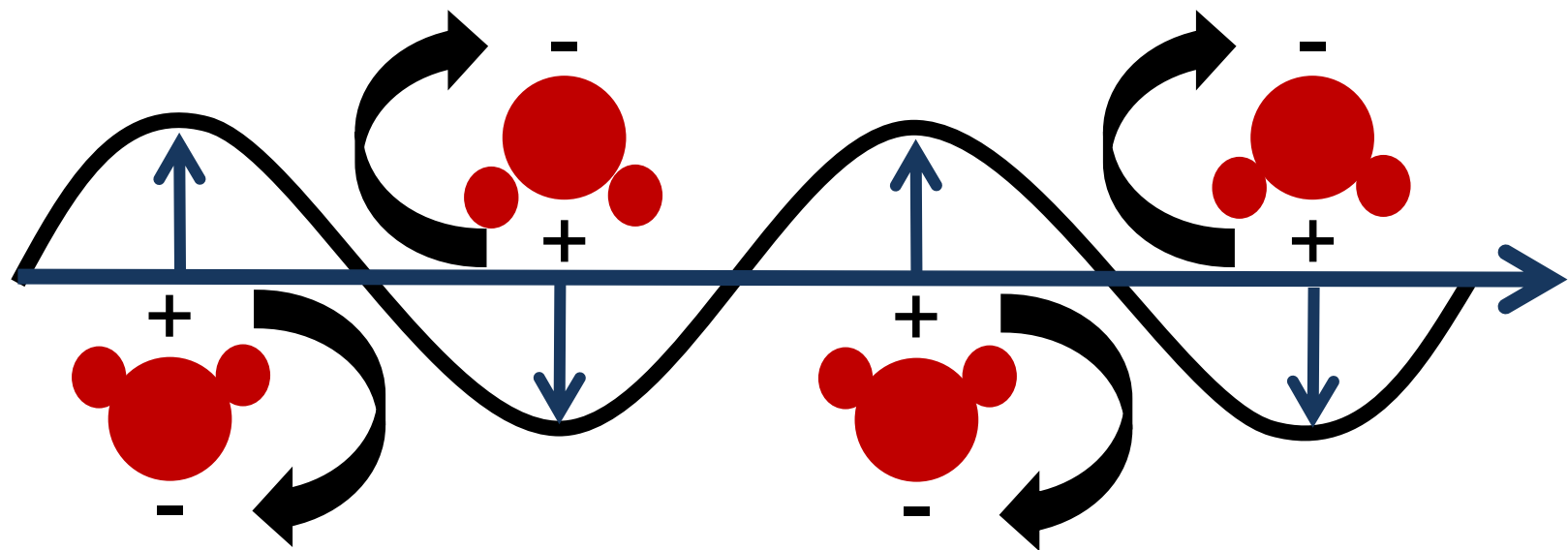
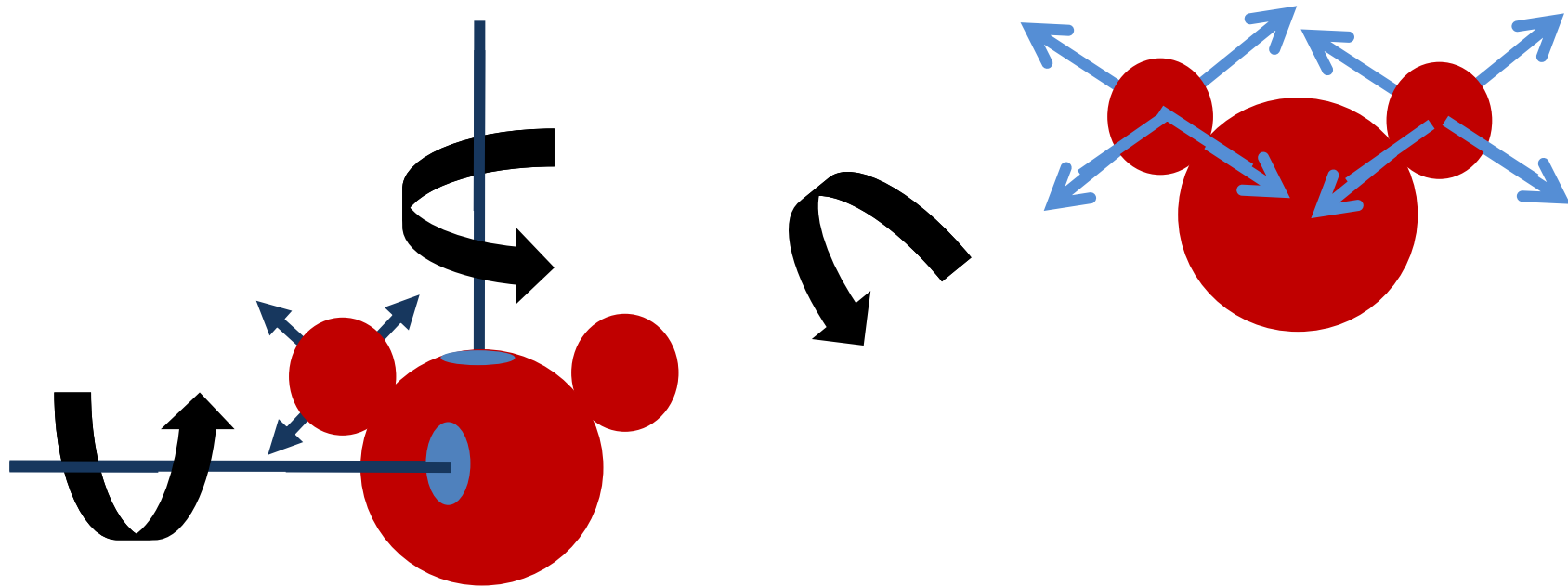
**Break 3:00-3:15PM (continue discussion)**

# GOAL Questions

- What are the most appropriate health endpoints for a given tissue / system ?
- What are the most appropriate time periods for acute and chronic exposure ?
- Are there any well established time-temperature thresholds ?
- Cost effective and targeted research to better define time-temperature thresholds in support of human exposure standards ?
- Support / contrast with the REPORT

# Focus on Thermal Interactions





# What is the Direct Application of the Workshop on Human Health ?





# Prior US Congressional Hearing

## September 25, 2008



- Senator Dennis Kucinich (D-Ohio)
  - Chair, Domestic Policy Subcommittee (Oversight and Government Reform Committee)
  - Jurisdiction: domestic policy on energy, labor, education, criminal justice, economy, and drug control

- **Hearing “Brain Tumors and Cell Phone Use: What Science Says”**

“... Recently, the [cell phone brain tumor] debate caught the public's attention with the publication in July of a warning from a preeminent oncologist about the human health effects of cell phone use...”

“The question ... is whether the evidence is sufficient to merit action by regulators and legislators to protect public health ? What have other national government health authorities done ... ? What should Congress or the Administration do, if anything, here in the United States?”

# US Congressional Hearing

## September 15, 2009



### Senator Arlen Specter (D-Pennsylvania)

- Chair, Subcommittee on Labor, Health and Human Services, and Education
- Currently on Senator Specter's [website](#)

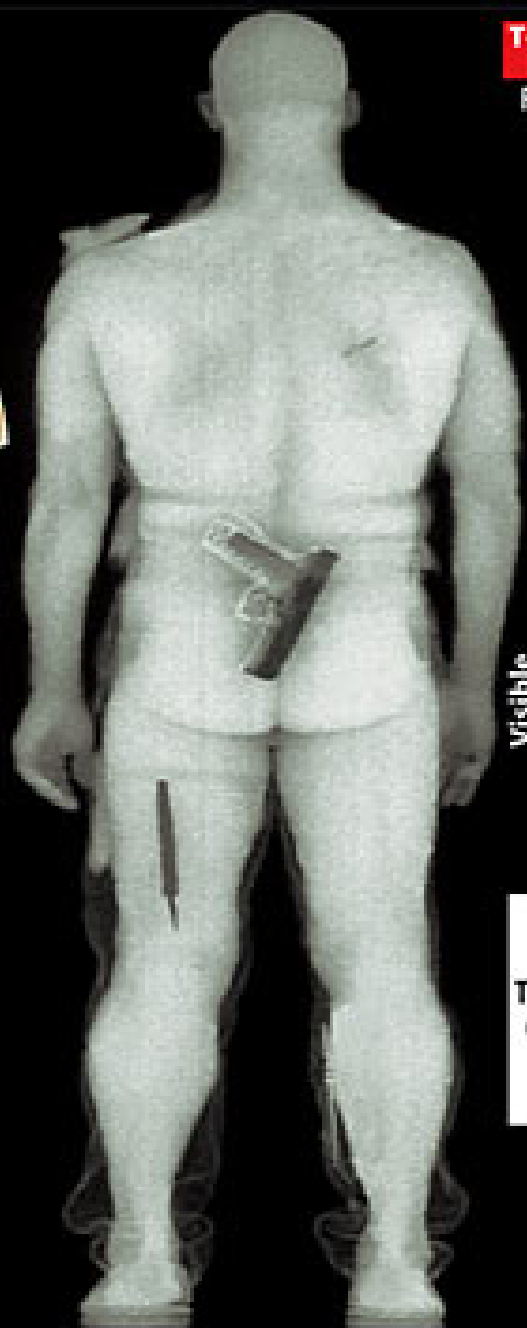
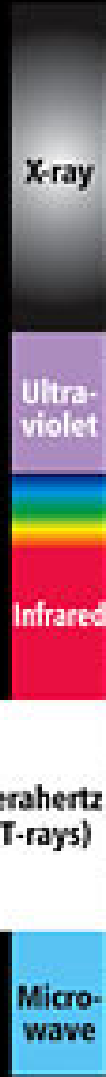
- **Hearing “Expert Conference on Cell Phones and Health: Science and Public Policy Questions”**

### **Panelists**

- John Bucher (Assoc Director NTP, USA)
  - Dariusz Leszczynski (STUK, Finland)
  - Siegal Sadetzki (Gertner Inst, Israel)
  - Linda Erdreich (Exponent, USA)
  - Devra Davis (Environ Health Trust)
  - Olga Naidenko (Environ Working Group, USA)
- not meant to be "inflammatory" or to make "stark statements," but to address a "serious question that deserves a serious answer"

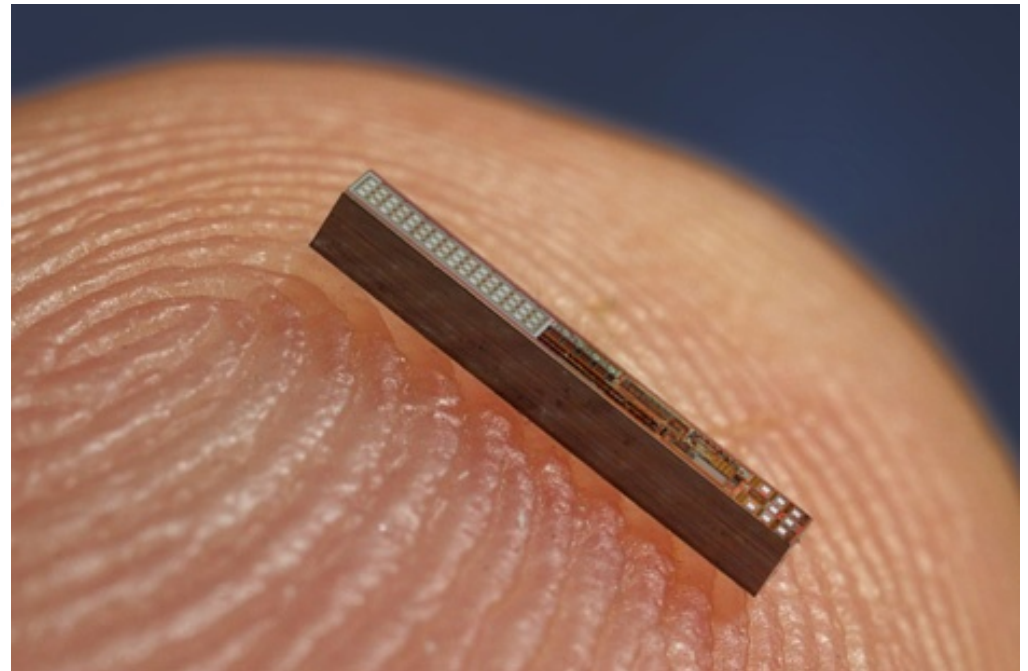
# T-RAYS ON THE SPECTRUM

Frequency (Hz)

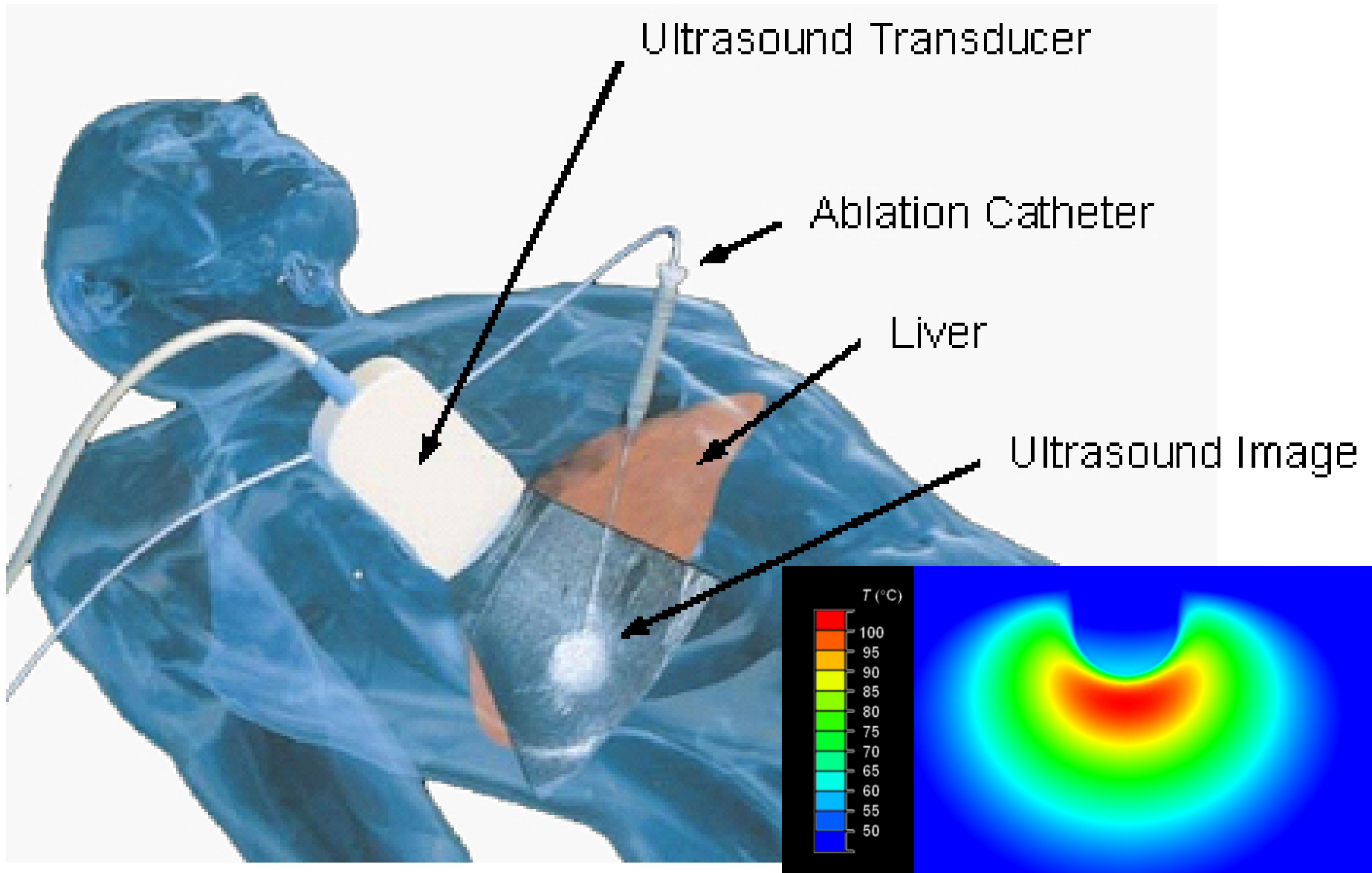


Naked gun: airport T-ray scanners will be able to see through clothes to find hidden weapons

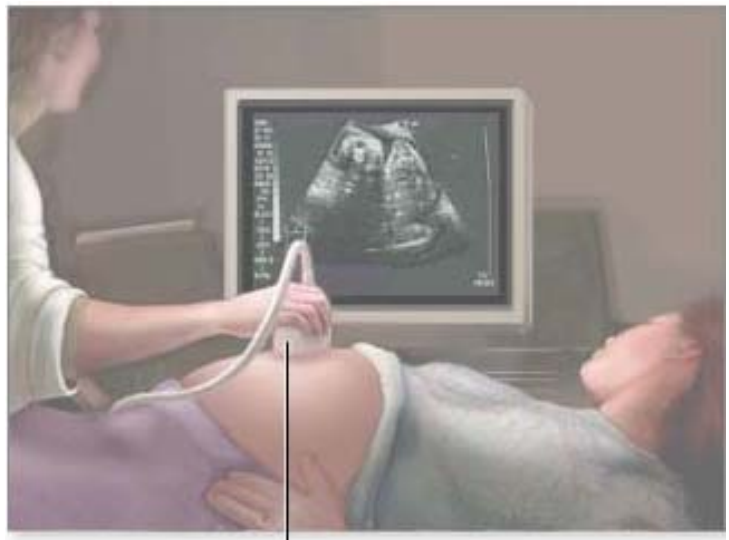
# Implantable Wireless Medical Devices



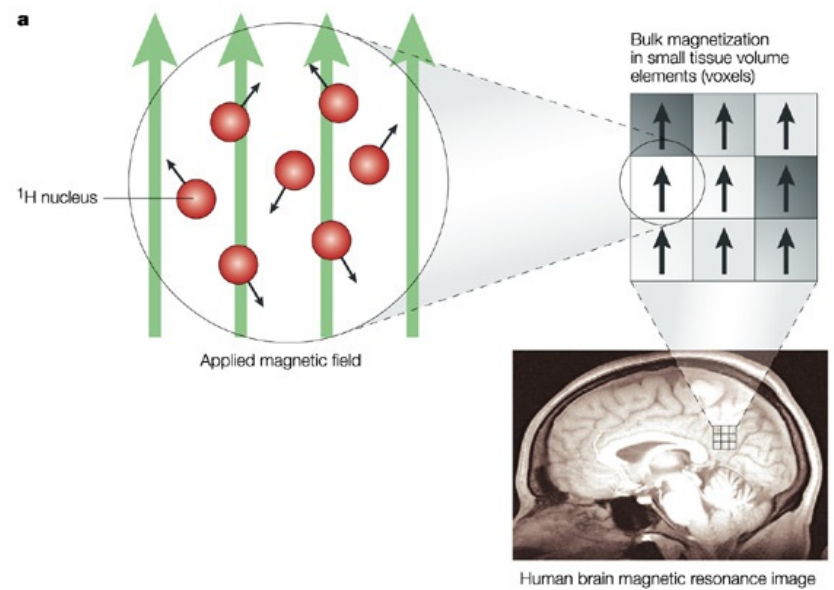
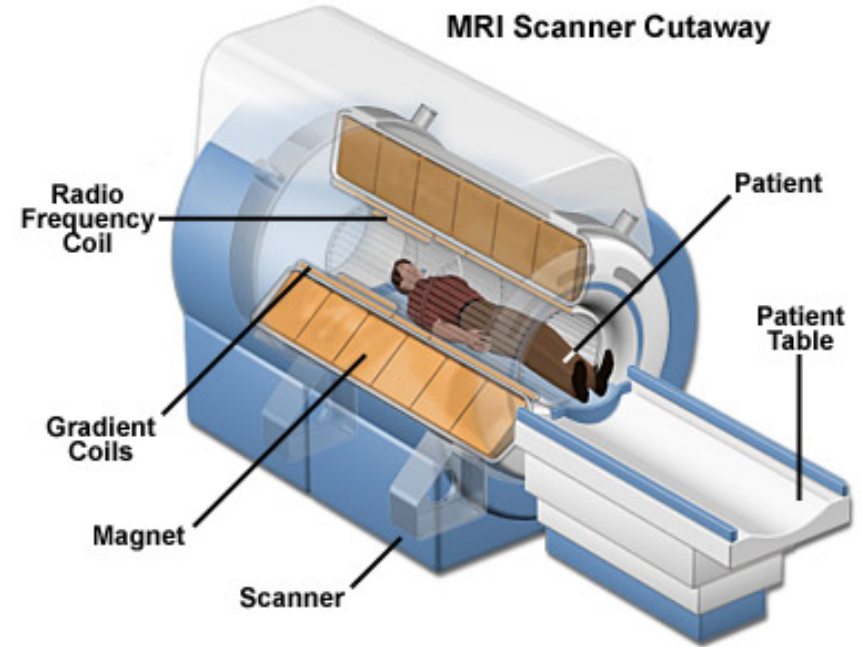
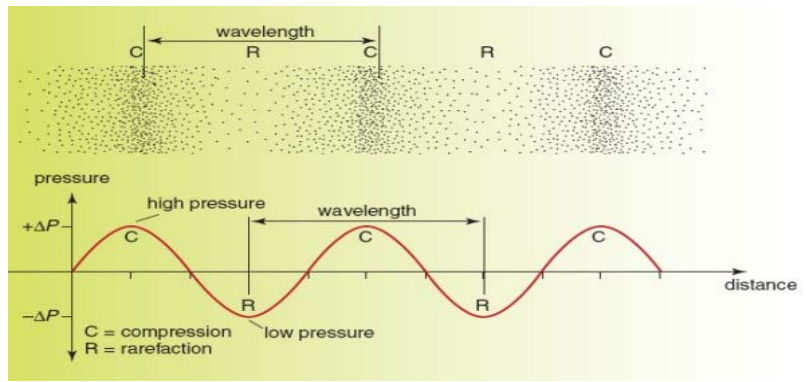
# Radiofrequency Ablation



# Medical Imaging



Transducer



Human brain magnetic resonance image

