

# LASER SAFETY FOR INDUSTRY AND RESEARCH AGENDA ♦ OCTOBER 20 – 21, 2009

## TUESDAY

OCTOBER 20, 2009

7:30

*Registration*

8:00

**Introductions and Course Agenda**

**Review of Laser Physics**

- **Models for Understanding Electromagnetic Radiation**
- **Geometric Optics**
- **Spontaneous and Stimulated Emission**

10:00

*Break*

10:15

**Laser Operation and Laser Types**

- **Light Amplification by Stimulated Emission of Radiation**
- **Laser Types**
- **Laser Characteristics**
- **Radiometric Units**

12:00

*Lunch*

1:00

**Laser Biological Effects**

- **Photochemical and Thermal Mechanisms**
- **Eye and Skin Effects**

3:00

*Break*

3:15

**Laser Safety Standards and Regulations**

- **Federal, State, and Local Regulations**
- **ANSI Z136 Series of Standards for the Safe Use of Lasers**
- **International Laser Safety Standards**
- **Laser Hazard Classification Schemes**

5:00

*Adjourn*

## WEDNESDAY

OCTOBER 21, 2009

8:00

**Fundamental Principles of Laser Safety**

- **Maximum Permissible Exposure**
- **Nominal Ocular Hazard Distance and Nominal hazard Zone**
- **Optical Density**
- **Performing Hazard Calculations**

10:00

*Break*

10:15

**Laser Safety Program Elements and Control Measures**

- **Laser Safety Program Overview**
- **Beam Path Enclosures**
- **Control Measures for Unenclosed Beams**
- **Personal Protective Equipment**
- **Non-Beam Hazards**

12:00

*Lunch*

1:00

**Conducting Laser Safety Audits**

- **Getting Organized**
- **Prewrite**
- **Site Visit**
- **Follow Up**

3:00

*Break*

3:15

**Accidents and Lessons Learned**

- **Who is Getting Injured**
- **Case Studies**

4:30

**Review & Conclusions**

5:00

*Adjourn*