

BioRisk is a two-day course which provides an overview of biotechnology concepts relevant to BioRisk and BioSafety issues encountered within research settings.

Day One

Industry Overview 9:00–10:30

Definition of Biotech
Industry Sector: Healthcare
Biotech's Driver: Research
Definitions of Biosafety/Biohazard/Biosecurity
Research Facilities: Biosafety Levels
Laboratory Equipment: BSC

Break 10:30–10:45

The Players 10:45–12:00

Research Support Companies
Contract Research Organizations (CRO)
Academic Laboratories
Private & Public Companies
Regulatory Sectors: FDA, NIH, CDC, EPA, USDA, OSHA
International Regulatory Agencies

Lunch 12:00–1:00

Biology Basics 1:00–2:00

Biotechnology Goals
Mammalian, Virus, Prion & Bacteria
Routes of Exposure & Particle Size
Personal Protective Expression

Break 2:00–2:15

DNA 2:15–4:15

DNA Structure & Function
DNA to Proteins
Protein Structure & Function
Genetic Mutations
Genetic Variation
Genetic Disease
Personalized Medicine

Q&A/Review 4:15–4:30

Day Two

Genetic Engineering 9:00–10:00

Plasmids
Recombinant DNA
Risk Assessment Requirements
Genetically Engineered Cells
Disease Models

Break 10:00–10:15

Immune System 10:15–12:00

Common Pathogens
Exposure to Foreign Agents
Risk Group Classifications
Risk Factors that Influence Exposure
Preventing Exposure
Non-Specific Immune Response
Specific Immune Response
Vaccines

Lunch 12:00–1:00

Stem Cells 1:00–2:00

Properties of Stem Cells
Types of Stem Cells
Cloning & Stem Cells
Therapeutic Potential

Break 2:00–2:15

Drug Development 2:15–4:00

Preclinical Trials
Animal Use Issues
Safety Review Boards
Clinical Trials
Generics & Biosimilars
Getting a Diagnostic to Market

Q&A/Review 4:00–4:30