



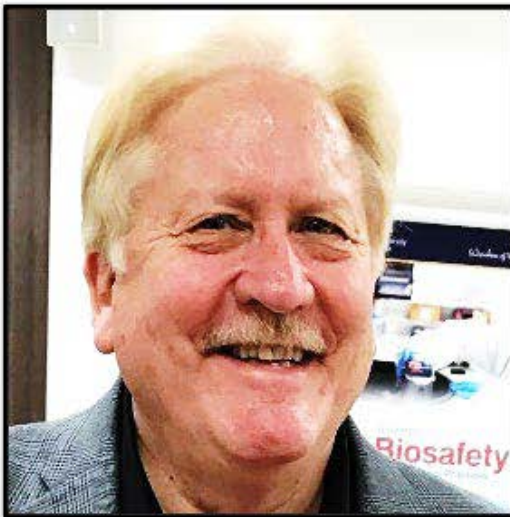
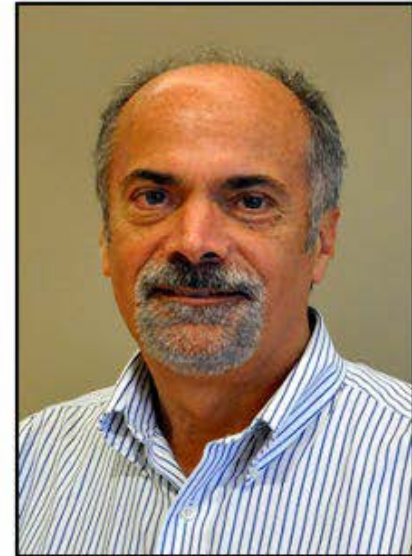
# Introduction to High Containment (BSL-3) and Animal Containment (ABSL-3) Facilities Design

**A New Course for Design Professionals**

**Meeting the UC Design Standard**

# Instructors

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# Course Objectives

Provide an in-depth foundation for BSL-3 facility design & engineering projects (New & Renovations)

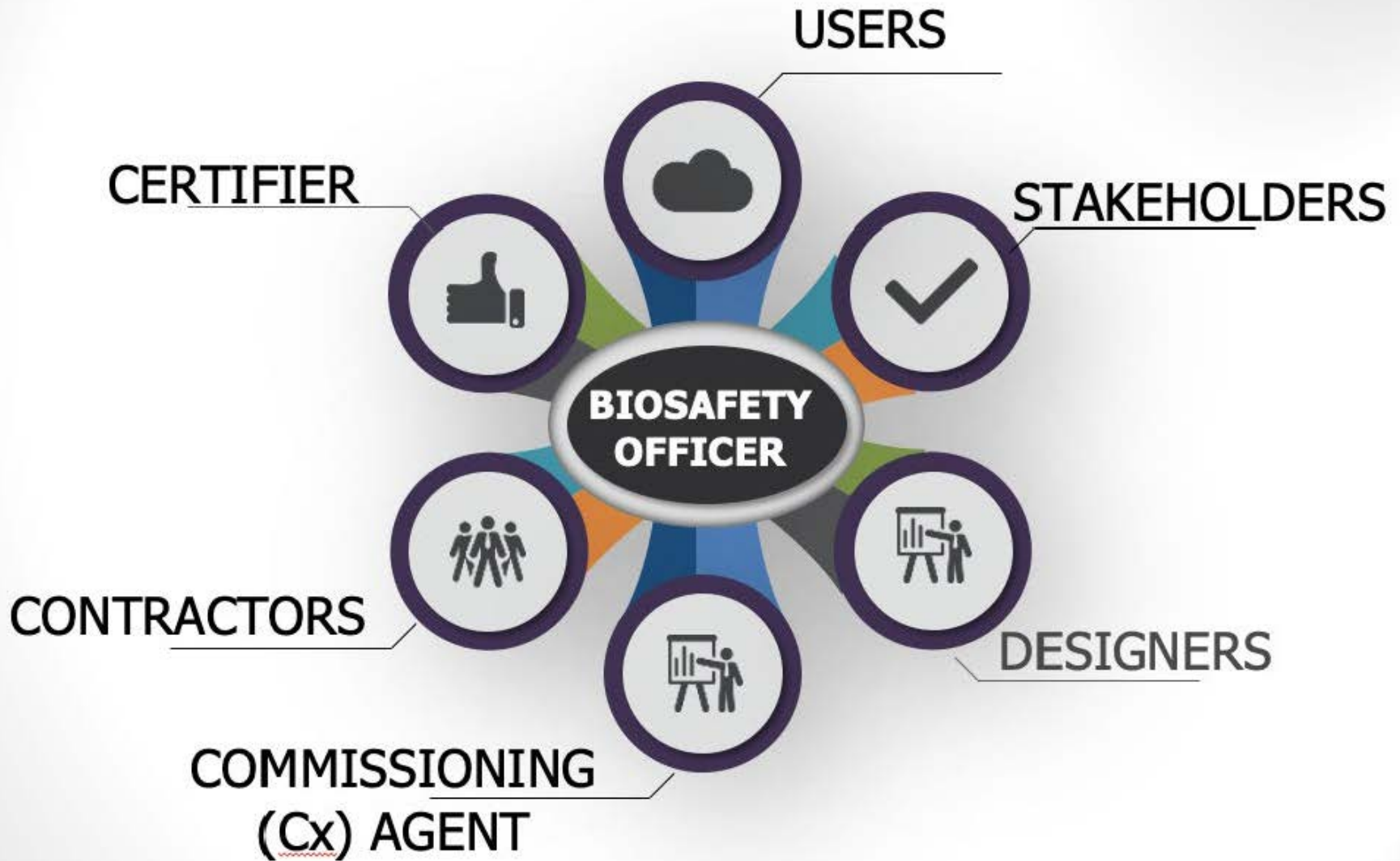
- Understand the Team Approach
- Identify the Process Steps
- Utilize a BioRisk process to evaluate requirements
- Construction issues
- Case studies
- Commissioning & Validation Requirements
- Group projects & exercises
- CEUs Awarded for successful completion

# Topics to be covered include:

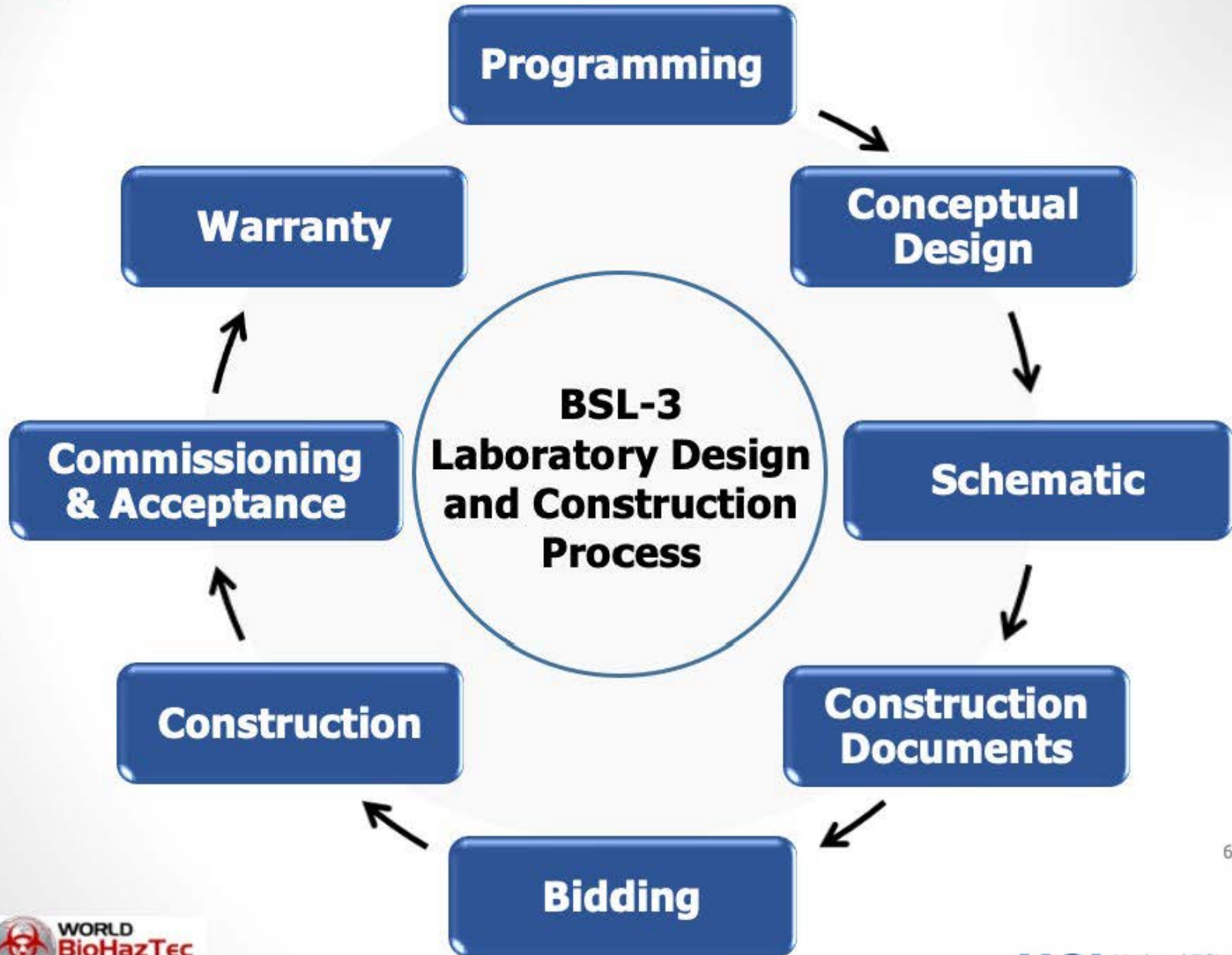




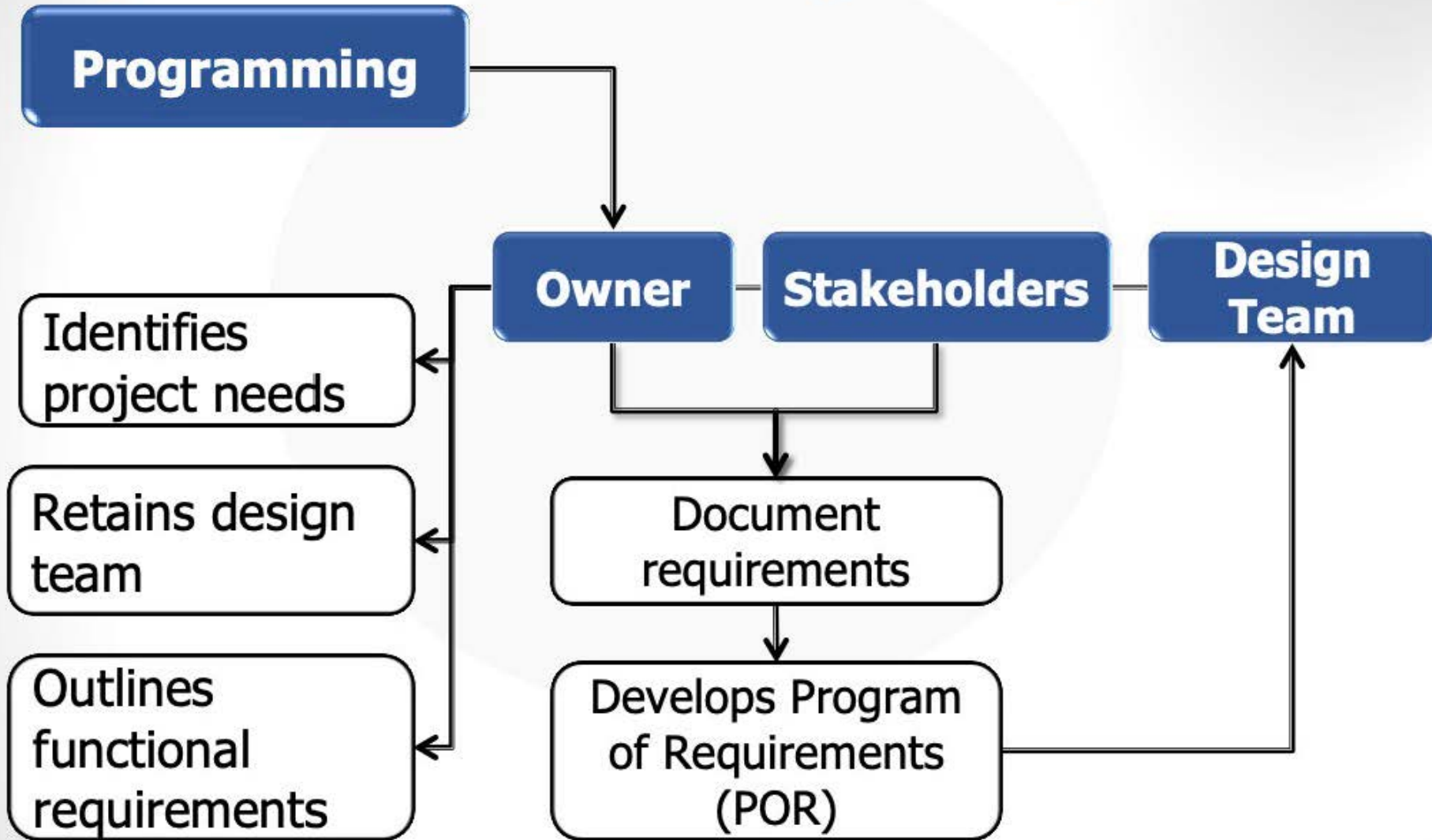
# Design and Construction – Team Approach



# Design and Construction – Phases



# Design and Construction – Programming



## **Program of Requirements (POR):**

Written documentation of:

1. Functional requirements
2. Expectations of how it will be used and operated



# Design and Construction – Risk Assessment

## The lab/facility

- Ventilation systems/controls/redundancy
- Fixed equipment
- Decontamination
- Alarms
- Biosecurity



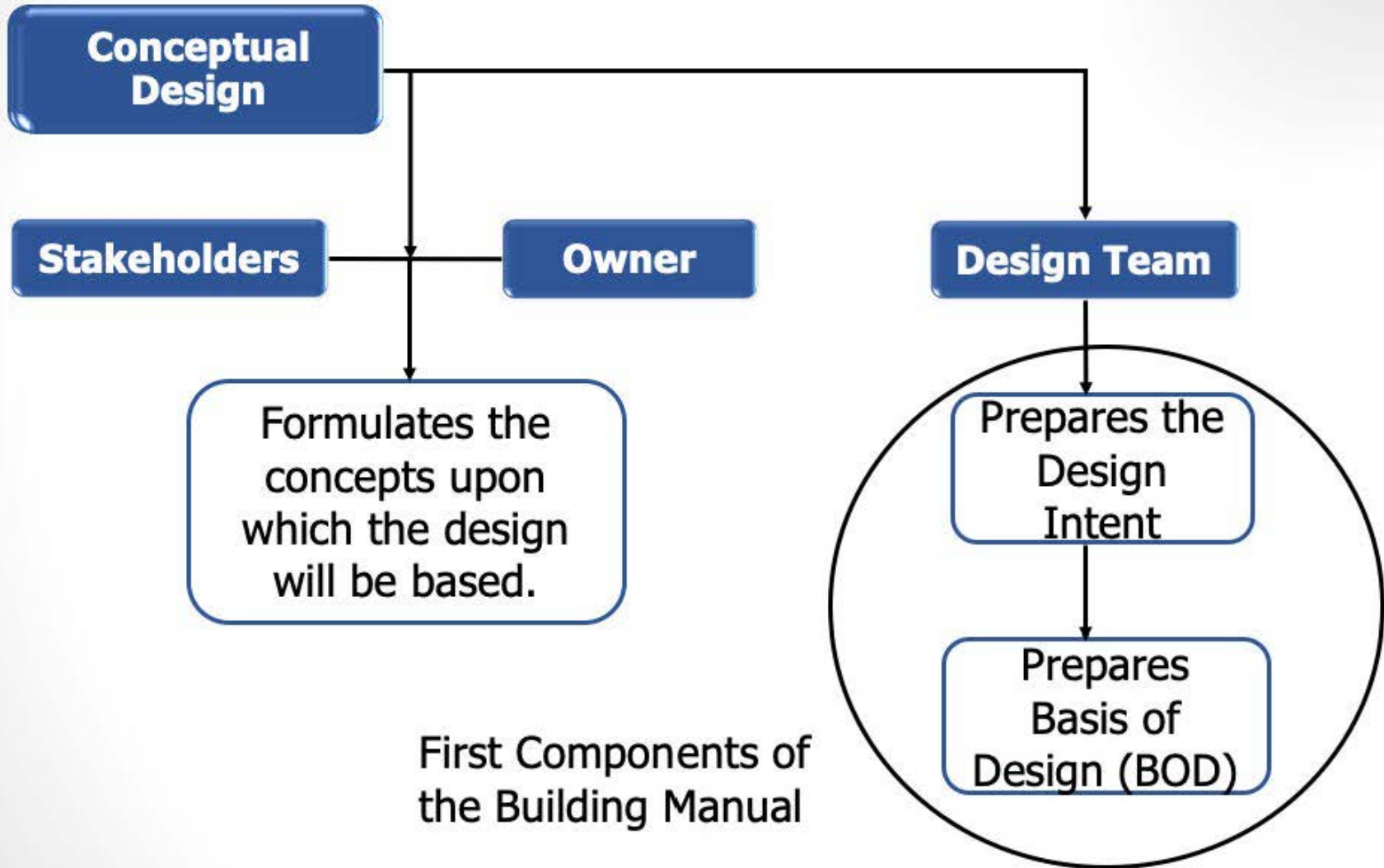
## The work within the lab

- PPE Selection
- Personnel
- Agents in use
- Procedures
- Equipment
- Animals

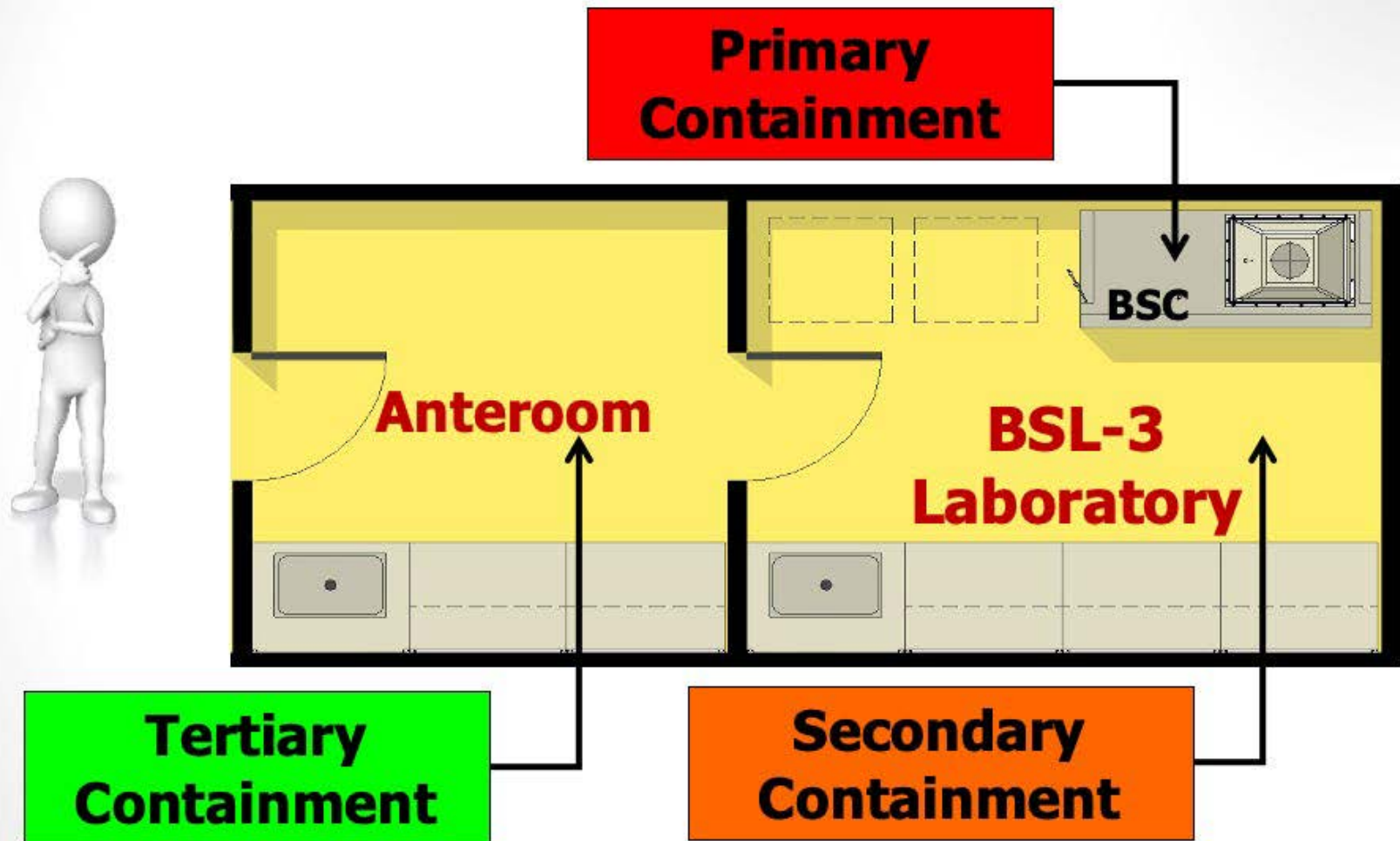


BSL-3 facility design requires understanding the work

# Design and Construction – Conceptual Design



# Design and Construction – Containment Barriers





# Design and Construction – Waste Management

Autoclaves

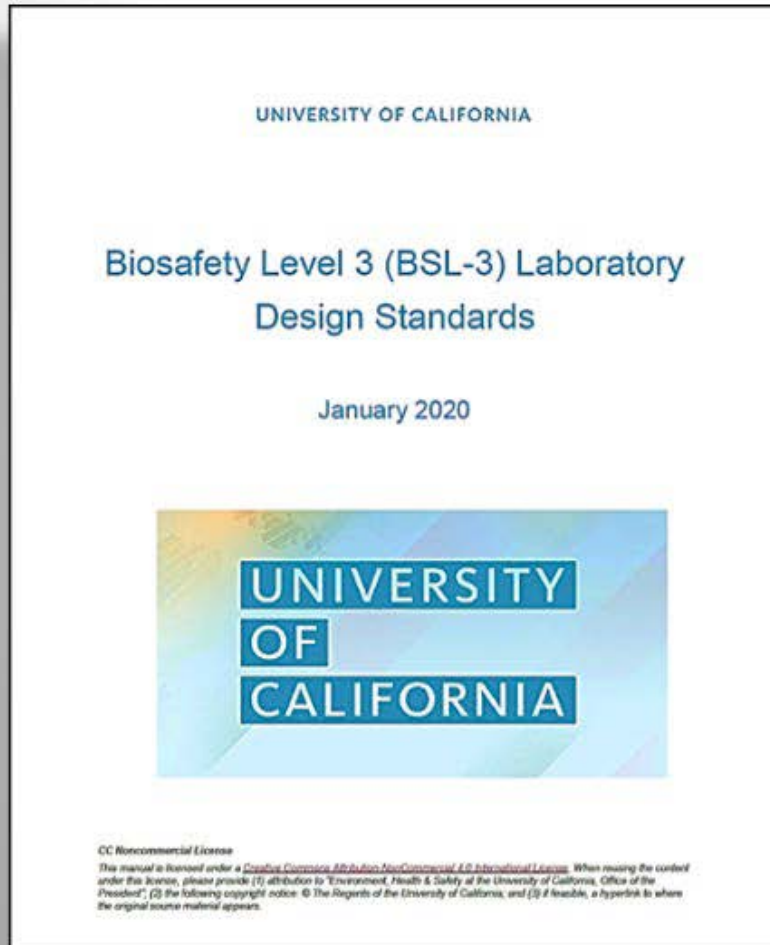


Effluent Decontamination Systems (EDS)





# Design and Construction – Compliance



## 6.6.3 Ventilation Rates in BSL-3 Laboratories

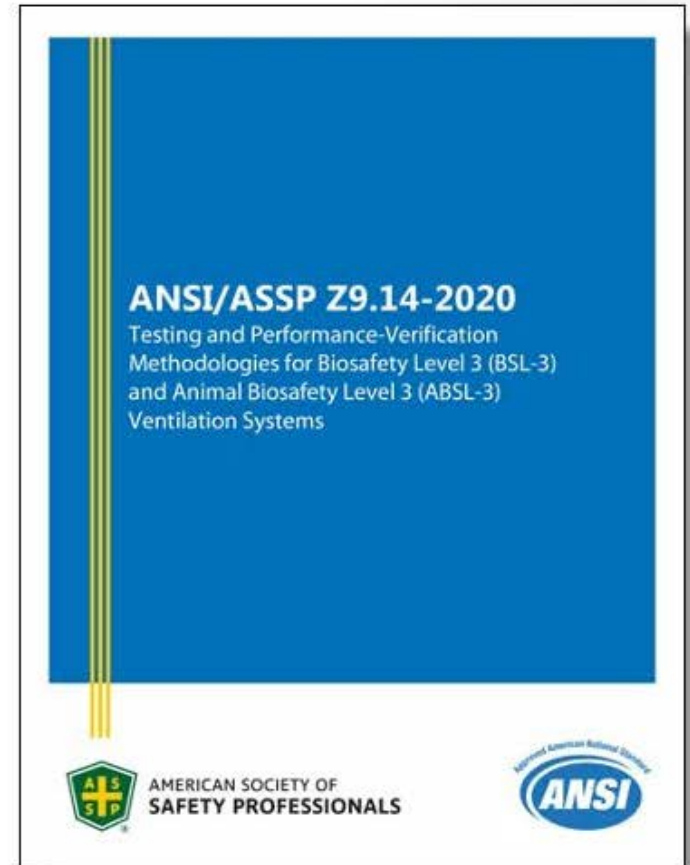
- Minimum of 6 air changes per hour (ACH).
- Minimum airflow maintained at all times, including unoccupied periods.
- Designed to remove all heat dissipated by all equipment and all exhaust air requirements from fume hoods, sterilizers, etc.

# Design and Construction – Cx and Validation

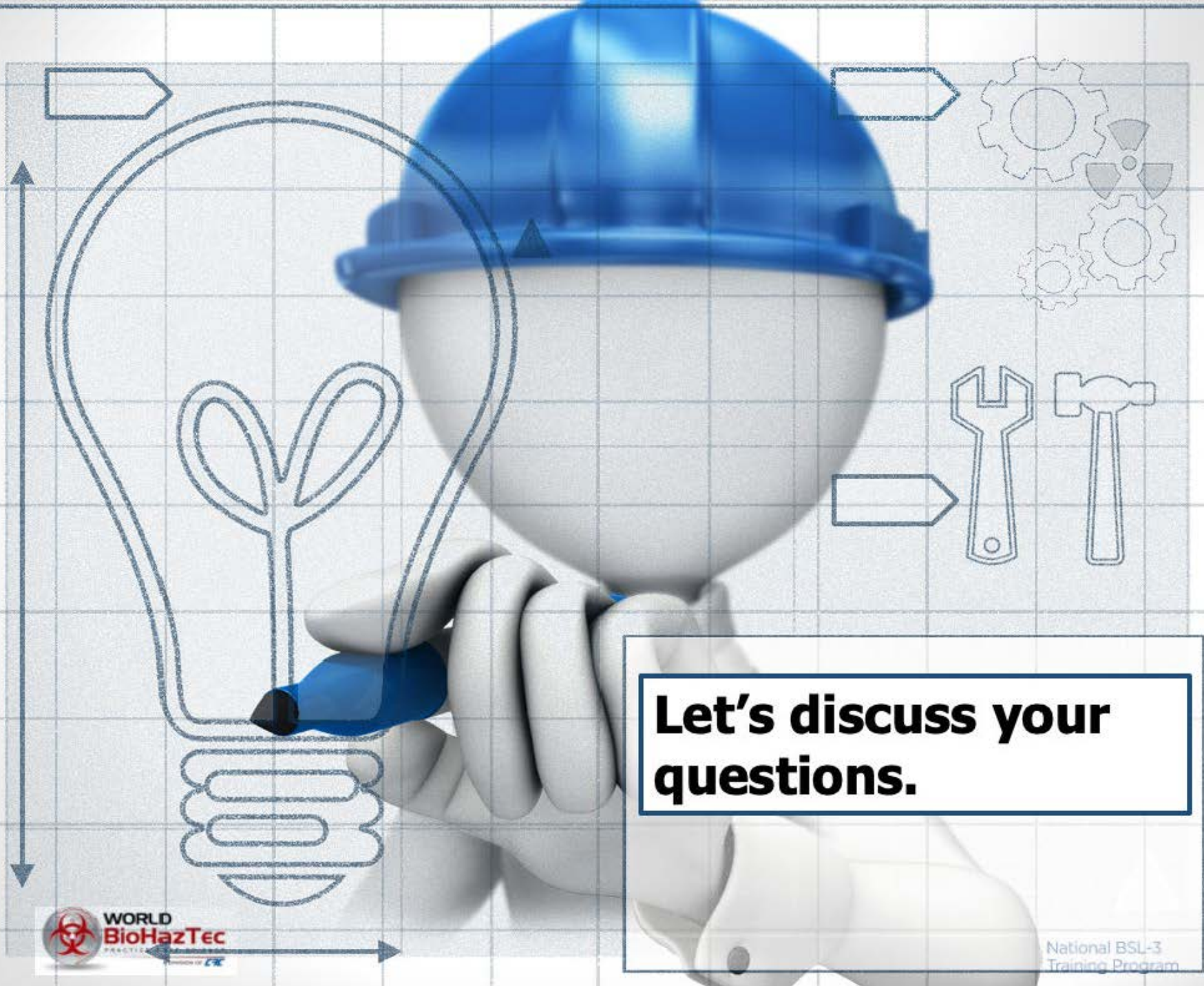
## A New Resource - BSL-3 Testing & Verification

### ANSI Z9.14:

- Use of the standard is currently voluntary (but may be adopted as guidance or regulation)
- The testing & verification may be performed by an independent 3<sup>rd</sup> party, but responsibility is on owner
- Prescriptive & Risk Assessment based approach
- Recommends annual verification







**Let's discuss your questions.**