

Competency Ladders for Biosafety Professional Track

MABSA Round Table, Rahway, NJ

15 June 2023

What now?

- Heard from Andrew about the issues in position descriptions.
- Heard from Lou Ann about a competence matrix.
- This is to describe using competencies to set up a position ladder.

Bloom's Taxonomy

KNOWLEDGE L3/E		COMPREHENSION L4/D		APPLICATION L5/C		ANALYSIS L6/B		SYNTHESIS L7/A		EVALUATION L8/A*		
LO Verb: Define Describe Draw Identify Label Locate List	Memorise Name Recite Recognise Select State Write	LO Verb: Change Extend Confirm Relate Express Compare Illustrate Translate Discuss	Match Summarise Paraphrase Generalise Restate Predict Transform Defend Outline Explain	LO Verb: Apply Modify Change Choose Prepare Model Interpret	Produce Classify Collect Report Discover Show Dramatise Make	LO Verb: Analyse Construct Compare Investigate Contrast Research Examine Classify Categorise	Point out Identify Select Distinguish Separate Survey apart	Advertise Take	LO Verb: Add Produce Combine Role-play Create Design Compose Plan	What if Invent Originate Organise	LO Verb: Apprise Assess Consider Critique Judge Recommend Relate Solve Summarise	Decide Justify Debate Verify Argue Discuss Rate Prioritise Determine Weigh Up

How many positions? What do we call them?

- Six levels described:
 - Entry, Base, Assistant, Associate, Senior, and Expert levels.
- As with Biosafety Levels, each builds on the prior level.
- Tried to stay with core attributes, and set up “Supplemental Skill Sets” for those areas that a person may need to have competencies in, but may not.

What does this look like?

- Each of you has been given a copy of our first draft of the competencies.
 - Some are not actually competencies, but are descriptions of the breadth of impact on the institution or interactions within and outside the institution.
- The effort was to deliberately generate a minimum set of fairly broad competencies- be less prescriptive than the 2011 MMWR

Entry Level Position

- Life sciences degree or adjacent (e.g., biomedical engineering, safety, IH).
- 1 year life sciences research experience (may be basic science, clinical, plant, or animal research).

Base Level Position

- Recognize relevant regulations and guidelines.
- Recognize hazards in the workplace.
- Aware of risk assessment process.
- Recognize mitigation methods.
- PPE (including respiratory protection)
- Administrative controls (e.g., waste disposal processes)
- Engineering controls
- Recognize communication modes (e.g., in person, online training, manuals, posters).
- Recognize & admit knowledge limits.

Assistant Level Position (intermediate technical skills)

- At this level, the individual has the skills to mentor a base level individual.
- Apply relevant regulations and guidelines.
- Awareness of institutional compliance framework (e.g., IBC, IACUC, IRB, IRE, Radiation safety committee).
- Apply risk assessment principles.
- Implement control measures and work practices.
- PPE (including respiratory protection)
- Administrative controls (e.g., waste disposal processes)
- Engineering controls
- Initiate reviews of institutional compliance documentation (e.g., IBC requests, protocol reviews).
- Apply approved inspection protocols for facility inspections.
- Choose an appropriate communication mode to inform committees and staff.
- Apply existing guidance for incident response (e.g., exposure or spill response).
- Applies appropriate communication modes (e.g., in person, online training, manuals, posters).
- Recognize & admit knowledge limits.
- *Improved methods impact selected customers / faculty / staff.

Associate Level Position (advanced technical skills, entry professional skills)

- At this level, the individual has the skills to mentor an assistant level individual. The individual is capable of working in a proactive manner.
- Creates guidance for novel activities/technologies.
- Interpret relevant regulations and guidelines.
- Awareness of institutional compliance framework (e.g., IBC, IACUC, IRB, IRE, Radiation safety committee).
- Develop risk assessment policies.
- Evaluate control measures and work practices.
- PPE (including respiratory protection)
- Administrative controls (e.g., waste disposal processes)
- Engineering controls
- Appraise institutional compliance documentation (e.g., IBC requests, protocol reviews, risk assessments).
- Generate inspection protocols for facility inspections.
- Originate communications and trainings.
- Evaluate communication modes (e.g., in person, online training, manuals, posters).
- Create guidance for incident response (e.g., exposure or spill response).
- Recognize & admit knowledge limits.
- *Results impact delivery of service to several work groups, a large project, or an extended customer base
- *Awareness of impact on institutional funding, operational budget, and revenue
- *Broad scope of work covering one or more complicated areas.
- *Highly complex decision making and understanding impact on institution.
- *Regular contact with internal and external stakeholders.

Senior Level Position (advanced technical skills, advanced professional skills)

- Develop programs and policies at institutional level or beyond.
- Subject matter expertise extends to multiple supplemental skill set items.
- Still, recognize & admit knowledge limits.
- *Results impact at the institutional level.
- *Provides input on institutional funding, operational budget, and revenue.

Expert Level Position (institution or beyond management: i.e., minor deity)

- Policy impact is at or above the intuitional level.
- Expert technical skills.
- Expert in most of the supplemental skill set items.
- Still, recognize & admit knowledge limits.
- *Provides data to institutional leadership on institutional funding needs, operational budget, and revenue.

Supplemental Skill Sets

- Animal Biosafety
- Large Scale Biosafety
- Clinical Laboratory Biosafety
- Ancillary Safety/Regulatory Areas
- Human Gene Therapy
- Select Agent Program Compliance
- Shipping
- Environmental Compliance
- Facility Design and Operation
- Emerging Technologies