Lab Space Design Guidelines

A. Workstations

- Work surfaces should be easily adjustable.
- Work surfaces should provide adequate thigh clearance underneath (thin work surface, no drawers).
- Sufficient space for feet and knees should be available under works surfaces. Also consider work surface cutouts to position employees closer to equipment, ie microscopes, water baths.
- Avoid rails/storage shelves and drawers below the front edge of bench. If file cabinets are used, use low cabinets for modular lab benches.
- Bench heights should be adjustable, especially where there is prolonged standing.

Seated (desk height) workstations are best for tasks:

• Performed at elbow height or below.	• Which are complex precision tasks.
• Where work objects weigh 10 lbs. or less.	• Which are of longer duration.
• Requiring fine manipulation or writing.	• Where chair movement is required.
• Performed for at least 30 minutes.	• Requiring foot controls.

Recommended seated work heights (especially for frequently performed tasks/tasks performed for prolonged periods:

Microscope use	Powered height adjustable with bench cutouts
Cryostat	Should be height adjustable
Precision work requiring micromanipulation (surgery)	Powered height adjustable
Light assembly (pipetting)	27.5-31 inches
Coarse/medium work (microtomy)	26-28.5 inches

Standing workstations are best for tasks:

- Which are shorter in duration.
- Where work objects weigh more than 10 lbs.
- Requiring frequent extended reaching.
- Requiring frequent movement between workstations.
- Requiring downward forces.

Recommended standing work heights:

Light assembly work	38-42 inches
Heavy work (requiring downward force)	35-39 inches

B. Storage Space:

- Plan for extended storage space for heavy items and fluid containers (such as reagents) to be stored between thigh and shoulder level (32 inches to 48 inches).
- Provide storage space for height adjustable carts used for heavy containers.
- Consider pull out shelving or Lazy Susan devices.
- Storage areas should be readily modified to accommodate changes and laboratory practices i.e. modular rolling storage cabinets.

C. BSC/Glove Boxes/Fume Hoods (Especially when frequently used/used for prolonged periods):
• Provide leg clearance beneath.
• Should be height adjustable when possible.
• Select units which minimize forward reach over safety structures placed in front of the work surface, such as air foils
BSC:
• Recessed waste receptacles, convenient placement of petcocks and electrical controls.
Glove Box:
• Glove port diameter should be 8 inches.
• Center of glove ports should be 46” above the floor.
• Window should be sloped back about 15 degrees and 54-66 inches above the floor.
• Use foot activated height adjustable stools.
D. Chairs should have all the recommended features indicated in http://www.safety.duke.edu/ergonomics/computer-ergonomics/chairs/required-chair-features:
• Should be multi-shift for 24/7 lab functions.
• Casters should be rubber for hard floors.
• Cylinder height should be appropriate for height of BSCs if the hood is non- height adjustable.
• Avoid seat slider on stools or seat angle.