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RETHINKING LABS FOR INCLUSION AND EQUITY

Questions and Considerations to Ensure Your Lab Accommodates All Staff

By Marilee Lloyd, AIA

Diversity, equity, and inclusion (DEI) within the laboratory environment are vital for the advancement of science and a more equitable society. Education and employment within the sciences has historically been, and is still, majority white and male. As a result, research is often focused on those individuals, missing either the perspective of diverse peoples or the richer data they would impart. Welcoming women, people of color, disabled persons, and diverse cultures, religions, and creeds will expand the realm of discovery. The results of that science will be more valuable and efficient for the diverse world we live in. The benefits are economic as well as social.

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Two routes to consider when thinking about building inclusion and equity within science professions at the facilities level are educational and professional.

FOCUS ON EDUCATION ENVIRONMENTS

Establishing a pipeline of diverse scientific talent starts with STEM education. Organizations can assist through outreach beginning at the middle and high school level, conducting facilities tours for students to inspire them to pursue STEM. Encouraging students to engage with the space (you may even see points of friction for them that give insight on how your current lab would perform for adults of their demographic) will help them understand the functional roles and foundational concepts of science. Organizations such as The American Chemistry Council's Future of STEM Scholars Initiative provides scholarships and support, partnering with Historically Black Colleges and Universities to foster the pipeline of individuals in higher education into STEM fields.

When they go to college, students should enter with the idea that "I can work in a lab." Once they've entered higher education, it becomes the responsibility of those institutions to foster students' interest in STEM professions and engage with DEI conversations in their STEM facility design. This can be accomplished by outreach programs, cross-departmental cooperation, and strong coaching/mentoring programs.

When thinking about how to approach DEI at the facilities level, the most impactful method is to make inclusivity a part of the initial planning by keeping design explorations human-centered.

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This means bringing a diverse set of laboratory users into the planning and design charettes and bringing the diversity of your organization to bear when creating standards for research environments. Account for disability, gender, physical size, and religious affiliation. Consult with an experienced laboratory planner/architect on creative ways to engage those diverse perspectives in your planning and design exploration methods, as not all individuals will be responsive to the same types of stimuli or communicate the same way. Often, organizations want to bring diverse perspectives to the table but fail to account for the fact that those individuals will not predictably communicate and respond to the same exercises. Then, diversity considerations devolve into simple ADA and building code conversations, which are de rigueur. Neither is sufficient to create an effective environment for equity. Remember that different experiences result in different ways of thinking—the pursuit of which is the goal of the facility design as much as the science conducted within it.

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In higher education, drawing students to a STEM facility and making their time in the lab more comfortable can express itself as high degrees of transparency, dynamic biophilic elements with allusions to the natural world and inviting color palettes, and access to ample natural daylight. Other qualities may include creative and conscientious adjacencies of departments, professors, aides, and students. This means building in more time for tests, physical space for interpreters, signers, or physical assistance providers, and selecting flexible, modern, and inclusive products, furnishings, and technology.

There is a wide range of equipment and furnishings available that enable a significant amount of adjustment (height, movement, etc.), which, while the adjustment may not be instant, can be accounted for with some preparation (slot adjustable height flex benching versus pneumatic switch control). These flexible furnishings will be used longer than non-adjustable furnishings because they can adapt to changing lab teams that may, ideally, become more diverse over time. PPE should also be considered: how is it made, does it accommodate veils or turbans, are a variety of sizes available?

PROFESSIONAL CONSIDERATIONS

Beyond the education pipeline lies a career in the sciences, where many of the same potential problems remain. Consider reaching out to professional organizations to gain insights on some best practices to close the gaps in your team's lived experiences. When thinking about how to create a more accessible, dynamic, comfortable, and comprehensible lab space, consider not only the use of the space for a short duration but being in the lab for an entire workday, multiple days a week. Consider the type of laboratory and what can be accommodated, then question it ruthlessly.

Use some of the following questions as a part of the analysis of inclusion and equity:

- Can someone who is physically small reach this shelf if they need to?
- Can a wheelchair user move the rack of animals in the vivarium if they need to? Can they load the autoclave?
- Are accommodations possible within a cleanroom for some kinds of mobility aides?
- Can those who have low visual or auditory acuity safely navigate the lab and work effectively?
- Can monitors be moved and adjusted for height and angle?
- Can the height of benching accommodate a variety of requirements?
- Can the lab be traversed efficiently and independently with a cane?
- Are there on-site facilities for those who must attend to personal issues during the workday (whether that issue is religious, familial, or health-related)?

Equipment configurations and requirements within the lab evolve. Similarly, support spaces must be correctly chosen and thoughtfully placed to create inclusivity in their adjacency. Consider restrooms: are they available, are they close, do they accommodate disabled people, are they gender-inclusive? What about wellness rooms for respite, privacy suites for taking calls or medications, suites for nursing mothers, or prayer suites with facilities to wash one's feet before prayer?

Considerations like these are incumbent on the organization, its priorities, and its culture, but they demonstrate how DEI in the lab is dependent on more than the laboratory itself. Money is always a factor—and clients are put in the position of making hard choices around considerations like these, but the bottom-line results of greater inclusion and equity in the sciences speak for themselves. In addition to being morally correct, it is competitively and economically advantageous.

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