



How to Conduct a Lab Space Evaluation

From time to time, it's important to assess whether the space devoted to laboratory use in a building, complex, or campus is meeting current and future needs, or if space is not being utilized optimally. While the International Institute for Sustainable Laboratories (I2SL) is devoted to promoting energy efficiency, decarbonization, and waste reduction in existing and new lab buildings, the most sustainable lab is the one that is never built at all.

To ensure that lab space is maximized in your facility, department, institution, or campus, consider an annual or biennial space evaluation exercise, which can be done as part of a lab clean-out during springtime, between semesters, or when research projects transition. Following are some tips to get started on evaluating lab space:

- First, make sure you know, by talking to supervisors, department heads, or PIs, the type of research, experimentation, processes, or manufacturing performed in each space. Is it a wet lab for chemical use, a dry lab, or "damp" research? Plan interviews with lab managers, users, and facility staff in addition to a walk-through of each space.
- As you walk through the space, determine whether the level of research matches the space allocation, what equipment is consistently being used (or not), and whether fume hoods are idle or being used to store chemicals or other materials.
- Are boxes stacked on work surfaces because there isn't adequate shelving or closets? Note if storage space is adequate and safe for supplies, equipment, and materials needed by the researchers.
- Determine whether equipment such as autoclaves and appliances such as freezers and glassware washers are fully utilized, or could be utilized by other researchers in the building before they purchase new equipment. If they are not, are there opportunities to find other lab buildings or research locations to rehome materials or opportunities to donate them?
- Consider a tagging and inventory process for researchers to better control and utilize lab purchases and lab "swap" days for excess materials and supplies.
- Have you considered a system for shared lab equipment among departments or establishing a core research space where specific research activity across campus can be conducted in one location?



A more in-depth evaluation could involve setting up a space inventory and database of workspace occupancy and utilization within and across departments. Ask yourself and lab management: Who sits/works where? What do they do for research? What space and equipment do they truly need? Challenge any widely held perceptions that research is space-constrained and that construction of more lab space is needed by first asking whether existing space is utilized to its full potential. You may be surprised by the results and save capital expenditures for research.

Create a spreadsheet to collect information on each lab space, including: number of people working in the space; type of lab space (wet lab space, clinical lab space etc.); the responsible PI or other party for the lab space; and note repairs or removal needed for large legacy or broken equipment. Assign teams to do walk-throughs and engage the necessary stakeholders to repair, dispose, or make items available to other labs. Take this opportunity to initiate conversations about shared research equipment.

Work with researchers, facility management, department chairs, and those involved in space planning and allocation to assess and reassign space where appropriate. If you identify extra space, consider using it to establish shared equipment research facilities, a freezer farm, or swing space when other labs need to be renovated.

Finally, document your results! Share findings with campus, company, or building management and researchers, including the amount of square footage underutilized, cleared of clutter, or reassigned; tons of items diverted from landfill or reused; pieces of equipment or electronics donated; volume of chemicals properly disposed; and lessons learned from this process. Lab space evaluations should be conducted every year or two, so discuss what could be done differently in the future. Feel free to share your results with info@i2sl.org, and we can publish a case study so others can learn from your efforts.

For more information about the LabSavers campaign, visit www.i2sl.org. You can also get inspired by the Equipment Sharing and Efficient Space Use [website](#) from the University of Colorado Boulder Green Labs program, or send us samples of your space evaluation materials to info@i2sl.org!

Additional Resources:

- Donation: **Seeding Labs** is a nonprofit for donations supporting strong, sustainable, locally-led science for development in low- and middle-income countries.
- Reuse: **Rheaply** is a company operating in several U.S. regions that connects scientists with resources in excess to those with resource needs.
- Core facilities: **The Association of Biomolecular Resource** focuses on the use of core facilities to promote efficiency in research.



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