



A HUMAN-CENTERED APPROACH TO HEALTHIER INDOOR SPACES



Well Living Lab

How much time do you spend indoors every day? For the average American, it's more than 21 hours – that's 90 percent. Whether it's our home, the office, work, school, the mall, gym, car, train or bus, or doctor's office, our time spent indoors is at an all-time high..



WHY IT MATTERS

Buildings, and everything in them, can affect our health and well-being. When we're healthy, we perform better in all aspects of life—as employees, spouses or partners, parents, friends or family members. Indoor environments can affect our quality of life in many ways, for example:



Lighting, along with temperature and sound, can impact the amount and quality of sleep we get.



Heating, ventilation and air conditioning systems can affect our cardiovascular and pulmonary systems, which can affect people of all ages.



Furniture in our offices and homes can influence ergonomics and posture and encourage or deter physical activity.



Natural lighting and biophilia can reduce stress and improve mood.

The need for a more focused study of the connection between health, well-being and the indoor environment is real and immediate.

WHAT WE DO

The Well Living Lab is the first scientific research center applying human-centered research to understand the interaction between health, well-being and indoor environments. The Lab opened in May 2016 and is located in the Minnesota BioBusiness Center, adjacent to the Mayo Clinic campus in Rochester MN.

A collaboration of industry leaders — Delos and Mayo Clinic — the Lab has brought together some of the best and brightest minds in building science and medical research.. The Lab's multi-disciplinary approach combines clinical and human behavior expertise, research, engineering and technology.

Our one-of-a-kind research facility is completely reconfigurable and features advanced sensor technology and remote monitoring allowing study participants to move about freely, unencumbered by wires and monitors. For example, the Lab can be configured as:

- + **An apartment**, allowing us to study how factors like lighting, air temperature, noise, or furniture affect quality and quantity of sleep;
- + **An office**, allowing us to study how specific office furniture, natural light versus manufactured light, physical activity and other factors affect performance, attention, mood and comfort; and
- + **Future**: Ability to conduct multiple simultaneous studies in real-world settings outside of the Lab and in environments such as senior living, classrooms and homes.

¹Spengler, Jack (1983) Indoor air pollution: a public health perspective, Science 01 Jul 1983: Vol. 221, Issue 4605, pp. 9-17 <http://science.sciencemag.org/content/221/4605/9>

Physical Structure

7,500

total square feet

5,500

square feet of sensor-rich
lab space

CAPABILITIES

- Unprecedented data gathering and storage abilities
- Reconfigurable physical environment through modular design
- Ability to simulate a wide range of environmental variables
- Sophisticated data analytics platform and visualization
- State-of-the-art remote monitoring control center
- Principal investigators from a wide range of medical and scientific backgrounds

RESEARCH PROJECTS AND APPROACH

- Experimental and observational studies
- Coordination and oversight from the Mayo Clinic research community and Institutional Review Board
- Single or multiple variables, such as lighting, acoustic, thermal, and nutrition in a physical sleep and work environment
- Measurement methods include cognitive tests, wearable and environmental sensors, observation and ethnography, including auto-ethnography and self reports

TEAM

The multidisciplinary team benefits from the expertise of both Delos and Mayo Clinic with governance by a Joint Steering Committee who is guided by a Scientific Advisory Board comprised of scientific and medical experts.

Be informed. Get involved.

The movement to create healthy indoor spaces is growing rapidly as leaders from science, medicine, architecture and design begin to understand the connection between the indoor environment and health, well-being and performance.

We invite you to learn more about the Well Living Lab and how you can become part of the movement. Visit us online at WellLivingLab.com or call [507-258-7592](tel:507-258-7592) to schedule a tour and meet our team.

TRUST IN THE EXPERTS

The Well Living Lab brings together the health expertise and world-class research of Mayo Clinic and the knowledge of health and wellness generated by Delos to leverage and expand upon the principles of WELL.



+ **Mayo Clinic** is a world-leading health care system with more #1 rated specialties than any other health system. The Mayo Clinic Center for Innovation provides administrative support for the Lab.



+ **Delos**, the pioneer of Wellness Real Estate,[™] and a leading force in establishing the WELL Building Standard[®] (WELL), the first building standard to focus exclusively on human health and wellness in the built environment.

Learn more or connect with the Well Living Lab:

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