Typically, architects and designers focus on designing physical space while scientists focus on understanding the unknown and unseen. Often, these lines of vision and discovery do not cross. In contrast, the Institute for Health in the Built Environment integrates designers, scientists and industry partners with diverse backgrounds to explore together the unseen elements of our built environment, including the indoor microbiome, air, chemistry, thermal and visual comfort, perception, psychologic and physiologic response, to understand how to better design for health, energy and evolution. We use science to design the unseen.
We understand and design for acute dangers in the built environment, such as requiring fire sprinklers; however, we don’t often design for chronic dangers, such as low dose effects of indoor chemicals and contaminants or increased carbon emissions, because they are unseen. The effects are subtle, but destructive. They affect us through increased risk of cancer, inflammation, immunological disturbances, cognition, stress and a warming climate. The Institute is investigating and impacting the design of unseen elements in the built environment, from energy use to microbial ecology, chemistry, comfort, psychological perception, acoustics and carbon balance to improve human health.
Our habitat is changing. In the developed world, we spend more than 90 percent of our lives indoors, often in urban areas with little connection to natural systems in which humans evolved. Our built environment has evolved to be highly engineered, segregated from nature, and even virtual. Human biology has not evolved as quickly as built environments, which results in what evolutionary medicine has termed “mismatch diseases,” diseases resulting from our ancient human biology adapting poorly to new environments. Examples include: allergies and autoimmune diseases due to reduced exposure of our immune system to good bacteria, diabetes and obesity due to environments in which we are more sedentary, or anxiety and depression from chronic stressors in our environment. The Institute is investigating our built environment to develop design strategies that reduce energy use while connecting us to an evolutionary past and healthy future.
On the frontier, you work together to create new opportunities and possibilities. This pioneer ethos is the foundation of Oregon’s collaborative spirit and a reason we are successful at solving challenges. Climate change, population growth, diminishing resources and human health are challenges on the new frontier and we must continue to innovate solutions by working together to design for health, design for evolution and design the unseen. Collaborating with communities, municipalities, and academic and industry partners, the Institute for Health in the Built Environment advances, integrates, and applies new knowledge from diverse scientific disciplines to support a healthy, thriving community and planet.
Trace paper, thick black markers, wood models and coffee are indispensable in the genesis of an idea. However, many elements we experience in the built environment can’t be seen. Whether energy, microbes, chemicals, or sound, the unseen has a profound impact on our own health, experience and energy use in the built environment. It’s time we design for it. We have the unique toolsets to visualize, understand, simulate and shape it. These include: microbial DNA sequencing, metagenomics, gas chromatography, mass spectroscopy, climate chamber, wind tunnel, virtual reality and acoustic equipment.
OUR VISION
In the developed world we spend 90% of our lives, and 40% of the total energy we consume, in buildings. Decisions we make about how buildings and cities are designed, constructed and managed have significant implications for our own health, and for the health of our planet. The Institute for Health in the Built Environment advances, integrates, and applies new knowledge from diverse scientific disciplines to support a healthy, thriving community and planet.

OUR MISSION
Our mission is to develop new design concepts for the realization of healthy and sustainable inhabited space. We do this by forming unconventional collaborations that conduct research where architecture, biology, medicine, chemistry and engineering intersect and translate it into design practice through a consortium of invested industry partners with applied impact.

OUR ORGANIZATION

OUR CURRENT COLLABORATORS
UNCONVENTIONAL COLLABORATION
- Cross-disciplinary groups creatively re-examine larger problems and arrive at creative solutions
- Establish connections between world-renowned university researchers and leading industry partners
- Inform and help define research priorities
- Receive priority access to research results
- Translate research into products and services
- Accomplish more through synergistic skill sets and resources
- Develop research collaborations (Medicine, Chemistry, Engineering, Environmental Health Science)

MARKET DIFFERENTIATION
- Rapidly innovate and iterate to gain competitive advantage
- Differentiate your organization through association and access to knowledge and tools

COST EFFICIENCY
- Extend research investment through pooled research funds to improve ROI of new technologies, ideas, and practices
- Leverage university resources, industry partners, foundations, federal and state government
- Annual membership/sponsorship is less than the cost of a typical one year research project
- Potential benefit from federal tax credit
- Access to research grade scientific equipment

TECH TRANSFER
- Vett research by other industry members for likelihood of adoption and commercialization
- Manage Intellectual Property assignments and rights to benefit both industry partners and university researchers
- Patent rights & licenses - (negotiated) right to obtain a non-exclusive license on preferential terms to any invention conceived during the period of industry partner’s support

HUMAN RESOURCE DEVELOPMENT
- Access resumes for graduates already engaged in the Consortium’s work and projects
- Continuing education opportunities for staff

NETWORKING | BUSINESS RELATIONS
- Co-marketing opportunities
- Strategic networking and cooperation with other industries, companies, academia, and government agencies
- Long-term relationships and benefits that impact and outweigh specific project goals.

SUBSCRIPTION

YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4

MEMBER
- Tier 1 (Large Business)\(^1,2\) $35,000 $40,000 $45,000 $50,000
- Tier 2 (Small Business)\(^1,2\) $15,000 $20,000 $22,500 $25,000
- Tier 3 (A+E+C Firms)\(^2\) $5,000 $6,000 $7,000 $7,500

AFFILIATE $2,500

\(^1\) Large/Small business designation determined by SBA Table of Small Business Standards
\(^2\) 12% Multi-year discount available

BECOME A PARTNER!
We can be hired as a consultant anytime; however consortium membership is an opportunity for partnership with ongoing dialogue and development of ideas ahead of your competition.

- Pioneer future research
- Attend consortium content meeting and board meeting
- Access to tools, calculators, guides and manuals
- Exclusive access to cutting-edge researchers and facilities
- Access to workshops, training and seminars
VENTILATION | MICROBES


INDOOR VISUAL COMFORT | DAYLIGHT PERFORMANCE


Gormly, K., et al. (2016). Can we use smartphone-imaging sensors as low cost luminance mapping tools to support design processes, integrated lighting system control and human factors research? Presented at the IES Annual Conference, Orlando, FL.


DAYLIGHT | MICROBES

Fahimipour, A.K., et al. Daylight exposure modulates microbial communities associated with household dust. (In review)

DESIGN | MICROBES


OCCUPANCY | MICROBES


DAYLIGHT | ENERGY


ENERGY EFFICIENCY


ANTIMICROBIAL | MICROBES


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