Symposium on Laboratory Lifecycle Management Executive Summary

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Executive Summary

This report summarizes the proceedings of the Symposium on Laboratory Lifecycle Management hosted by UW-Madison in the fall of 2022 and offers key themes and recommendations to promote a long-term approach to developing and managing the university's research laboratories and related spaces in biotechnology facilities. The Lab Symposium was developed with the support of the following executive sponsors:

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- Provost Karl Scholz
- Dean of the School of Medicine and Public Health Robert Golden
- Vice Chancellor for Research and Graduate Education Steve Ackerman

The Lab Symposium brought together stakeholders from intersecting disciplines of life sciences research, laboratory design and construction, laboratory operations, and facilities management. These experts shared best practices and current insights from their fields and beyond. The opportunity for collaboration between on-campus researchers, facilities experts, and real estate professionals, with off-campus design and construction experts, industry scientists, and finance specialists, created a special environment that resulted in new knowledge and connections between experts.

While this initial effort was charged with a focus on biohealth topics centered at the UW-Madison School of Medicine and Public Health, many of the issues, cycles, and barriers discussed at the Lab Symposium apply across campus, and we hope the findings can be used more broadly. On the UW-Madison campus, we are guided by the Wisconsin Idea in all our work and we view laboratory facilities lifecycle management through this lens. How can we ensure the facilities funded by Wisconsin taxpayers and other critical stakeholders produce the highest caliber of scientific advancement?

The university's capacity to fulfill its teaching and research mission is innately intertwined with the functionality and availability of laboratory facilities. The insufficient investment in facilities now impacts the ability of UW-Madison to recruit and support scientists and industry to develop high impact research outcomes. For UW-Madison to optimize its impact as a top-tier R1 public research institution, improve its ranking in research expenditures, recruit leading faculty, and deepen industry partnerships we must provide superior laboratory facilities in a timely fashion.

Laboratory facility improvements include three target areas—renovation of existing facilities, completion of routine maintenance, and construction of new facilities. The process of completing these projects must consider the nature of current and future research and provide shorter and more predictable timelines to properly fund and deliver complex laboratory projects. This approach is needed to position research teams to work on urgent and immediate problems.

The goal of the Wisconsin Symposium on Laboratory Lifecycle Management (Lab Symposium) was to bring together experts in science, facilities design, and lab maintenance and renewal to begin the discussion about maximizing scientific productivity through the modernization of facilities. The Lab Symposium events were held in-person on the UW-Madison campus over three days in November and December 2022. Each day featured panelists with a diverse array of experience in academic, industry, and government laboratories - as well as design, real estate, and construction. The high level of involvement from external, industry, and research organizations signaled the importance of this topic and its potential to lead to further cooperation between industry partners and the university.

Attendees and speakers included members of the campus community (faculty, facilities experts, department leadership), affiliate organizations such as University Research Park and the Wisconsin Alumni Research Foundation, private architecture, design, and construction companies, leaders of life sciences companies, professional organizations, federal research and funding agency facilities experts, and representatives from peer institutions.

Key Themes from the Lab Symposium

The opportunity for networking between different industries and organizations created a special environment that resulted in new levels of understanding and connection between experts. Key themes from the Lab Symposium include:

A. The maintenance, renewal, and efficient use of our existing facilities and assets are key to maximizing impact on a limited budget.

As our campus facilities age, routine maintenance and modernization are essential to ensuring facilities remain effective for their users – yet much of the necessary capital renewal is deferred or remains uncompleted. Strategies for regular assessment and cataloging of aging facilities to determine effectiveness, redundancy, and maximization can ensure renewal projects will better serve current and future users.

B. Research core facilities are a significant asset and can be better leveraged to benefit UW, research, and industry.

Research cores include expensive, highly technical instruments, equipment, and techniques. Our current network of research cores serves as a resource to campus users and external research communities throughout the region, but there are opportunities for efficiency, awareness, and improvement. This includes the existing Office of Campus Research Cores working with campus cores to publicize capabilities for campus and industry-sponsored research, and continued OVCRGE support of instrument acquisition and cost-sharing options.

C. Adaptable and flexible laboratories are a priority to meet the unpredictable needs of the future of science.

Both the rapidly advancing pace of research techniques and practices and the growing need to adapt campus lab spaces to accommodate new faculty and projects – the investment in adaptable and flexible laboratory spaces is a priority. These shifts require a different approach to designing and renewing spaces, and a culture change in the approach to requesting, assigning and sharing lab spaces on campus.

D. Current capital project delivery models, and procurement processes, severely constrain our ability to keep pace with our peers with more autonomy.

Lab Symposium panelists from construction firms and peer institutions presented on alternative models for the delivery of capital building projects that could result in favorable outcomes of lowering total cost and shortened timelines, including Construction Manager at Risk, Design-Build, and Public-Private-Partnership. Although these tools are available to the university today, most projects currently follow the Design-Bid-Build or Single-Prime Bidding and Contracting model.

E. Clear need for stronger partnerships between UW-Madison, government, industry, and economic development agencies to position the advantages of Dane County and Wisconsin as a high value location for health tech growth.

Madison is a local hub for industry advancement in the life sciences, anchored by the talented workforce trained at UW-Madison each year. This industry has become hugely important to the Wisconsin economy, such that the goals of the university often align with biohealth industry.

F. Researchers report a high administrative burden, limiting their ability to produce high-impact science and UW-Madison's ability to recruit and retain top talent.

Faculty and research teams are struggling with added administrative tasks related to grant management, procurement, hiring and other business services. Providing campus support to eliminate or minimize administrative burden, where possible, would allow faculty, graduate students, and staff to focus on research, teaching, and mentorship.

Recommendations to Advance Research & Laboratory Lifecycle Management at UW-Madison

Select specific, targeted topics for follow-up symposia and future events for focused, actionable change at UW-Madison include:

Improving Stewardship of Existing Assets

- Invest in lifetime facilities maintenance planning.
- Improve space allocation and reduce redundancy.
- Invest in flexible and adaptable spaces.

Strengthening Relationships with Industry and Government

- Leverage partnerships with Madison biohealth community.
- Support investment in the Wisconsin Department of Administration's Division of Facilities Development to accelerate capital project delivery.
- Fund the capital renewal budget, including the deferred renewal backlog.
- Build industry and government partnerships for growth.

Improving Campus Systems and Culture to Support Researchers

- Reduce the administrative burden on faculty and research teams, specifically for grant management, procurement, and hiring.
- Increase transparency of decision making for resource management and data use.
- Share space and investigate opportunities for research administration support between schools and colleges.

The following **actions and next steps** are identified to capture and leverage the momentum generated by the Lab Symposium.

- Align our next steps to best support the strategic plans of Finance and Administration, Facilities Planning & Maintenance (FP&M), and Chancellor Mnookin's aspirations for UW-Madison's research and supporting infrastructure.
- Consider the merit and potential topics for future in-person or virtual symposia events and/or other shared learning and networking opportunities with campus, industry, and funding agency partners.
- Continue offering support to the Office of the Vice Chancellor for Research and Graduate Education (OVCGRE) with the Research Core Revitalization Program and other instrument acquisition strategic initiatives.
- Pursue strategies to implement recommendations outlined in the Lab Symposium report document