APPLICATION FOR
URBAN DESIGN COMMISSION
REVIEW AND APPROVAL

AGENDA ITEM # _____
Project # _____

DATE SUBMITTED: June 13, 2007

UDC MEETING DATE: June 20, 2007

Action Requested
X Informational Presentation
___ Initial Approval and/or Recommendation
___ Final Approval and/or Recommendation

PROJECT ADDRESS: See attached Exhibit A

ALDERMANIC DISTRICT: 8

OWNER/DEVELOPER (Partners and/or Principals)
Wisconsin Alumni Research Foundation
University of Wisconsin

ARCHITECT/DESIGNER/OR AGENT:
Uihlein-Wilson and Ballinger Company

CONTACT PERSON: George E. Austin

Address: 614 Walnut Street, Room 1265C
Madison, WI 53726

Phone: (608) 262-3717

Fax: (608) 262-6104

E-mail address: gaustin@overturefoundation.com

TYPE OF PROJECT:
(See Section A for:)

X Planned Unit Development (PUD)
- X General Development Plan (GDP)
- ___ Specific Implementation Plan (SIP)

___ Planned Community Development (PCD)
- ___ General Development Plan (GDP)
- ___ Specific Implementation Plan (SIP)

___ Planned Residential Development (PRD)

___ New Construction or Exterior Remodeling in an Urban Design District * (A public hearing is required as well as a fee)

___ School, Public Building or Space (Fee may be required)

___ New Construction or Addition to or Remodeling of a Retail, Hotel or Motel Building Exceeding 40,000 Sq. Ft.

___ Planned Commercial Site

(See Section B for:)

___ New Construction or Exterior Remodeling in C4 District (Fee required)

(See Section C for:)

___ R.P.S.M. Parking Variance (Fee required)

(See Section D for:)

___ Comprehensive Design Review* (Fee required)

___ Street Graphics Variance* (Fee required)

___ Other _____

*Public Hearing Required (Submission Deadline 3 Weeks in Advance of Meeting Date)

Where fees are required (as noted above) they apply with the first submittal for either initial or final approval of a project.

Brief Narrative Description of the Project

Wisconsin Institute for Discovery/Morgridge Institute for Research
1300 Block of University Avenue
Madison, Wisconsin

June 2007

The Wisconsin Alumni Research Foundation in partnership with the University of Wisconsin and the State of Wisconsin has embarked on the development of the **Wisconsin Institute for Discovery** (WID) and **Morgridge Institute for Research** (MIR), a 300,000 square foot biomedical research facility proposed for the 1300 block of University Avenue. It started with a grand idea and is being realized through the generosity and vision of two University of Wisconsin-Madison alumni, John and Tashia Morgridge. The facility will help the university compete for the best and brightest faculty, and generate interdisciplinary research to spur new inventions, treatments, cures for disease and economic development for the region.

In 2004, Wisconsin Governor James Doyle proposed the formation of the Wisconsin Institutes for Discovery, a research enterprise that would strengthen the state's position in science and technology, and stimulate the economy. The largest gift ever to the university—$50 million from alumni John and Tashia Morgridge—together with a $50 million gift from the Wisconsin Alumni Research Foundation, is leveraging the State's $50 million commitment to make the Institutes a reality.

This unique state and private partnership will create two institutes, the public Wisconsin Institute for Discovery and the private Morgridge Institute for Research. Together, the Institutes for Discovery will be an innovative facility that will enable researchers from diverse fields to collaborate in answering fundamental questions in biology and human health, using nanotechnology, biotechnology and information technologies to discover treatments and cures for devastating diseases and to find solutions to other important problems. The vision for WID/MIR has been informed through an unprecedented set of campus based workshops that took place earlier this year. Beyond the 40 faculty, staff and industry partners involved in the workshops, more than 120 other campus and community partners have participated in focused discussions intended to drive future discovery through interdisciplinary research in the WID-MIR.

At its center, WID/MIR is focused on *research collaboration* with *social interaction*, *knowledge transfer*, *education and outreach* serving as vital contributors to a successful interdisciplinary research facility. There are three dimensions in this vision that will yield a unique building design:

- Sustainability. The goal is to reduce the carbon emissions by 50% compared to recent UW lab buildings. In addition, a Gold LEED certification is targeted.
- Changeability. The intent is to build for the long term, incorporating flexibility to allow conversion of spaces over time to respond to the changes in basic scientific research.
- National model research institute. The goal is to incorporate best practices to create a unique research environment.

The proposed development is consistent with the University of Wisconsin-Madison Campus Master Plan and City of Madison development plans for the site. The building concept program was completed in May 2007 and the project formation stage is underway. A rezoning application to rezone the site to PUD/GDP will be proposed in the summer of 2007. Site deconstruction is planned for the late fall of 2007 and a construction start planned for March 2008 following approval of the PUD/SIP for the site. Occupancy of the facility is anticipated for the fall of 2010.

EXHIBIT A

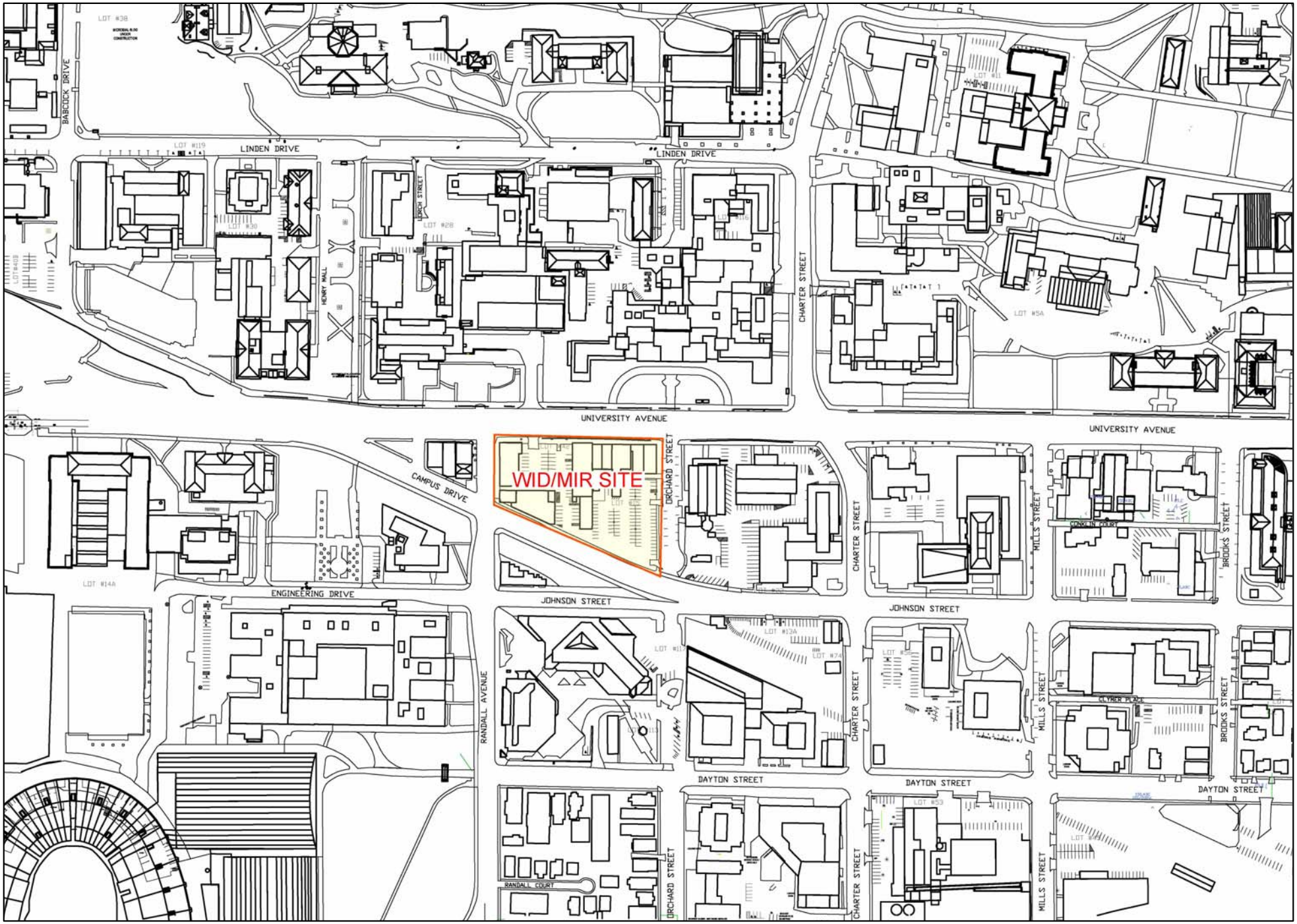
WISCONSIN INSTITUTES FOR DISCOVERY

Project Site Addresses

Parcel Identification Number	Street Addresses [1]
070922103117	**1353 UNIVERSITY AVE** 1357 UNIVERSITY AVE
070922103076	**1337 UNIVERSITY AVE** 1339 UNIVERSITY AVE 1341 UNIVERSITY AVE 1345 UNIVERSITY AVE 1347 UNIVERSITY AVE 1351 UNIVERSITY AVE
070922103068	1321 UNIVERSITY AVE **1327 UNIVERSITY AVE**
070922103050	1323 UNIVERSITY AVE **1325 UNIVERSITY AVE**
070922103042	**1319 UNIVERSITY AVE**
070922103034	**1313 UNIVERSITY AVE** 1315 UNIVERSITY AVE
070922103026	1305 UNIVERSITY AVE **1307 UNIVERSITY AVE**
070922103018	**1301 UNIVERSITY AVE** 1303 UNIVERSITY AVE
070922103167	**302 N ORCHARD ST** 318 N ORCHARD ST 350 N ORCHARD ST
070922103125	**317 N RANDALL AVE** 325 N RANDALL AVE 329 N RANDALL AVE 331 N RANDALL AVE 333 N RANDALL AVE

Note:

1. The addresses were obtained from DCiMap, and confirmed with the Department of Zoning. The bolded addresses are the ones used by Assessor's Office to reference the property.



WID | MIR

UIHLEIN WILSON ARCHITECTS Ballinger

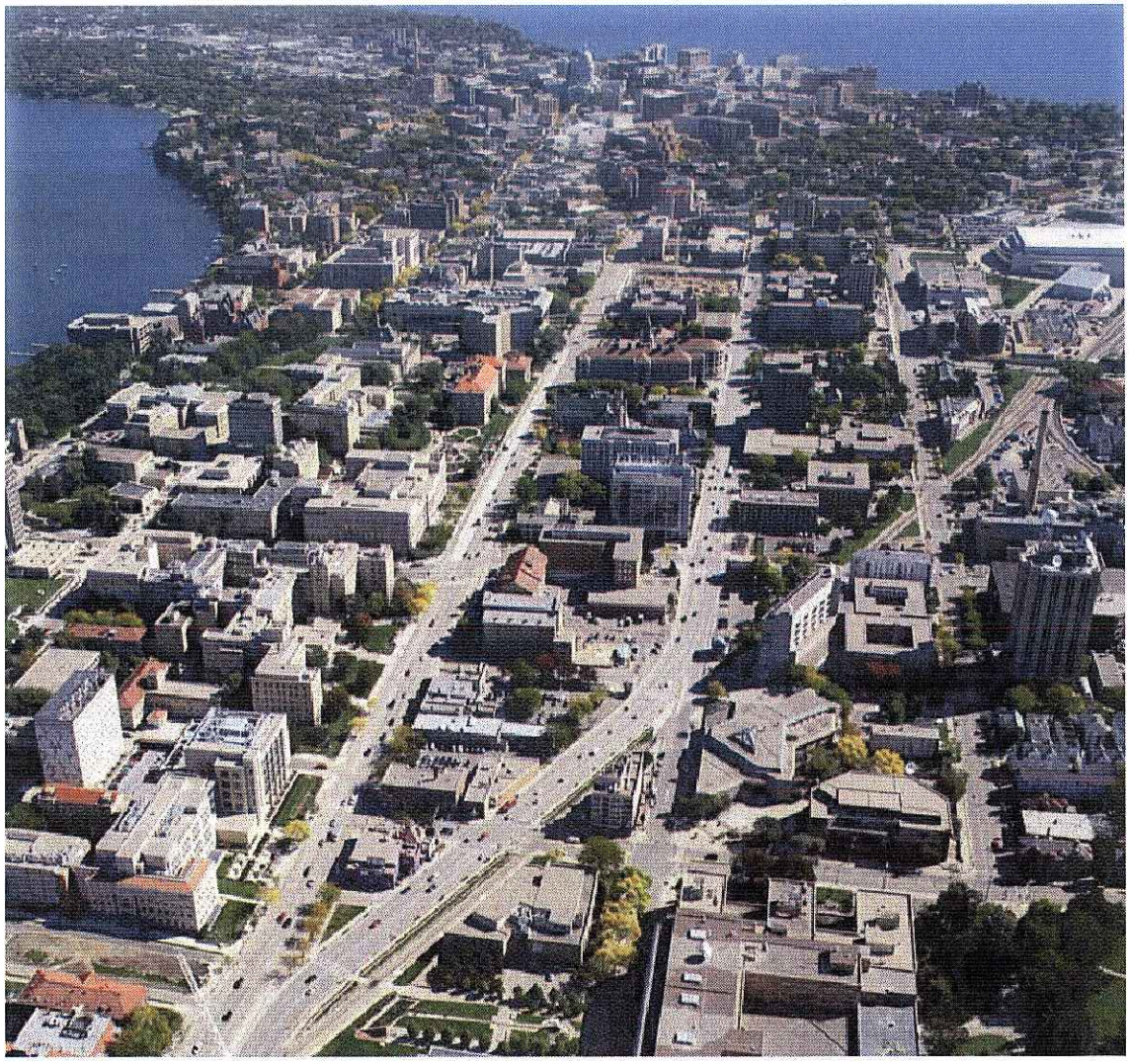
WID | MIR

WISCONSIN INSTITUTES FOR DISCOVERY

UIHLEIN WILSON ARCHITECTS Ballinger

BUILDING CONCEPT PROGRAM

MAY 2007



April 2007

In January 2007, the Wisconsin Institute for Discovery | The Morgridge Institute for Research (WID | MIR) Building Committee launched four workshops intended to inform the conceptual design process of the Institutes. The workshops required more than 20 hours of participant time over two months and included the active participation of more than 60 workshop participants, building committee members, design team consultants and UW and WARF staff.

I would like to take this opportunity to express my deep thanks to the workshop participants for their thoughtful, energetic and committed input during the first quarter of 2007. I know we will continue to ask for their contributions of time and ideas throughout the planning process over the next few years.

WID | MIR
WISCONSIN INSTITUTES FOR DISCOVERY

BUILDING CONCEPT PROGRAM

The attached document is the Building Concept Program that resulted from the workshop dialogues. In this document you will find an explanation of the content elements informed by those workshops as well as some of the best practices that our design team will employ in developing the project design. Project benchmarks, including budget and cost estimates, are also reflected herein.

This document represents one of the earliest, yet most critical, stages of the WID | MIR building design process. Engaging the future constituents of the WID | MIR remains a primary goal. Beyond the workshops, we conducted focused discussions with 121 UW faculty and staff as well as industry partners on how to best realize the potential of the Institutes and their interdisciplinary focus. Faculty and staff representing all four divisions of the UW campus participated in these discussions, and I extend my thanks for their contributions to the design process as well.

It is important to note that, concurrently, other campus, community, and industry partners are also hard at work on programming and partnership discussions that will direct the future operations of the Institutes. The engagement of dozens of public / private and interdisciplinary research partners at this stage is a perfect testament to our hope for the Institutes: to establish a platform for diverse stakeholders to explore complex solutions in advancing human health through innovative, interdisciplinary research.

Carl E. Gulbrandsen
Chair, WID | MIR Building Committee
Managing Director, Wisconsin Alumni Research Foundation

From left
Research Collaboration in the Knowledge Era:
Carl Gulbrandsen, Dan Okoli, Charles Casey, Sandra Austin-Phillips, Lewis Gilbert, Stephen Wright

Leveraging the Public / Private Partnership:
Carl Gulbrandsen, Winslow Sargeant, Paul Barford, David Beebe, Michael Falk, Marty Rosenberg

TRIBUTE TO THE PARTICIPANTS

RESEARCH COLLABORATION IN THE KNOWLEDGE ERA
(The Future of Interdisciplinary Research)

*Sandra Austin-Phillips, Senior Scientist, Biotechnology Center

*Charles Casey, Professor Emeritus, Chemistry

*Craig Christianson, WARF

Tim Donohue, Professor, Bacteriology

*Michael Falk, Director of Intellectual Property, WARF

*Alan Fish, Vice Chancellor for Facilities and Planning

*Lewis Gilbert, Associate Director, Nelson Institute

Mark Gray-Keller, Associate Scientist, Biochemistry,

*Carl Gulbrandsen, Building Committee Chair, Managing Director, WARF

*Greg Moses, Professor, Engineering Physics

*Rick Moss, Professor and Chair, Physiology

*Steven Wright, Professor, Computer Sciences / Industrial Engineering

LEVERAGING THE PUBLIC/PRIVATE PARTNERSHIP
(Commercialization/Technology Transfer)

Lynn Allen Hoffman, CEO of Stratatech

Paul Barford, Computer Sciences, Inventor

Dave Beebe, Professor, Biomedical Engineering

Tom Burke, CEO of Primorigen

Craig Christianson, Director of Licensing, WARF

*Michael Falk, Director of Intellectual Property and Chief of Staff, WARF

*Carl Gulbrandsen, Building Committee Chair, Managing Director, WARF

Max Lagally, Professor, Materials Science and Engineering

Dan Olszewski, Director of Weinert Center for Entrepreneurship

*Paul Peercy, Dean of the College of Engineering

Marty Rosenberg, CEO of Promega

Winslow Sargeant, Managing Director of Venture Investors, WARF Trustee

From left, The Wisconsin Idea: Carl Gulbrandsen, David Nelson, Dan Okoli, Judy Peterson, Dan Cornelius, Sarah Schutt, Diane Kostecke, Tom Sharkey, Julie Underwood

Standing from left, The Town Center: Dan Cornelius, Mark Guthier, Mark Olinger, Carl Gulbrandsen, Gary Brown; Seated from left, Dan Okoli, Claude Heintz

THE WISCONSIN IDEA
(Education and Outreach)

Aaron Brower, Vice Provost for Teaching and Learning, Professor, School of Social Work

Walter Dickey, Professor, Law School

Jo Handelsman, Professor, Plant Pathology

Diane Kostecke, Digital Innovations Manager, Wisconsin Public Television-UWEX

David Nelson, Professor, BioChemistry and Director of the Center for Biology Education

*Judy Peterson, Researcher, Bacteriology

Sarah Schutt, Division of Continuing Studies

Tom Sharkey, Professor, Botany and Director of Institute for Cross College Biology Education

*Julie Underwood, Dean of the School of Education

THE TOWN CENTER
(Social/Interaction Spaces-Discovery at the Crossroads)

Dan Cornelius, Graduate Student, Law and Land Resources

Mark Guthier, Director, Wisconsin Union

Claude Heintz, Faculty Associate, Kinesiology / Dance

David Mortensen, Professor, Communication Arts

Jerry O'Brien, Faculty Associate, SoHE - Center for Retail Studies

*Dan Okoli, UW Architect

Mark Olinger, City of Madison Director of Planning and Development

*Roberto Rengel, Professor, SoHE - Interior Design

* Indicates WID | MIR Building Committee Member
**Marsha Maillick-Seltzer, Interim Director of the WID

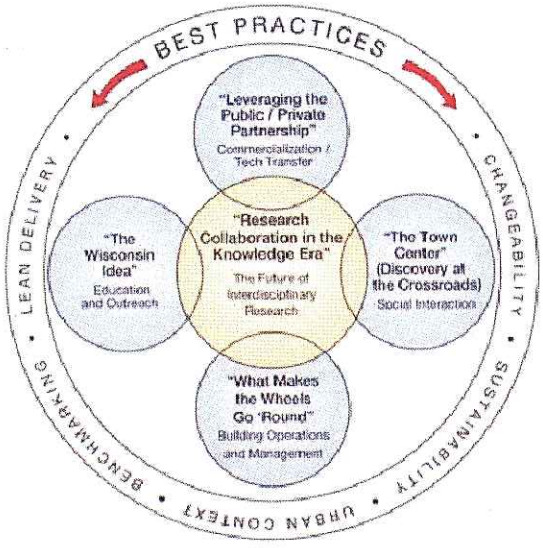
CONTENTS

OVERVIEW: VISION TO REALITY

From its inception, the WID | MIR Institutes have been driven by a unique vision of a public / private partnership as a central magnet for interdisciplinary research in the heart of the University of Wisconsin-Madison campus. This Building Concept Program report seeks to begin translating that unique vision into reality: space, time and cost. Advancing this vision has been a highly collaborative process of working multidimensionally. Three challenges have been at the center of this process:

1. Discover the key ingredients of **Interdisciplinary Research Collaboration** for both public and private institutes
2. Create a **Vibrant Town Center** for both campus and research communities
3. **Integrate Teaching and Research** as a single community on every academic level: K-12, undergraduate, graduate and post graduate

In advancing the collective thinking process, four work groups were formed to focus on the component pieces. (Diagram below) Each one is reported on separately in the pages that follow. A fifth effort dealt with the operational dimensions of this WID | MIR facility: **What Makes The Wheels Go 'Round.** Additionally, other work groups explored Best Practices in five discrete dimensions: Sustainability, Changeability, Urban Campus Context, Lean Delivery and Benchmarking. Summaries of their reports are included as well.



FINDINGS TO DATE

This Building Concept Program report is the first step down a long road aiming at a completed facility in 2010. At each milestone, it will be essential to test the results against the Goals and Criteria described here. They reflect the collective wisdom of the work groups and the innovations that lie at the core of WID | MIR (see Goals and Design Criteria, page 10). As we have begun testing the program elements and design concepts that serve as the springboard for the next phase, several key decisions are worth highlighting:

PROJECT BASICS:

- $120 / 150M: Budget
- 172,000 / 300,000: Scope
- Fall 2010 Occupancy

MODIFIERS OF THE BASICS

Program: 172,000 NSF vs. 170,000 NSF

Many small adjustments to the program occurred. The essential mix remains the same. (see diagram at right)

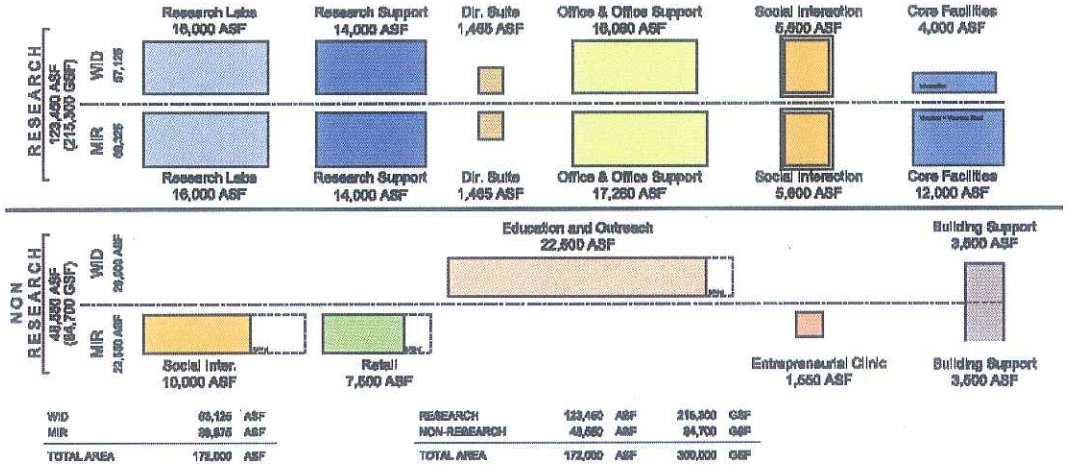
1. The Research program is split equally between WID and MIR with 2,500 SF per PI (Principal Investigator) as the benchmark
2. Core facilities include provision for animals and an informatics core
3. Program elements are split between WID and MIR reflecting the need to demarcate ownership
4. Basement, penthouse and building support spaces are shared between WID and MIR

Cost Model: $120M

An initial test of the $120M construction cost is feasible subject to further cost modeling as the design process proceeds.

SCHEDULE FOR COMPLETION: 2010

The target completion date is realistic for the Fall of 2010. To achieve this target, we must secure City approvals to allow site demolition and enabling to begin in the Fall of 2007, with full scale excavation in the Spring of 2008. Thirty months are contemplated for the construction itself.



GRAPHIC PROGRAM

THREE UNIQUE DIMENSIONS OF WID | MIR

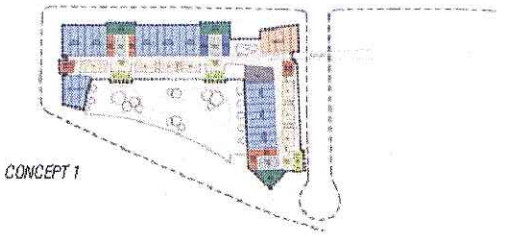
Beyond the basics of program, cost and schedule we have discussed and embraced three dimensions in this vision that will yield a unique building design.

1. **Sustainability** The team has targeted five evaluation parameters, such as exploring a 50% carbon reduction compared to recent UW lab buildings. In addition, a Gold LEED certification is targeted. The cost of this will be balanced against the budget reality.
2. **Changeability: A 100 Year Building** The team intent is to build for the long term. Specific structural and architectural features will be explored to fix the basic dimensions of flexibility: floor to floor height and bay sizes. Further, the mechanical / electrical / plumbing backbone and furniture systems will be carefully developed to allow conversion of space over time.
3. **Lean Delivery: Elimination of Waste** An integrated AE/CM/Owner team has been working toward a unique agreement for delivering this complex project. A fundamental premise of Lean is to eliminate wasted time in design and construction and to seek collaborative working relationships between architects, engineers and major sub contractors. Out of this collaboration, we seek to reap real savings in cost and time that will add value back into the project.

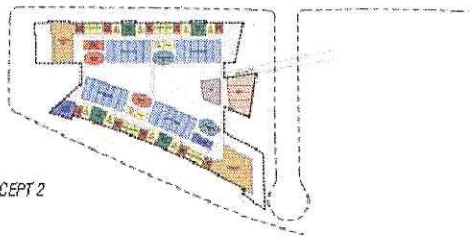
WHERE DO WE GO FROM HERE? DESIGN CONCEPTS

This concept program forms the basis of the Project Vision. The next step is to fashion design alternatives that translate the vision into dimensional reality. Growing out of the work to date, three concepts have been articulated. (At right) At present, concept 1 is considered the least viable. The design team will focus on concepts 2 & 3 for further development. In the months ahead a preferred design will be selected based on a variety of evaluation criteria. The acid test will be which concept best defines a vision of WID | MIR as the national model of research excellence.

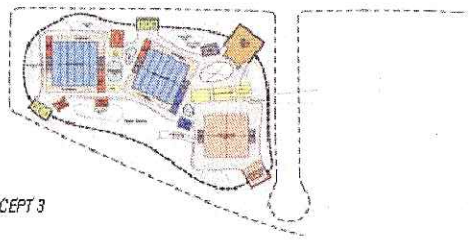
DESIGN CONCEPTS



CONCEPT 1



CONCEPT 2



CONCEPT 3

PROJECT VISION

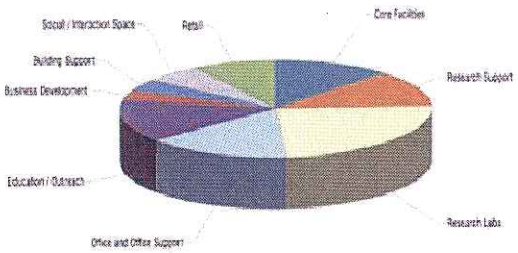
PROMISE OF THE PROJECT

To facilitate interdisciplinary research leading to scientific advances that can be translated into biomedical applications that enhance human health and welfare.

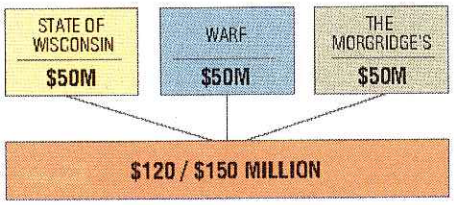
WID will engage faculty members from across the campus and all divisions in collaborative research, education, and outreach that spans biotechnology, nanotechnology, and information technologies.

JOHN AND TASHIA MORGRIDGE

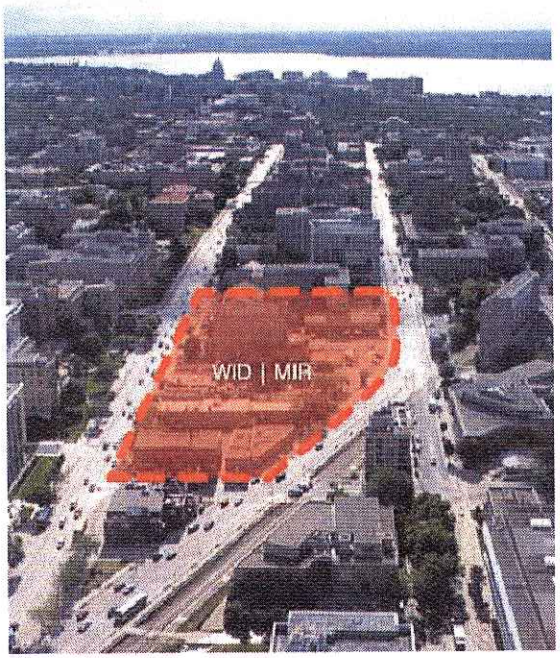
PROGRAM



BUDGET



SITE



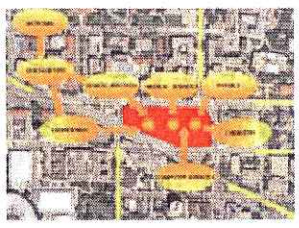
PROJECT GOALS & DESIGN CRITERIA

Interdisciplinary Research Collaboration	-	Team Clusters
	-	Interaction Elements and Configuration
	-	Neighborhood Character
Vibrant Town Center	-	Interplay of Retail, Education and Support Elements
	-	Program and Design Synergy with the Campus Including Union South
	-	Building Form and Site Design Creating Crossroads Day and Night
Integrated Teaching and Research Community	-	Symposium Center as Magnet
	-	Science Teaching Center as Research and Training Focus
	-	Teaching Studios Embedded in Research Floors
National Model Research Institute	-	Incorporate Best Practices Nationally / Internationally
	-	Create Unique Environment Inside and Out
	-	Signature Architecture for Campus
100 Year Building	-	Able to Flex through Multiple Generations
	-	Ease of Change / Adaptability of Building Systems (Preinvestment Optimization)
	-	Core and Shell Logic
Sustainable Design	-	Targets for Five Peremeters include Carbon, Water, Waste, Habitat and Health Considerations Over the Life of the Building
Lean Project Delivery	-	Integrated Owner / Designer / Builder Team
	-	No Lost Time
	-	10% Savings over Conventional Process
Project Benchmarks	-	$120M / $150M
	-	172,000 NSF / 300,000 GSF
	-	Fall 2010 Completion

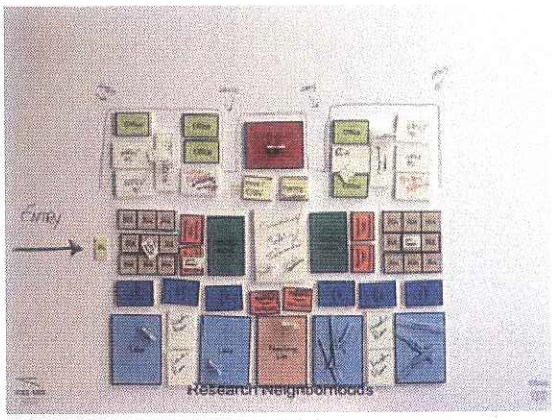
A UNIQUE VISION:

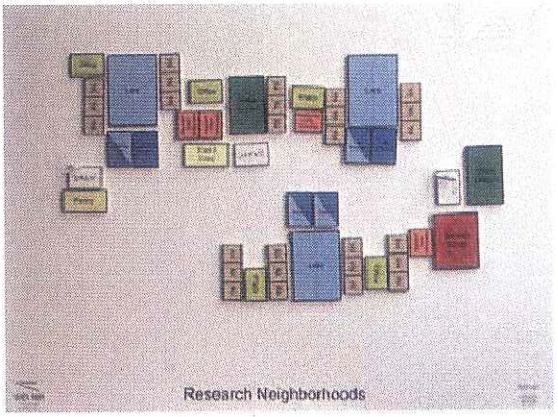
RESEARCH • EDUCATION + OUTREACH • INTERACTION HUB • TOWN CENTER



RESEARCH COLLABORATION IN THE KNOWLEDGE ERA
THE FUTURE OF INTERDISCIPLINARY SCIENCE





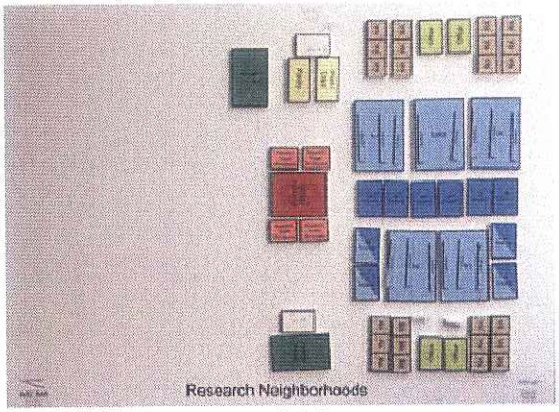
IDEAL ADJACENCY MODELS: FROM WORKSHOPS

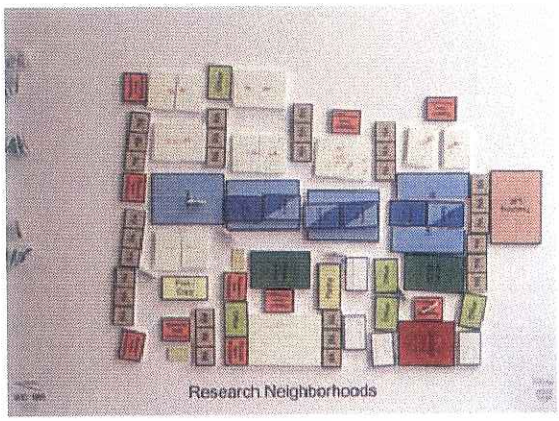
In launching a concept program for the research components of the new institutes, the Research Collaboration workshop considered how research has been evolving, and the trends which may influence facility planning. Recognizing both the public and private dimensions of the initiative, the primary physical planning criteria include:

- **Interdisciplinarity:** Potential co-location of a broad range of disciplines, from biological sciences to engineering and computer science to the humanities.
- **Collaboration:** Encouraging (in fact, requiring) more than the mere coexistence of these disciplines in the building, but rather their working together in new ways.
- **Interaction:** Central to successful collaborative, interdisciplinary research is the fostering of interaction between individuals, teams, and the broader community.
- **Changeability:** Acknowledging that by its very mission this building will likely experience a high rate of churn. It must be able to respond to wide-ranging and time-sensitive change.
- **Efficiency:** Maximizing value for dollar spent amid a fixed cost target.

The Research Collaboration workgroup utilized the workshop process to examine an appropriate preliminary balance of program elements - depicted in the accompanying graphic program (page 8) - and to explore the ideal aggregation of space to support the goals. (see examples above) Particular attention was given to fostering the interaction so essential to successful collaborative science. A number of important ideas emerged:

- **Clustering:** The most compelling outcome of the work is to create Research Neighborhoods through clustering of people. Offices should be clustered to encourage interaction, for people to see and be seen, not strung out in a linear fashion.
- **Localized Commons:** While the "town center" character of the facility will likely warrant a major atrium or commons space, it will be important to interject smaller "winter garden" or communal areas within and/or between neighborhoods.
- **Interaction Catalysts:** "Draws", or magnets to encourage people to leave their immediate work area and travel through other areas might include coffee stations, white boards, food or pantry areas, natural light, winter gardens, printing / copy areas, etc. They should be located at extremities and intermediate nodes.





IDEAL ADJACENCY MODELS: FROM WORKSHOPS

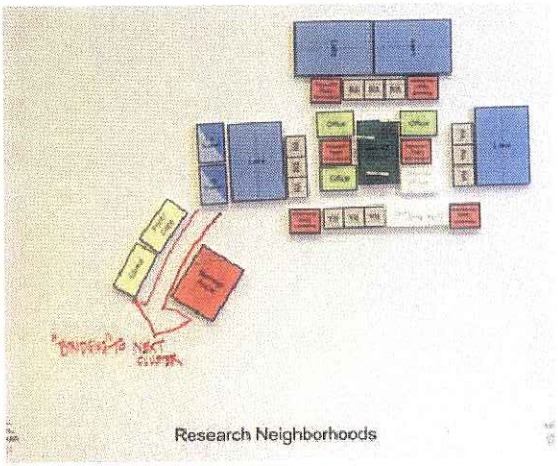
- **Computational Hubs:** Space for visualization, computational equipment and support might serve as the hub around which a neighborhood cluster is arrayed, bringing people and activity to each area.
- **Research Teaching Labs:** A product of the Education and Outreach workgroup, space should be adjacent to or embedded within each research floor, spawning immersive, hands-on experiences for undergraduates

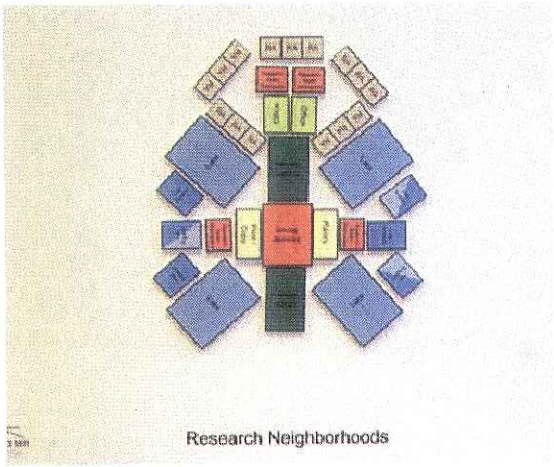
Finally, potential core facilities were considered and evaluated in terms of their relevance to the WID | MIR mission, geographic proximity and accessibility elsewhere on campus, and cost. Ultimately, it was recommended that two core facilities should be included: a vivarium for small animal studies and a computational core.

Vivarium: As potential core facility candidates for the new building were evaluated. A guiding principle was to maximize use of existing cores both to encourage interdisciplinary interaction and to minimize cost. It was concluded that most needs could be met due to their existence on campus already with the available capacity to address WID | MIR needs. A major exception is a small animal / rodent barrier facility. The current thinking is to plan for such a vivarium at a size that could accommodate approximately 20% of the anticipated resident principal researcher population (about 10). It was felt that planning for a facility which could house rodents and zebrafish would adequately support the research needs for the foreseeable future, particularly if expansion potential, which could ultimately double the initial housing capacity, were to be included. The program implications of 8-9,000 mice (or other combination of species), with corresponding procedure space within the vivarium as well as support facilities (tunnel / cage washers, feed and bedding storage, quarantine, etc.), suggest approximately 7,000 ASF, with about 3,500 ASF additional space for expansion. Whether or not a vivarium fit-out is included in the initial Phase I build-out, the infrastructure should be provided, probably in the basement, to allow its eventual construction (vibration criteria, floor-to-floor height, air-handling, utilities, etc.).

Computation Sciences: The other primary core facility to be included in the new building is a computational core. One of the emphasis here should be on communications capability to enhance interactions between computer scientists and biologists, chemists, and others. Data storage / archiving, as well as most of the actual processing power, can reside off-site. However, visualization is critical - places where data can be retrieved, displayed, and discussed among the members of the research community.

LEVERAGING THE PUBLIC / PRIVATE PARTNERSHIP
COMMERCIALIZATION / TECH TRANSFER





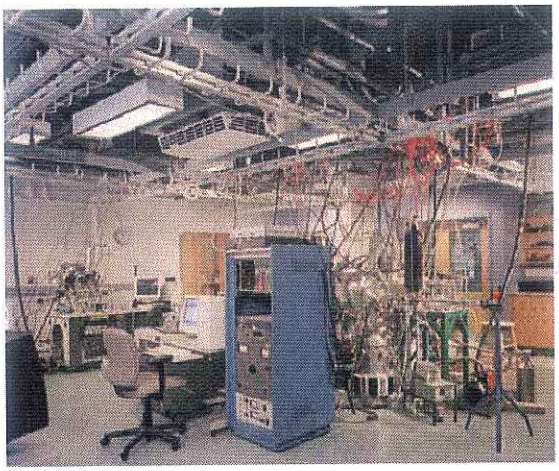
IDEAL ADJACENCY MODELS: FROM WORKSHOPS

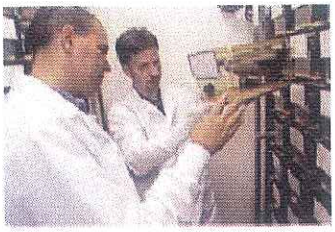
Working in parallel with the Research Collaboration workgroup, participants of the Public / Private workshop examined not only how research might be conducted and spaces organized, but how MIR, as a private institute, might afford unique opportunities not available elsewhere on campus. While there are many facets of MIR that remain to be explored, this workshop was designed to explore the impact that a focus on knowledge transfer and industry interface might have on the planning of the building. Many of the objectives of the research space per se mirror those considered by the Research Collaboration workshop - interdisciplinarity, collaboration, interaction, changeability, and efficiency. At the same time, it was recognized the ultimate design may be different on the MIR side from that arrived at on the WID side. Fundamental issues emerged:

- **Identity of Public vs. Private Institute:** MIR facilities have the potential to enable work that cannot be done in the public WID space, such as prototype design and preclinical work.
- **Intellectual Property Management:** While the workshop envisioned a collaborative research environment to reap the fullest possible benefit of this interdisciplinary initiative, there may be a need to provide additional private meeting spaces to enhance knowledge transfer to industry.
- **Business Acceleration Services:** The program should include space as a nexus for business acceleration emanating from technological discovery. These functions include a range of services such as evaluating funding sources, accessing grant proposal-writing, legal advice, and marketplace potential.

The workshop considered what programmatic components were needed to effectively address these issues and offered designs for how such components should be arranged to achieve the desired results. Key ideas include:

- **Entrepreneurial Clinic:** A distinguishing element of the MIR program might be a suite in which the commercialization support could occur in a single stop offering meeting space, some offices, and access to data on grants, venture capital opportunities, and on the appetite of the marketplace for a particular idea or product.
- **Partner Interface Spaces:** Areas in which researchers can interact with potential or existing industry partners is essential, likely requiring an element of privacy.

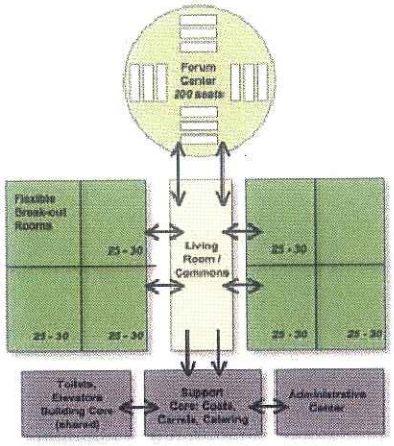




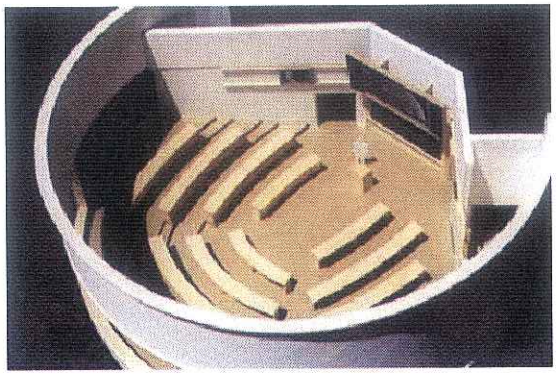
- **Prototyping Laboratories:** One could imagine the pre-incubator development of market-viable prototypes with commercialization potential requiring a more robust infrastructure than conventional research space. Such facilities can accommodate specialized equipment borne of innovation agreements.
- **Core Facilities:** Finally, the provision of core facilities have been informed by the perspective of industry partnering; that is, there are core facilities which industry partners may utilize as an enhancement to the relationship with WID | MIR colleagues. As stated earlier, the vivarium and computational sciences spaces emerged as the most essential ones.

The Workshops' input will lead to a variety of locations for these program elements: basement location of sensitive equipment (to ensure vibration and electromagnetic interference control) and private, yet embedded, partner interface areas to immerse all participants in the richness of collaborative interdisciplinary research neighborhoods.

THE WISCONSIN IDEA
EDUCATION AND OUTREACH



COMPOSITE OF FORUM CENTER



FORUM CENTER

The Vision of WID | MIR from the outset included Education and Outreach as integral components. Knowing that Education would impact the University and its academic activity, the WID Program Committee chaired by Marsha Seltzer, acting WID Director, developed the programmatic direction for Education and Outreach while the design team and building workshop participants pursued the spatial and facility implications. The evolution of the Programmatic content will continue as the project moves into design.

EDUCATIONAL MISSION OF WID | MIR

Early on, workshop participants recognized the broad nature of this charge. To guide the decision making, two key questions were asked.

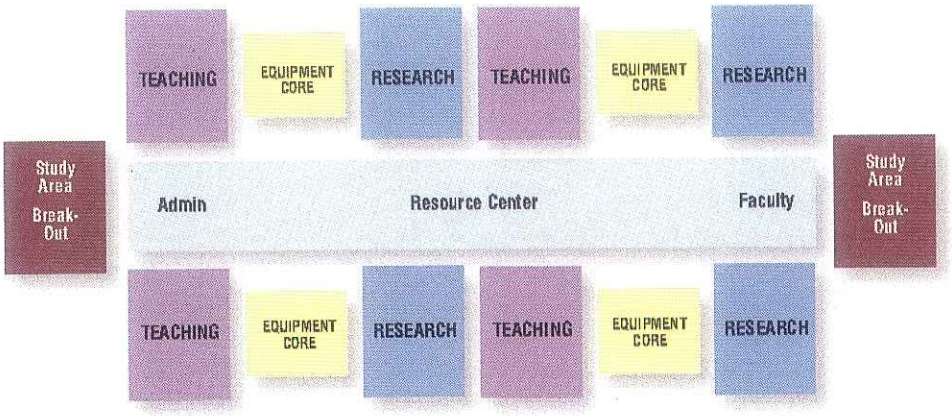
1. What activities within Education best advance the Mission of WID | MIR?
2. What activities within Outreach best advance the Mission of WID | MIR?

These two questions will guide the Program in the months ahead.

DEVELOPING THE SPATIAL MIX

Through a collaborative process, this workgroup and design team sought a set of program elements that best resonate with the emerging future of WID | MIR while retaining an essential flexibility to allow change. Four basic components emerged as critical to Education and Outreach.

1. **An Embedded Teaching / Research Studio**
   A unique research and teaching opportunity exists within WID | MIR; namely to facilitate undergraduates being mentored by and participating in the interdisciplinary research that is WID | MIR. To foster this experience, research / teaching studios will be embedded on each research floor to allow students to develop their work in close proximity to the interdisciplinary teams.
2. **A Center for Science Education and Research**
   A second important dimension of Education and Outreach is to create a center for developing science education and research. This model envisions grad students, post docs, science teachers from around the State and a broad range of faculty working on the future of science education and research. This center will spark the development of new pedagogies. Teams of students and faculty would utilize the studio spaces as testing grounds and the resource center to develop and share best practices (see diagram, page 16).



RESEARCH / TEACHING CENTER

3. **A Forum Center for 200**

WID | MIR is envisioned as an active place for developing the future of interdisciplinary science. A Forum Center is seen as a natural extension of this mission. National and international groups would assemble here to discuss their ideas and speed development of new technologies and breakthroughs. From the outset, a natural synergy developed around Union South and its potential to compliment this idea. Rather than build a large conference center, the team saw the benefit of creating a Forum Center for 200 people. Larger gatherings can be accommodated in Union South. Similarly, overnight accommodations, recreational activity and banquet facilities will exist there to foster the synergy of WID | MIR and Union South.

4. **Exhibit Hall / Demonstration Space (Discovery Niches)**

The excitement of Science is worth celebrating. The Town Center, with its public atrium, is the perfect venue for exposing the visiting and campus community to the ongoing activity of WID | MIR. The Town Center is both a place for gathering and a crossroads for the campus community to pass through. The character of the exhibit / demonstration space will be evolved as the design emerges in the next phase.

NON FACILITY IMPACT OF EDUCATION AND OUTREACH

Recent NIH funding has favored integrated education and outreach activities in their award evaluation system. This WID | MIR model of Education and Outreach will speak to that. Simultaneously, we recognize that Education and Outreach, as described, will need an ongoing operating plan to keep the programs vital and evolving in parallel with WID | MIR.

EMERGING IDEAL ADJACENCY PLAN

The last important discovery in this concept program effort was the recognition that Education and Outreach touches the entire spectrum of activity within WID | MIR. Again and again, the integral nature of these activities emerged. As a springboard to the design stage that follows, we tested one and two story versions of the Town Center / Education and Outreach programs. The two story stacking model emerged as preferred as it allowed the openness and accessibility that are central to the Town Center. As we move into design alternatives, this finding will be tested further to seek an ideal adjacency model.

THE TOWN CENTER
DISCOVERY AT THE CROSSROADS

GATEWAY LOCATION

IDEAL SITE FOR TOWN CENTER

CREATING A VIBRANT PATH AND ENGAGING DESTINATION

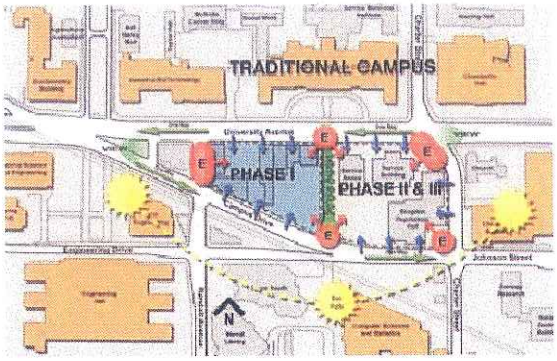
Creating a "Town Center" in a cutting edge research facility is a bold strategy, and it's no accident that Wisconsin is one of the first in the nation to do it. In 1904, President Charles Van Hise's Inauguration speech announced his intention to create a new kind of university, one which emphasized knowledge in service to the public good. That knowledge was supposed to be created through an equal emphasis on the rigorous pursuit of research and the robust pursuit of relationship-building through frequent interaction. The Wisconsin Idea, as envisioned by Charles Van Hise and Bob La Follette, posited the creation of knowledge as a civic pursuit and turning the University into a powerhouse of world-changing ideas. Past leaders would be pleased to see the true "Wisconsin Spirit" manifested in its newest form on campus.

WID | MIR will have a "Town Center" to foster social interaction supporting the collaborative interdisciplinary research mission. The Town Center workgroup evaluated the site and program as a "social interaction continuum" from the research lab environment to the interior public realm and connection to the campus, city and region. The particulars of the site are well suited to this goal.

THE SITE AS A CROSSROADS

The location for WID | MIR is set between the traditional and urban campus of the University. It is central to a wide range of contributing scientific disciplines, and acts as a "gateway" between the suburban region and urban center of Madison. This "crossroads" location is ideal to join the targeted departments, the whole campus, and the region through a dynamic "Town Center" in support of the mission of the Institutes.

Simultaneously, the Wisconsin Union is planning a new facility south of the WID | MIR site. A potential for the program and design of both initiatives to be complementary and synergistic exists. The student-centered program for the new Union facility will include many community-building amenities such as food outlets and meeting spaces that can serve as complementary programmatic elements to the WID | MIR initiative. Under the Union's site, UW Transportation Services will be building a parking structure. A multi-modal transportation hub may also be provided for regional arrival to WID | MIR. Pursuing parallel design tracks, these two initiatives can work architecturally to form a civic space along Campus Drive and a gateway to the campus from the west.

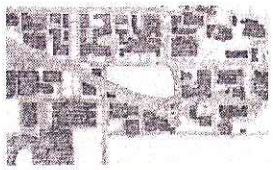


SITE ANALYSIS

SITE

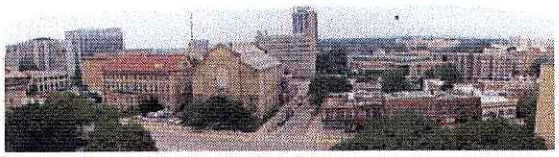
THE SURROUNDING ENVIRONMENT

At the juncture between the "Traditional Collegiate" and "Urban Collegiate" design neighborhoods (indicated in the Campus Master Plan) the site presents an opportunity to join these two distinct campus sectors. In addition to enhancing street landscapes on the east-west regional thoroughfares, developing the Orchard Street Corridor as a linear landscaped "place" could further knit together the entire district. This landscaped environment can become a major north-south connecting link between the northern parts of campus, WID | MIR, the new Union facility and the evolving Regent Street corridor neighborhood. Given traffic volume and the regional importance of University Avenue and Johnson Street, service for WID | MIR will be proximate to the Orchard Street Corridor. In order to not compromise the proposed



IMPERVIOUS SURFACE

LANDSCAPE



ORCHARD STREET

Orchard Street landscaped pedestrian environment, a variety of service options including below grade locations and a tunneled connection to a service area east of the site are under consideration.

Retail is anticipated as a key for creating an engaging street level experience. Program opportunities that promote social interaction such as a café and coffee shop are targeted. A scientific gift shop or bookstore could also emerge. These retail components are anticipated to be located on major pathways, adjacent to entrances and accessible from both the street and interior commons of the building. Activating this "Vibrant Path" with a 'round-the-clock presence (in tandem with the Union's efforts) will promote safety for researchers working late, and for others in the area.

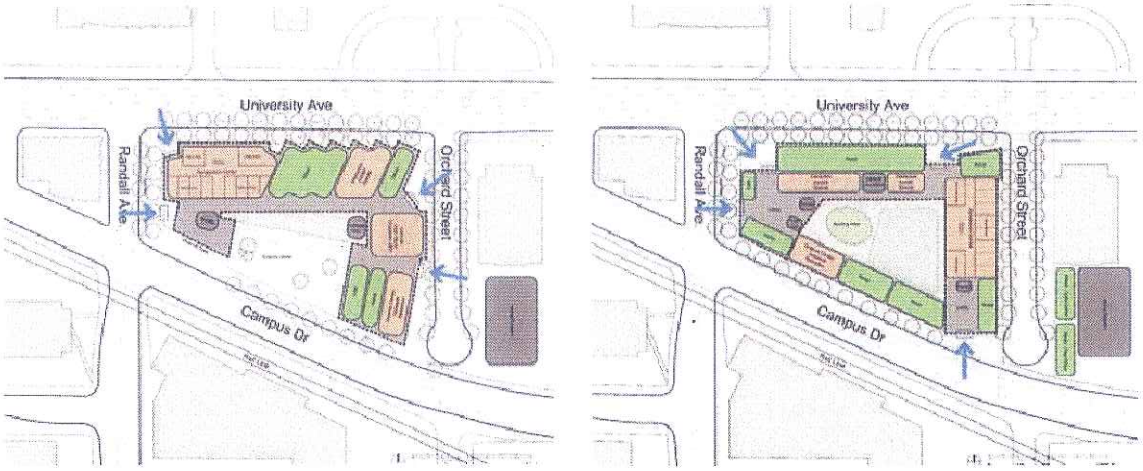
SOCIAL INTERACTION SPACE

THE INTERNAL ENVIRONMENT

Connecting the internal public realm with the exterior will be critical to making a vibrant path and engaging destination. Permeability and transparency are envisioned to link the inside and outside. A central social space (the internal commons) can be the catalyst for the WID | MIR community identity. The space is anticipated to have these design attributes:

- A vibrant pathway sized to connect destinations around the site
- Scaled to promote comfortable interaction between resident researchers and the broader community
- Accommodating a wide variety of events including spaces for outreach and education
- Spaces for a business acceleration center including a legal, ethics, and grant writing consultation
- Active dining areas and adjacent retail components
- An abundance of natural light taking advantage of the south light
- Visually accessible from the outside
- Visually connected to the research environment: "science in sight"
- Technologically advanced
- The space can be an educational space in itself through the use of discovery niches, video displays, and glass walls that allow examination of inner workings of WID | MIR
- Landscape should flow from outside to inside with the possible use of running water, e.g., water walls

In addition to a central commons, individual winter gardens or small commons spaces are proposed for the research environment as neighborhood centers. These small common spaces will act as respites from the intensity of the research environment and as catalysts for local "neighborhood" interaction. Pantries, service areas and team spaces can be grouped around these winter gardens as "draws" for neighborhood researchers.

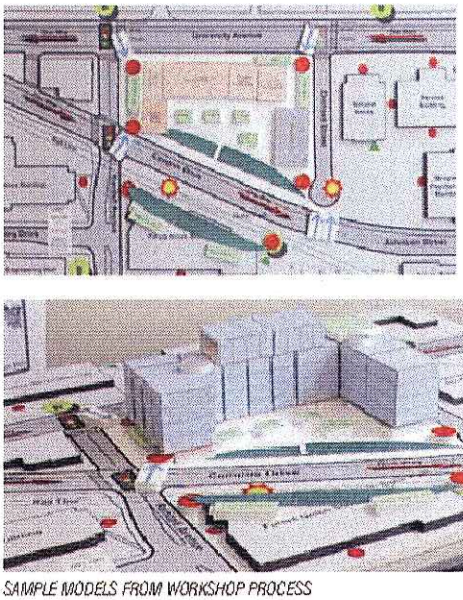


SAMPLE TOWN CENTER STRATEGIES

TOWN CENTER STRATEGIES

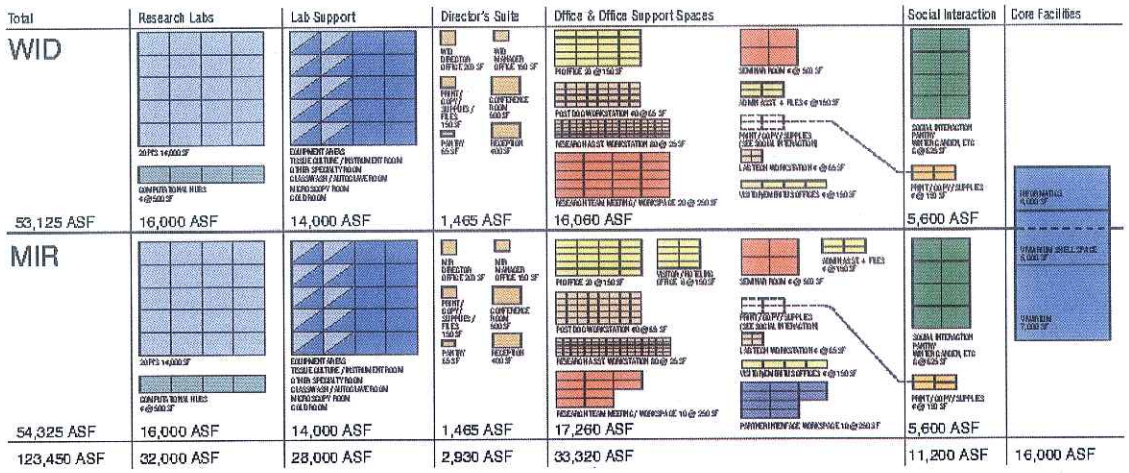
Through a program model exercise, the Town Center workgroup separated into sub-groups to address how to make WID | MIR a vibrant path, an engaging destination and a comfortable environment for resident researchers. This exercise yielded a variety of internalized program arrangements and internal commons space strategies. They illustrate the interplay of elements central to a vibrant town center.

In the design phase that has begun the character of the town center has emerged as a defining component. The concept alternatives have taken the ideas from this workgroup forward in concert with the Research Neighborhoods above. The interplay between research floors and the Commons / Town Center promises to be special.



SAMPLE MODELS FROM WORKSHOP PROCESS

WHAT MAKES THE WHEELS GO 'ROUND
BUILDING OPERATIONS AND MANAGEMENT



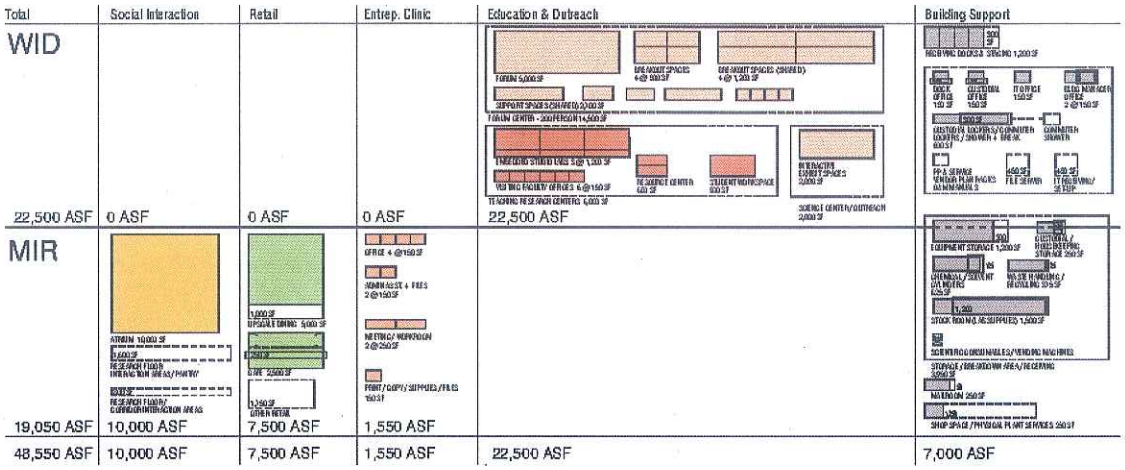
DETAILED PROGRAM - RESEARCH: WID | MIR SPLIT

Effectively planning for the operation of the WID | MIR facility is critical to the building's ultimate success as an operating entity. WID | MIR is a single building with two separate owners: The University of Wisconsin and The Morgridge Institute for Research (MIR). MIR is a private, non-profit research organization entity created by the Wisconsin Alumni Research Foundation (WARF). The design and construction of the building's WID | MIR components are governed by a Master Term Sheet and Development Agreement executed among the State of Wisconsin, the University and WARF which reflects the actions of the State of Wisconsin Building Commission in its approval of the project on April 19, 2006.

The facility's operation will be guided by an agreement between the University of Wisconsin and The Morgridge Institute for Research which will deal with the sophisticated overlay of building systems and services and their operation. This agreement will clearly delineate roles and responsibilities within the enabling actions taken in approving the Institutes. At this point, the most critical areas that may influence the building design fall into the categories of space, identity, services, utilities and parking. These goals are described as follows:

SPACE

- A hard property line will separate the site into a WID side and a MIR side, leaving two city parcels, registered on a certified survey map.
- A clear, continuous physical demarcation will separate the building's WID and MIR areas, following the property line to the fullest extent possible.
- Clear separation is particularly important for the laboratory floors. However, a more crooked line may distinguish WID and MIR for areas such as mechanical rooms or basement core facilities, where separation along the property line would create real space or operational inefficiencies.
- While there will be many shared-use spaces, each space necessarily belongs to either WID or MIR.
- Both sides of the facility will aim for common infrastructure and systems; e.g., light fixture types.



DETAILED PROGRAM - NON-RESEARCH: COMMON SPACE

IDENTITY

- Types and quality level of finishes will be generally the same on both sides, though the design team have yet to explore subtle interior differences – such as shades of paint, or in room number signs.
- WID and MIR will share entry from all sides into the porous first floor common space – no separate main identity entrance door; no particular exterior identity.
- WID and MIR will have separate (though perhaps adjacent) administrative spaces with interior signs indicating points of arrival for each.

SERVICES

- WID and MIR share one provider of service for functions such as campus/US mail, landscape care, snow removal, custodial care, maintenance mechanics, laboratory safety oversight, etc.
- The entire complex will act as one building in providing spaces for these services (e.g., one common mailroom, one dock area, one recycling collection point).
- Existing UW service sources will likely provide many of the required building services, though WID and MIR may outsource or supplement campus services. Operating agreements will be executed defining the provider of various services. Similar agreements for shared campus facilities are being used as a guide (for example, the Clinical Science Center on the west campus).

UTILITIES

To the extent practical, utility services to the WID and MIR sides will be separately metered. Where such separation isn't practical, charge-backs will be calculated on a prorated square-footage basis (roughly 1/3 - 2/3). Unnecessary splitting and duplication of systems is not desired (e.g. RO water system, and the main utility services to the complex from the street).

PARKING

UW Transportation Services will provide parking for WID | MIR. Rates will follow the same structure as the rest of campus. The quantity of stalls available for MIR will be negotiated. Some reserved visitor stalls will also be provided by UW Transportation services at the same rates as the rest of campus. The future Union South garage will provide for the long term project parking needs. Interim parking will be provided until the new garage opens (1 - 2 years).

BEST PRACTICES: SUSTAINABILITY

The Best Practices Sustainability subteam employed a comprehensive process in recognition of the enormous breadth of the issue. **Sustainability Goals** are aimed at having as much effect as is reasonably possible through a set of **Guiding Principles**. The intention is to provide a context for meaningful and measurable environmental sustainability to the design and construction team.

Guiding Principles are augmented by a framework of **Sustainability Strategies** positioned within two sets of factors:

- Five **Life Cycle Stages** of the building, from creation, through ongoing operation, use, and adaptation, to final deconstruction.
- Five **Evaluation Parameters**, which comprise the major categories of building related environmental sustainability. Each Evaluation Parameter sets a quantitative or qualitative **Metric** and a **Performance Target** for the Life Cycle Stages.

The intent is that the Sustainability Strategies will be used by the design and construction team, and subsequently the ownership and operational entities to develop specific **Implementation Tactics**.

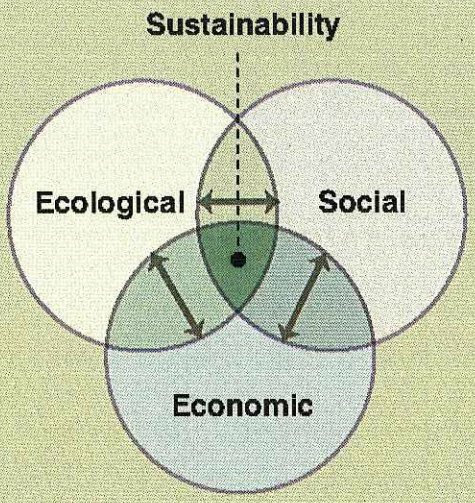
Relative to the breadth of the issue, it is understood that this is a single facility which must satisfy both its program and its budget. However, the intelligent design of the building and the subsequent active engagement of those who occupy it have the ability to influence sustainability, broadly, by providing an example and promoting understanding of the issue.

SUSTAINABILITY GOALS

- The WID | MIR facility will be as environmentally sustainable, throughout its life, as is technically feasible within the budget available, while satisfying the building program and the overall mission of the Institutes.
- The facility is intended to serve as an example of sustainable design and construction, systems operation, and occupancy for the University of Wisconsin - Madison campus and the broader community.

HUMAN HEALTH & WELFARE
IS THE CORE MISSION
OF THE
WID | MIR RESEARCH PROGRAM.

SUSTAINABILITY IS ABOUT
HUMAN HEALTH & WELFARE
IN THE CONTEXT OF
NATURAL SYSTEMS HEALTH
AND THE BENEFICIAL
PERFORMANCE
OF SOCIAL SYSTEMS.



GUIDING PRINCIPLES

1. The design and construction team will approach sustainability in an holistic manner and will seek synergistic solutions in the spirit of collaborative discovery that is the mission of the Institutes.
2. Sustainability performance targets are to be achieved without increasing the cost of the building, although ideas which increase cost and have additional long term benefit will be put forth for consideration.
3. A primary objective is to reduce CO2 emissions in the operation of the building in recognition of the current accelerating risk of irreversible climate change and in anticipation of a future regulatory environment that creates reduction incentives through diminishing emissions allocations and carbon markets. Targets of a 50% reduction in CO2 emissions and a 50% reduction in water use are proposed as compared to recently constructed laboratory buildings on the UW-Madison campus. Secondarily, the design and construction team will target a US Green Building Council LEED Version 2.2 Gold rating, with the understanding that this metric has limited applicability to the energy performance of laboratory buildings.
4. The design and building process will be documented by the University of Wisconsin - Madison College of Engineering. Business-as-Usual comperative benchmarks will be defined incrementally with the best information available.
5. The design and construction team accomplishes the "Making" Life Cycle targets. The design and construction of the building will facilitate achievement of the targets for Operating, Using, Maintaining & Changing, and Deconstructing the building through decisions that inform the activities of the occupants, operators, and others that interact with the building. Accomplishing these subsequent targets will require ongoing activities after the design and construction team has completed its work.
6. The design of the building will promote an understanding of sustainability issues in the use of the building.

LIFE CYCLE STAGES / EVALUATION PARAMETERS	MAKING the Building	OPERATING the Building	USING the Building	MAINTAINING & CHANGING the Building	DECONSTRUCTING the Building
CARBON EMISSIONS TARGET: 50% REDUCTION IN CO_2e EMISSIONS (OPERATING + USING) (VS RECENT UW LAB BUILDINGS)	• Minimize Transportation of Materials, Products, People • Simplify Building Systems: Structure, Envelope, HVAC • Provide Building Systems with Durability and Longevity	• Design High Efficiency Building Envelope • Design High Efficiency HVAC Systems • Design High Efficiency Lighting and Day Lighting Systems • Require Initial and Ongoing Building Systems Commissioning	• Permit Occupant Control of Local Environmental Systems • Minimize Process / Plug Electrical Loads through Conservation Techniques	• Design Systems for Ease of Maintenance to Support Longevity of Systems • Design for Reuse / Recycling of Furnishings, Equipment, and Interior Fit-Out Components	• Design for Adaptability and Durability of Building Floor Plate and Shell for Long-Term Utilization • Design for Deconstruction of Furnishings, Equipment, and Interior Fit-Out Components to Salvage or Non-Virgin Feed-Stock Value
WATER USE TARGETS: 50% REDUCTION IN WATER USE (OPERATING + USING) (VS RECENT UW LAB BUILDINGS)	• Minimize Transportation of Materials, Products, People (Production of One Gallon of Gasoline Requires 6 Gallons of Water) • Minimize Water Use in Construction	• Provide Water Fixtures that Minimize Water Use	• Implement Occupant Processes that Minimize Water Use • Provide Process Equipment that Minimizes Water Use	• Implement Maintenance Processes that Minimize Water use	
WASTE PRODUCTION TARGET: 50% RECYCLING AND WASTE DIVERSION (MAKING + USING + CHANGING + DECONSTRUCTING)	• Facilitate Reuse/Recycling of Demolition and Construction Waste Materials • Minimize Waste in Fabrication and On-Site Construction		• Design for a Reuse/Recycling Culture of Bldg Occupancy • Implement Materials Management Programs to Account for and Maximize All Inputs / Outputs	• Design Systems for Ease of Maintenance to Support Longevity of Systems • Design for Reuse / Recycling of Furnishings, Equipment, and Interior Fit-Out Components	• Design for Adaptability and Durability of Building Floor Plate and Shell for Long Term Utilization • Design for Deconstruction of Furnishings, Equipment, and Interior Fit-Out Components to Salvage or Non-Virgin Feed-Stock Value
ECOLOGY & HABITAT TARGETS: ON-SITE NATIVE HABITAT + ACTIONS TO SUPPORT OFF-SITE HABITATS	• Incorporate Green Specifications for Materials and Finishes • Integrate Natural Habitat Systems with Built Systems • Control the Quality of Stormwater Run-off during Construction			• Incorporate Green Specifications for Materials and Finishes	
HUMAN HEALTH TARGET: PHYSICAL AND EMOTIONAL HEALTH TO SUPPORT PRODUCTIVITY	• Incorporate Green Specifications for Materials and Finishes • Design the Workplace for Physical and Emotional Health	• Design Effective Heating, Ventilation, and Air Conditioning Systems • Permit Occupant Control of Local Environmental Systems	• Permit Occupant Control of Local Environmental Systems	• Incorporate Green Specifications for Materials and Finishes • Incorporate Green Safe Cleaning Practices • Provide Systems Flexibility to Support Organizational Change	

SUSTAINABILITY STRATEGIES

BEST PRACTICES: CHANGEABILITY

Change is an inherent aspect of discovery research. As advances are made, and understanding increases, changes in research occur. Science facilities must accommodate these changes in a manner that is timely, technically feasible, and affordable.

The objective of the Best Practices: Changeability subteam is to guide the WID | MIR team in making prudent pre-investment decisions regarding which changeability features should be incorporated into the WID | MIR facilities.

Perhaps the first Science building intentionally designed and constructed to anticipate change was the Salk Institute. (see Benchmarking, page 28) Its first phase of construction was dedicated in 1965. It defined features used regularly since, such as modularity of space planning and utilities.

Since then, science facilities have routinely invested initial capital in features intended to reduce the cost and time associated with future building changes. Too often, however, significant initial investments are made that are not fully utilized. Exacerbating this situation has been inadequate communication between designers, operators and researchers regarding what pre-investments to make, and how to actually use these features.

PRE-INVESTMENT LOGIC

With an aim of prudent pre-investment, the following rationale has been established for the WID | MIR project:

1. The mission of the WID | MIR Program will have higher churn rates than "typical" University of Wisconsin research buildings.
2. Different functional areas may require different changeability features. For example, MIR space may turn over more rapidly than WID space.
3. Changeability features in the context of WID | MIR as a 100 year building will be based on the following:
   - It will remain a research facility
   - It will expand in subsequent phases
   - It will experience some major changes
   - It will experience innumerable minor changes
   - It will be fully occupied throughout its life
4. Pre-investment will focus on ideas with real payback value.
5. Changeability must be logical and accessible for technicians.

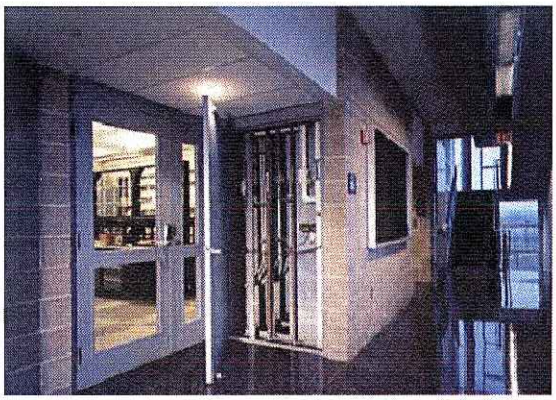
OVERHEAD SERVICE CARRIER FLEXIBILITY

FLOOR FLEXIBILITY

BALANCE CURRENT USE VS. FUTURE CHANGE

In the upcoming Formation Phase, changeability options will be studied to allow prudent pre-investment decisions to be made. Some of these decisions are irreversible, such as floor to floor heights, column spacing and placement of stairs, elevators, and shafts. Historical experience and the needs of this project will guide these decisions. Other decisions, such as fit-up details, the likelihood of converting between different types of labs, and others will be made to balance pre-investment and future inconvenience and expense. Examples shown below illustrate the nature of these changes.

- Lab Furniture Flexibility
- Overhead Pipe Services
- Underfloor Pipe Services
- Wall Access Logic
- Overhead Service Logic



EASE OF ACCESS TO UTILITIES

CORRIDOR ACCESS OVERHEAD

BEST PRACTICES: BENCHMARKING

The objectives of benchmarking for the project were as follows:

- "Read the literature" of recent projects: Be on the cutting edge of what's being done
- Identify and document best practices employed by other prestige research centers with respect to philosophy / mission, research programs, research tools, operations, and facilities
- Insure that WID | MIR puts in place the most appropriate facilities and programmatic elements for its situation and location: lab type(s), core capabilities
- Provide descriptive and visual tools for the building and program teams
- Define metrics by which WID | MIR success will be measured
- Characterize facilities with unique program elements of particular relevance to WID | MIR

Criteria for selection of institutions to be benchmarked with respect to overall program parameters were:

- Size: comparable to WID | MIR (220K-350K GSF/140K-230K NASF)
- Stated commitment to interdisciplinary research across biology, chemistry, nanotechnology and computational sciences with bio-medical focus
- Recent construction (since 2000)

INSTITUTIONS BENCHMARKED

Program wide (all visited except for Broad and Fitzpatrick Hall):

- Biodesign Institute, Arizona State University, Tempe, AZ
- Broad Institute, MIT, Harvard, Whitehead Institute, Affiliated Hospitals, Cambridge, MA
- Clark Center, Stanford University, Palo Alto, CA
- Fitzpatrick Hall, Duke University, Durham, NC
- Janelia Farms Research Campus, Ashburn, VA
- Salk Institute, La Jolla, CA (visited but not complete information)
- Stanley Hall, UC Berkeley, Berkeley, CA

Unique elements:

- Cal IT2, Atkinson Hall, UCSD, San Diego, CA: use of information technology and visualization
- Medical College of Wisconsin, Milwaukee, WI: laboratory arrangement and casework

CLARK CENTER

JANELIA FARM

GENERAL FINDINGS AND NOTEWORTHY EXCEPTIONS

We gathered both quantitative and qualitative data related to the building program, scientific program, governance, delivery parameters, education and outreach programs, and industry interface / tech transfer. (A separate report to this summary.) In general, most facilities were similar in terms of their quantitative parameters such as space/lab, cost/NASF, etc. (see page 35) A key area evaluated was how each project met the needs of the ultimate occupants of the building with respect to lab, office space, and core capabilities. In general, with the exceptions of Fitpatrick and Stanley Halls, the buildings were designed without specific users but rather through interviews with surrogate users.

CORE CAPABILITIES COMPARISONS

1. Vivarium: A common pattern of these projects is the inclusion of a vivarium either directly in the project or in the immediate vicinity. (see page 33.) In several of them, provision was made to allow the core to grow in the future with the initial plan based on roughly 20% of the faculty using animal modeling. Similar ideas have been adopted for WID | MIR. (see Vivarium, page 12.)
2. Other cores: With the exception of Janelia, cores are limited to specific focus of the facility.

Final conclusions: No other facilities aim to incorporate interdisciplinary biomedical research, a vibrant hub for activity, and integrated socialization (education, outreach, industry interface).

SALK INSTITUTE

SELECTED FACILITY COMMENTS AND OBSERVATIONS

Arizona Bio Design Institute: 350,000 SF A two phase development of 175,000 SF each, this center features open labs and offices organized around a glass enclosed street. As designed, it had to be flexible to accommodate future users who were not part of the process. Minimal provisions were made for interaction. Phase 2 included a large animal facility 35,000 SF and a small café. Future phases anticipate an auditorium / symposium center.

Clark Bio X Center: Stanford 245,000 SF An experimental interdisciplinary research building, Clark was conceived by a core team of four faculty members. Set in the context of other research buildings, Clark sought to attract a variety of research disciplines through a similar vehicle as WID | MIR. The design result is very open inside to a courtyard (see picture, opposite) with the principal common spaces (cafeteria and auditorium) at one end. The laboratory environment is very flexible with overhead utilities and moveable furniture. In practice, the infrastructure has proven to be less malleable.

Cal IT: UC San Diego 215,000 SF Impressive permeation of technology throughout the building, e.g. display walls in corridors, high definition projection in large auditorium, excess networking capacity. Impressive use of orthogonal utilities bollards to allow changeability. An orderly presentation of workspaces in large open dry labs.

Janelia Farm / Howard Hughes Medical Institute: 740,000 SF This ambitious project sought to create a research campus on a virgin site from scratch. Recently opened, Janelia is designed into a hillside (see picture, opposite) with pods of office spaces articulated from a larger block of research space. The program is intended for interdisciplinary science but evolved with no user input. Research cores are provided including animal space. Shell space was provided to allow flexibility for future occupants. Opened in early 2007, Janelia is only 20% occupied at present.

Stanley Hall: UC Berkeley 291,000 SF This is an example of an interdisciplinary building tailored to the specifications of known occupants. The labs are fairly conventional, though thought was given to the general needs of biologists vs. chemists vs. computational scientists.

Salk Institute: La Jolla 200,000 SF Salk remains as a seminal building from the 1960's. A product of collaboration between a visionary architect, Louis Kahn, and Jonas Salk, the building was conceived as two parallel flexible wings of research space with articulated office pods for individual faculty (see picture at left). Unlike so many of its contemporaries, Salk has retained its importance because its research space was anticipated to change. The evolution of research toward teams has been possible; the office pods for individual researchers are not as useful. The sheer beauty of the site remains intact.

BEST PRACTICES: URBAN CAMPUS CONTEXT

MASTER PLAN SITE AND BUILDINGS

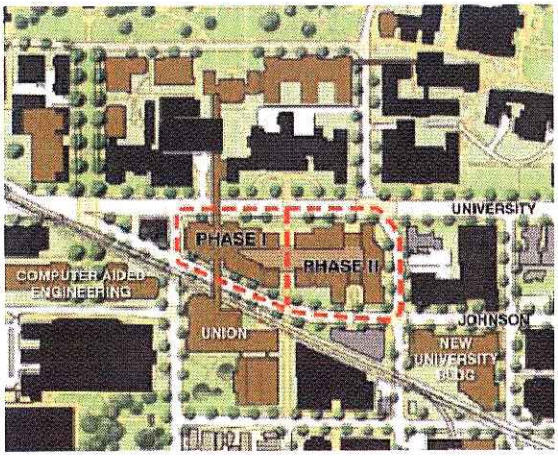
The Campus Master Plan envisions the WID|MIR initiative to be a four story transitional link between the "Traditional Collegiate" and "Urban Collegiate" design neighborhoods, and to establish a new architectural standard for the institution. This gateway site will be surrounded by existing and improved buildings to the north and a series of replacement buildings to the south that will be implemented over the next 2 - 4 years. These include:

- **New South Campus Union:** 5 - 6 floors
- **Computer Aided Engineering Building:** 5 - 6 floors
- **New University Building:** 5 - 6 Floors
  Site between Johnson and the Computer Sciences Building

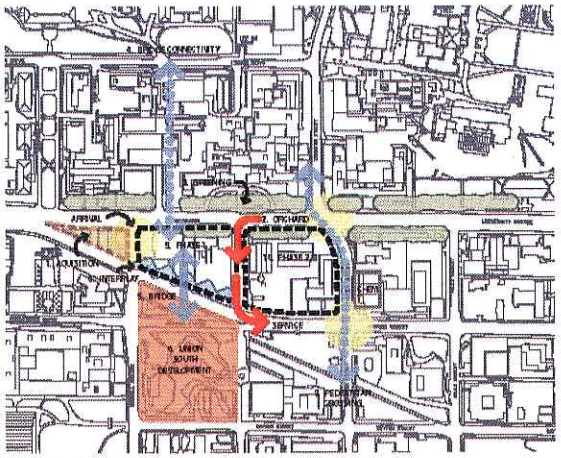
The property west of the WID | MIR site is privately owned and is not anticipated to be acquired as part of this project. Thus, the design of the WID | MIR initiative must assume that this site could be a developmental parcel as foreground to the building. The Campus Master Plan also indicates a possible future pedestrian bridge connecting the traditional campus, WID | MIR and the New Union. Accommodations for the possible future implementation of the bridge will be provided in the WID | MIR design. In addition, the master plan also envisioned that Orchard Street would be vacated to accommodate future expansion of WID | MIR. In recent meetings with the City of Madison, it is now anticipated that vacating Orchard Street will be difficult in the first phase development of the WID | MIR initiative, but is anticipated to occur later in phase two. Vacating of Johnson Street between Randall and Campus Drive is likely, providing for the new Union South to formally front Campus Drive and architecturally embrace WID | MIR.

TRANSPORTATION

The site is presently well served by both campus and city bus lines that will be generators for pedestrian traffic to and through WID | MIR. A multi-modal transit hub within the Union's site may include a large-group drop off area for WID | MIR. Transportation Services will build structured parking (likely underground) within the Union site for approximately 500 cars to be implemented in two phases of 250 cars each. This parking garage is anticipated to consolidate a number of existing campus sector surface lots. Parking will serve both the Union and the WID | MIR initiative.



MASTER PLAN OF WID | MIR SITE AREA



SITE ISSUES: WID | MIR

STREETS AND TRAFFIC

As major regional arterial streets, University Avenue and Campus Drive / Johnson Street currently accommodate a volume of 35,000 cars per day each way. With this volume anticipated to grow in the future, these traffic calming measures are expected to improve north-south pedestrian connections:

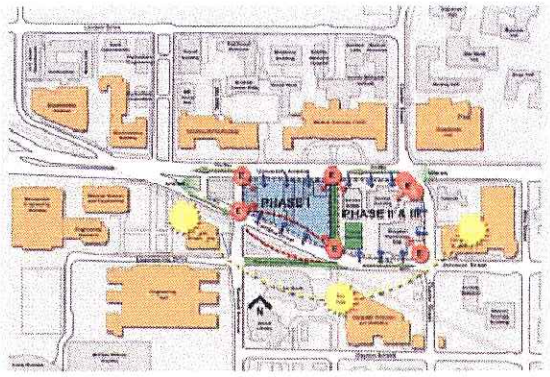
- Future long term reconstruction of the intersection of Campus Drive and University Avenue
- Signalized pedestrian crossings with special paving treatments at Orchard Street intersections with University Avenue and Johnson Street
- Provision for future pedestrian bridges across University Avenue and Campus Drive

Bicycle commuting is an important part of the Madison culture, and is encouraged in the Campus Master Plan. The Union site is likely to include a "bicycle station" with lockers, showers, and repair facilities to support bicycle commuters.

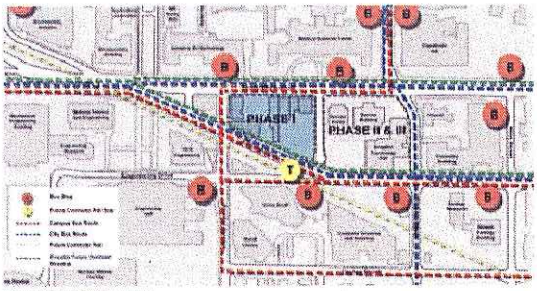
ENTRANCES / SERVICE

Multiple entrances are anticipated for WID | MIR, with primary access adjacent to arterial pedestrian crossings. In addition, retail will provide secondary linkages between the internal and external environment. All of these entrances will facilitate cross site pathways through the site. The creation of a pedestrian "cross-roads" is intentional. It creates more opportunities for serendipitous "bumping into people."

Given the traffic volume and the regional importance of University Avenue and Johnson Street, service for WID| MIR is anticipated to be near Orchard Street. In order to not compromise the proposed Orchard Street landscaped pedestrian environment, a variety of service options including below grade locations and a tunneled connection to a remote service area east of the site are under consideration. In addition, below grade service for the new Union is being considered to further enhance the possible north-south Orchard Street pedestrian corridor.



WID | MIR: PHASES I, II, & III



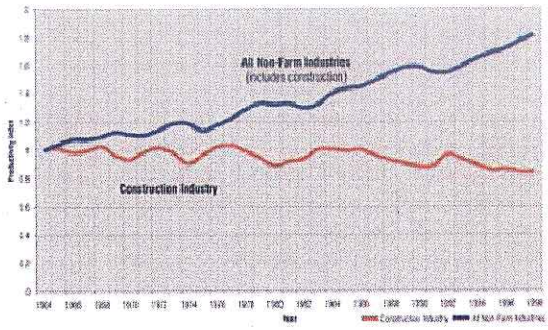
TRANSPORTATION HUB

PARKING TODAY

BEST PRACTICES: LEAN DELIVERY

COMMITMENT TO LEAN DELIVERY

WARF and the University of Wisconsin, through the creation of WID | MIR, will set new standards for interdisciplinary research and collaborative learning. The process of creating the physical facility to support the WID | MIR effort can also set new standards by delivering greater value than current design and construction industry practices in Wisconsin generally achieve. Lean Manufacturing-Lean Production Management (Toyota Production System) has already reshaped manufacturing design, supply, and assembly around the world. WARF, through WID |MIR, seeks to effectively translate appropriate lean principles to bring better value by increasing scope and quality for the same cost as compared to "Business-as-Usual" in the construction industry.



PRODUCTIVITY COMPARISON

WID | MIR LEAN DELIVERY SYSTEM

Joining the architectural team of Uihlein Wilson and Ballinger is the construction management team of J.H. Findorff and Son and the M.A. Mortenson Company. Together with WARF and the University, a Core Team is being established to serve as the "deciders" on the delivery of the facility. A single Integrated Project Agreement among the three parties will guide the contractual relationship. The Integrated Project Team includes WARF, University of Wisconsin-Madison, Uihlein Wilson & Ballinger, Findorff/Mortenson. Other consultants, engineers, sub-contractors, and suppliers may join the Core Team too.

The Core Team is developing commitments to deliver the project in a different way. These commitments involve:

- **Collaboration:** Collaborate throughout the Formation, Procurement and Delivery phases with all members of the team recognizing that the leadership of Owner, Designer, and Construction Manager is project wide and not based solely on the magnitude of effort at any single point on the project timeline. Engage major subcontractors and suppliers at end of the formation phase. Use the "Big Room" Design Workshop strategy throughout the project.
- **Minimize Waste:** Learn to recognize and eliminate the forms of waste defined in Lean Process and Practice throughout the life of the project.
- **Reliable Promising:** Each team member agrees to help develop the reliability of work flow across the entire project timeline by having the willingness and ability to make reliable promises.
- **Planning and Scheduling:** Project scheduling must be based on the Lean principle of "Pull Scheduling". End of work stream outcomes are identified and then work is extracted (pulled back) back to the current condition. The developed work stream must be connected and have a clear way to request action and receive a response (Should, Can, Will, Did). The plan must be based on collaborative planning by all team members who will perform in a phase. Team focus is on making things happen rather than monitoring.
- **Dynamic Cost Modeling / Target Value Process:** The maximum price of the project together with any contingencies is identified in the Concept Program Summary. Initially, the model will be developed using a combination of historical project data, current industry cost information, and systems-based cost data. Through the sharing of incomplete information, the collaborative expertise of the team, and supported by BIM tools, the model will be used and updated in real time during the project formation, procurement and delivery phases. Budget milestones will be confirmation points that the project is in compliance with the maximum price of the project and not stopping points for the purpose of pricing. Owner, Designer, and Construction Manager cost teams will be charged with delivering set based design solutions to systems, components and sub-components within the target costs of those elements of the project. Immediate negotiation between target cost element teams will be required when a variance is detected to maintain the overall target cost of the project.

- **Building Information Modeling (BIM):** By using Revit Building by Autodesk, and other software, the design team will develop the physical components of the WID | MIR design as an association of elements with inherent parameters that maintain a dynamic internal relationship within a common data base. During the full life cycle of the building, information about the building can be extracted from the dynamic data base and be used to serve the interests of the Owner, Designer, Construction Manager, and future users. A higher level of skill and intensity is required in the initial development and maintenance of the model than traditional 2D drawings, but the dynamic nature of the model produces labor efficiencies over the life cycle of the building.
- **Risk Proposition:** Redefine the risk proposition by clarifying the risk types and fairly aligning risk and responsibility to the appropriate party. Allocate risks on the basis of benefit and responsibility, and share risks that cannot be predicted or controlled by a single entity. Eliminate cost premium for inordinate risk transfer.

WHAT'S DIFFERENT ABOUT LEAN DELIVERY

The general character of Lean described above has been analyzed to fit the WID | MIR project. As a result several dimensions of this effort are worth mentioning:

A. Early engagement of the Construction Manager (3 - 6 months early)

B. Joint cost modeling of concepts, systems and delivery thinking

C. Testing of subcontractor logic during design stages

D. Alignment of design sequencing with the construction logic

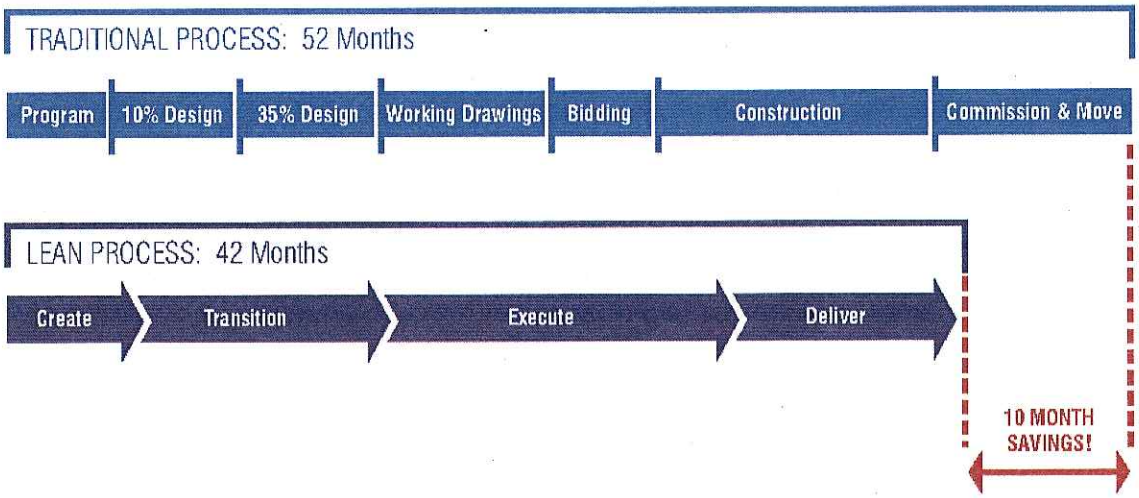
E. Focus on project risk factors

F. Single project contingency fund shared by 3 parties

G. Integrated Project Agreement

WARF VALUE PROPOSITION

Metrics: Deliver WID | MIR project with lean related cost savings (or value enhancements) of 5 - 10% and an overall schedule reduction of ten months, compared to conventionally delivered university science projects.



COMPARISON SCHEDULE

PROJECT BENCHMARKING
SPACE / BUILDING PARAMETERS

Five projects have been selected for Cost and Space Benchmarking. The accompanying chart reflects three sets of data pertaining to these examples.

1. Space Parameters
2. Building Parameters
3. Comparative Cost Data

Each set is worthy of some discussion.

The basic net square footage, gross square footage and efficiencies are the first set of data. Our baseline program is set at 172,000 NSF, 300,000 GSF and 57.3% efficiency compared with 55.7% for these five projects.

The building parameter picture reflects the character of the program compared to these five projects. The fundamental research mission of the five is similar. Each have core facilities although the extent of animal facilities varies as noted. Stanford and UC Berkeley use tunnels to connect adjoining facilities. None of the five projects have the breadth of Education and Outreach Space or Town Center Space contemplated for WID | MIR. Four of the five projects employed shell space for Day 1 occupancy.

The comparison of cost picture yields an average fully fitted out cost of $528 / SF for construction. The anomaly in this picture is Janelia Farms (not in average) at an astounding $800 / SF! All costs have been converted to Madison, Wisconsin location and the same 2008 - 2010 construction time frame.

SPACE PARAMETERS	STANLEY HALL UC BERKELEY	BIOSCIENCE RESEARCH UNIV. OF MICH.	BIODESIGN INSTITUTE ARIZONA STATE	CLARK CENTER STANFORD	HOWARD HUGHES JANELIA FARMS	AVERAGE OF FIVE PROJECTS
SIZE: NSF	145,000	277,000	208,000	146,000	380,000	231,000
SIZE: GSF	291,000	472,000	350,000	245,000	740,000	415,000
NET / GROSS EFFICIENCY	50%	58.6%	59.4%	59.5%	51.3%	**55.7%**
BUILDING PARAMETERS: PROJECT SELECTED FOR PARALLELS WITH WID | MIR INSTITUTES						
RESEARCH FOCUS	●	●	●	●	●	Similar Research Institute Model
CORE FACILITIES	Tunnel to Animals ●	●	●	Tunnel to Animals ●	●	Animal Facility or connected to one
EDUCATION / OUTREACH	Symposium Center with Auditorium	Auditorium Only	Future Provision	Auditorium Only	Auditorium Only	Limited Scope
TOWN CENTER	Limited Commons Café Only	Street Space + Snack / Lunchroom	Street Space Small Snack Area	Exterior Space + Cafeteria	Limited Commons + Cafeteria	Limited Model for Town Center
SHELL SPACE	None	114,000 SF ●	105,000 SF ●	To Be Confirmed ●	107,000 SF ●	Consistent Pattern of Shell Space
CONSTRUCTION AND PROJECT COST BENCHMARKING: CORRECTED TO MADISON & 2008-2010 TIMEFRAME						
CONSTRUCTION COST *	$138M	$307.0M	$169.7M	$135.3M	$591.7M	$186.2M
COST / SF	$472 / SF	$523 / SF	$484 / SF	$552 / SF	$800 / SF (NIC)	**$528 / SF**
SOFT COSTS	$57M	$76.1M	$60.3M	$76.0M	$196.1M	$74.4M
TOTAL PROJECT COST *	$195M	$383.1M	$230M	$211.3M	$787.8M	$260.6M

COST MODEL: SPACE BASED

In February 2006, the WARF Board of Trustees considered and approved the creation of The Morgridge Institute for Research in conjunction with the Wisconsin Institute for Discovery project. The suggested program for the WID | MIR facility was 315,000 gross square feet which was expected to yield approximately 165,000 net square feet. The preliminary projections for the development suggested a total project budget for the WID | MIR facility of $150 to $175 million, an all-in cost to include all construction and project related soft costs. This range was offered recognizing that the program elements would be further developed in the design phase. Ancillary costs in addition to the development budget were the land acquisition and relocation costs for the project site on the 1300 block of University Avenue. The target completion date was December 2009.

UPDATED WID | MIR MODEL
172,000
300,000
57.3%
BUILDING PARAMETERS:
Bioscience, Computer Science, Engineering
Animal Facility + Computation Core
4 Education / Outreach Components
Town Center Model
Fit-out for 2 - 3 years
COST PARAMETERS:
$120M
$400 / SF
$30M
$150M

The project was submitted for approval to the University of Wisconsin Board of Regents and the State of Wisconsin Building Commission in April 2006. At that time, the WID | MIR project size was set at 300,000 gross square feet with a project budget of $150 million, excluding land acquisition, with a construction budget of $120 million.

The accompanying cost model reflects the $120/$150 million WID | MIR budget. It is too early in the project to determine the sufficiency of the budget. However, there are challenges in achieving this budget. For example, the WID | MIR construction budget/square foot is less than all of the respective budgets for the benchmarked interdisciplinary research facilities. In addition, the original projected completion date of December 2009 is actually the fall of 2010. The cost model will be updated continuously during the Project Formation stage to more fully understand these issues and to finalize the project budget for the WARF Board's approval.

The following key assumptions are built into the model,

1. **Research and Research Support** Assumes 50% fit-out for first 2 years
2. **Animal Facility** Assumes 50% fit-out for first 2 years
3. **Retail Space** Assumes shell space only; fit-out cost part of lease agreement with operators
4. **Contingency: 15%** Shared pool for design and construction
5. **Escalation: 9 - 10/5%** Figure 6 - 7% per year for 18 months
6. **Site Costs: 8%** Includes site development and utilities
7. **Project Costs: 25%** Includes A/E fees, furniture and equipment, data / telecom / multi media, testing and moving costs, and WARF project contingency

Space Type	NSF	N/G Efficiency	GSF	Cost / SF	Total
Research Spaces (Net Space + Circulation / Core Allowance					
a. WID Research: 20 Faculty	51,250	70%	73,200	$300 / SF	$21.96M
b. MIR Research: 20 Faculty	52,750	70%	73,200	$300 / SF	$21.96M
c. Core Facilities: Animal + Bioinformatics	16,500	60%	27,500	$400 / SF	$11.0M
d. Administration	2,900	65%	4,500	$200 / SF	$.9M
Non Research Space (Net Space + Circulation / Core Allowance)					
a. Education / Outreach	22,500	60%	37,500	$275 / SF	$10.31M
b. Entrepreneurial Clinic	1,600	65%	2,500	$200 / SF	4.5M
c. Socialization Commons	10,000	80%	125,000	$300 / SF	$3.75M
d. Retail Space	7,500	80%	9,400	$150 / SF	$1.41M
e. Building Operations: Loading, etc.	7,000	80%	8,800	$150 / SF	$1.32M
f. Mechanical / Electrical	12-15% x GSF		30-37,500	$150 / SF	$4.5 - 5.6M
Subtotal	**172,000 NSF**	**Avg. 80%**	**279-286,500**	**$458 / SF**	**$77.61-78.71M**
Sitework + Contingency + Escalation				**Subtotal**	**$38.8 - 42.2M**
a. Sitework and Utilities	Use 8% x Building Cost as First Test				$6.4M
b. Contingency	Design / Construction = 15%				$12.6-12.8M
c. Escalation	6-7% Per Year x 1.5 Years = 9 - 10.5%				$15.2-18.4M
Total Construction Cost					**$105.3-108.2M**
Preserve for Future Fitout					**15.0M**
Project Costs				**Subtotal**	**$30.0M**
Total Project Cost					**$150 - 153M**

NEXT PHASE: PROJECT FORMATION
APRIL - SEPTEMBER 2007

HOW FORMATION WILL WORK

The accompanying work plan outlines the steps down the Project Formation road. As depicted, three parallel and interrelated activities focus on workshops at three week intervals.

Track 1: Site and Building Design

Track 2: Program and Interior Character Development

Track 3: Systems, Sustainability and Cost Modeling

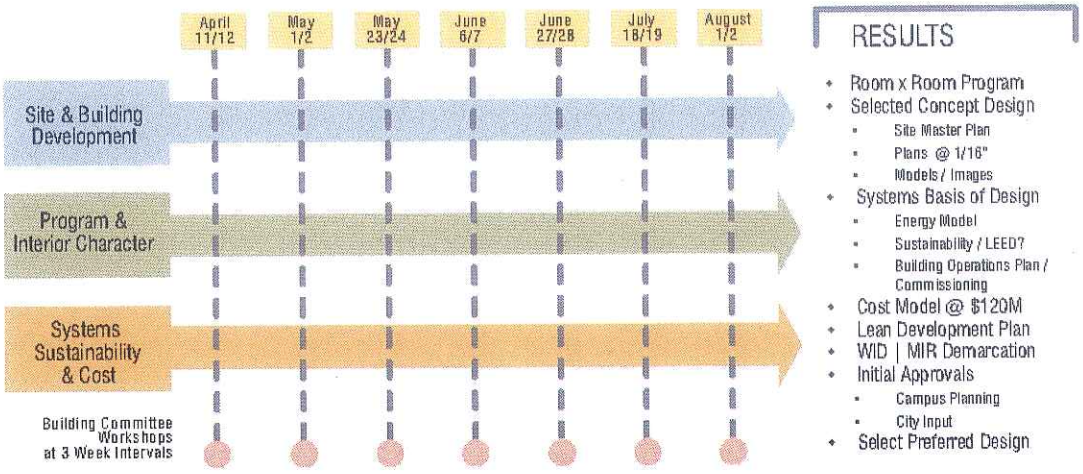
The process started formally on April 11, 2007. A typical workshop lasts two days with the project team members meeting separately and together during the first day. The morning of the second day involves preparation for the meeting with the Building Committee later that day. Following that meeting, the project team critiques the results and sets the stage for the next workshop. Weekly progress meetings (direct and indirect) with the project teams keep everyone informed.

Several important additional activities are going on in parallel with the project team meetings and Building Committee meetings.

a. **Periodic Reports to the WARF Board**

Decisions regarding the design and construction of the Institutes resides with the Managing Director of WARF as developer of the project.

WARF Board review and input will be sought on critical path issues most especially as they affect quality and cost. Project milestones will also be presented to the Board at its regularly scheduled 2007 May and September meetings. A mid-point report will be forwarded in July 2007.



THE PROJECT FORMATION PROCESS

b. **Meetings with the Design Review Board (DRB)**

Dan Okoli, the University Architect, has organized a Design Review Board to work with the team to insure campus design quality. Three meetings with the DRB are anticipated during this phase.

- Kickoff Meeting: Setting the Stage (April 4)
- Conceptual Alternatives Phase: Critique of Options (May 23 / 24)
- Development of Preferred Option: Critique (July 18 / 19)

c. **Meetings with the City Officials / Plan Review and Approval**

The City of Madison is interested in shaping the project toward civic ends. In order for the site enabling work to take place in the November 2007 time frame progress on many fronts will need to be made. To date, an informal process has been initiated with formal submissions expected in May, July, and September time frames. The exact dates and nature of these submissions is still forming but the process is well understood by the team.

Suffice to say, the scale and complexity of the WID | MIR project is reflected in the process shown here. Orchestrating decision making to allow a successful formation and design to emerge is the key. In that spirit, the design team will work closely with George Austin and Carl Gulbrandsen to anticipate the key decisions well in advance of the actual decision. The goal is to provide very clear design team leadership by Bill Gustafson and Del Wilson to keep everyone informed and productive. The concept program stage has reinforced the unique vision of WID | MIR and its goals and criteria. The end product of project formation has been defined and is reflected in the summary above.



THE WORKSHOP PROCESS: JANUARY THROUGH MARCH 2007

ADDENDUM: HOW WE GOT HERE - 2006/2007

The process of planning the Wisconsin Institutes for Discovery / The Morgridge Institute for Research places a premium on engaging UW faculty and staff as well as mining the extraordinary and diverse intelligence they offer.

Engagement of the campus community started immediately after the April 2006 announcement of the intent to develop and launch WID | MIR. Initially, all-campus seminars were held outlining the May 2006 announcement of the $3 million Discovery Seed Grant Program. Approximately 240 faculty and staff participated.

FOCUS GROUPS ON INTERDISCIPLINARY RESEARCH

Between June - December 2006, a series of eight focused discussions were conducted with UW faculty and staff to explore opportunities and challenges of performing interdisciplinary research on the UW campus. Invited participants were from all four divisions. A total of 70 people attending. Several members of the Wisconsin Institutes for Discovery Steering Committee participated in the discussions as Steering Committee member Rick Moss, Professor and Chair of the Department of Physiology, facilitated.

The groups explored four key questions that focused on the current and future opportunities and barriers for interdisciplinary research on the UW campus; how to engage people in a "virtual" Institute before the buildings are in place and a question on how to best accomplish community engagement with the Institutes.

On January 18, 2007 a group of 14 industry representatives convened to discuss partnership opportunities that could foster collaborative research efforts within WID | MIR.

FOCUS GROUPS ON CORE ELEMENTS OF THE INSTITUTES

In January / February 2007, four focused discussions were conducted with UW faculty and staff to explore the need to include three core service areas in the WID | MIR: Vivarium / Animal Spaces, Informatics Support and Mass Spectrometry. These sessions were facilitated by WID | MIR Building Committee members Rick Moss, Professor and Chair of the Department of Physiology and Greg Moses, Professor of Engineering Physics. A total of 38 faculty and staff participated in these discussions. (see participants on page 41 - 42)

BUILDING COMMITTEE AND WORKSHOPS CONVENED TO INFORM THE DESIGN PROCESS

On December 5 and 6, 2006, the WID | MIR Building Committee convened for the first time to meet with the Project Core Team to learn about the design process.

Between January and March of 2007, four workshops, each consisting of four two-hour sessions, were scheduled to explore a variety of areas specific to the building development. Forty-two participants were selected based on their expertise to provide guidance in one of four areas:

- **Research Collaboration in the Knowledge Era**
  The Future in Interdisciplinary Research
- **Leveraging the Public/Private Partnership**
  Commercialization / Technology Transfer
- **The Wisconsin Idea**
  Education and Outreach
- **The Town Center** (Discovery at the Crossroads)
  Social / Interaction Spaces

The information generated from these sessions informed the WID | MIR Building Design Team on what the campus and greater community at-large considered key aspects of the future institutes.

The initial activities focused on developing a Conceptual Building Program Plan. This Plan is a key, transitional document providing a bridge between the Vision and Goals for the Institutes and a practical framework to the detailed program and design phases to follow.

THE PLAN

- Develops the design strategies by which the vision / missions of the institutes will be manifested in physical form
- Develops an overview of the fundamental science(s) and core services, including their respective space proportions
- Develops similar overviews and proportions for the Education and Outreach component and the social / interaction spaces

This campus input and engagement will continue into Phase II of the design process that follows.

For the Project Formation a Building Committee will carry on this work. This committee will meet every three weeks between April and September 2007 and work closely with the design team reviewing plans and issues.

FOCUS GROUP PARTICIPANTS

NATURE OF INTERDISCIPLINARY RESEARCH COLLABORATION

SESSION #1: JUNE 19, 2006

Linda Hogle, Associate Professor (Medical History and Bioethics, Anthropology)
Clive Svendsen, Professor (Anatomy, Waisman Center)
Timothy Gomez, Assistant Professor (Anatomy)
Nigel Boston, Professor (Mathematics, Electrical and Computer Engineering)
Izabela Szlufarska, Assistant Professor (Material Science and Engineering)
Gerard Marriott, Professor (Physiology)

SESSION #2: JUNE 29, 2006

Ben Liblit, Assistant Professor (Computer Sciences)
Grace Wahba, Professor (Statistics and Biostatistics and Medical Informatics)
Jeremy Foltz, Associate Professor (Agricultural and Applied Economics)
Jim Rawlings, Professor (Chemical and Biological Engineering)
Julie Mitchell, Assistant Professor (Mathematics and Biochemistry)
Michael Ferris, Professor (Computer Sciences)
Tracey Holloway, Assistant Professor (Gaylord Nelson Institute for Environmental Studies)
William Murphy, Assistant Professor (Biomedical Engineering and Pharmacology)

SESSION #3: JULY 10, 2006

Michael Sussman, Professor (Biotechnology Center and Biochemistry)
Rob Radwin, Professor and Chair (Biomedical Engineering)
Paul Nealey, Professor (Chemical and Biological Engineering)
Mark Anderson, Associate Scientist (Engineering Physics and Engineering Experiment Station)
Meg Gaines, Clinical Professor (Law School and UW Comprehensive Cancer Center)
Tom Zinnen, Outreach Program Manager (Biotechnology Center)
Meredith Ross, Clinical Professor (Law School)
Lewis Gilbert, Associate Director (Gaylord Nelson Institute for Environmental Studies)
Kathryn Caggiano, Assistant Professor (School of Business and Industrial Engineering)
James Hurley, Associate Scientist (Engineering Experiment Station and Aquatic Sciences Center)
Larry Casper, Assistant Dean (College of Engineering)

SESSION #4: OCTOBER 10, 2007

Brad Barham, Professor (Agricultural and Applied Economics)
Graham Wilson, Professor (Political Science)
Robert Gervey, Assistant Professor (Rehabilitation Psychology & Special Education)
Joan Fujimura, Professor (Sociology, Medical History and Bioethics)
Margaret Meyer, Assistant Scientist (Wisconsin Center for Education Research)

SESSION #5: NOVEMBER 6, 2006

Charles A. Mistretta, Professor (Medical Physics, Radiology)
Ed Chapman, Professor (Physiology)
Igor Slukvin, Assistant Professor (Pathology & Laboratory Medicine)
Jack Longley, Professor (Dermatology)
Justin Williams, Assistant Professor (Biomedical Engineering)
Marcin Filutowicz, Professor (Bacteriology)
Sean Palecek, Associate Professor (Chemical Engineering, Biomedical Engineering)
Ben Shen, Professor (Pharmacy)
Tom Turng, Associate Professor (Mechanical Engineering, Industrial Engineering)
David Wood, Professor (Computer Sciences, Electrical & Computer Engineering)

SESSION #6: NOVEMBER 27, 2006

Molly Carnes, MD, Professor (Medicine, Industrial Engineering)
Maury Cauter, Director (Office of Quality Improvement)
Laurie Beth Clark, Vice Provost for Faculty and Staff, Professor (Art)
Bill Cronon, Professor (Nelson Institute for Environmental Studies, History)
Leigh Payne, Professor (Political Science)
Rob Radwin, Professor and Chair (Biomedical Engineering)
Virginia Sapiro, Professor (Political Science)
Guri Sohi, Professor and Chair (Computer Sciences)
Frances Westley, Professor and Director (Nelson Institute For Environmental Studies)
George Wilding, MD, Professor, (Medicine, UW Comprehensive Cancer Center)

SESSION #7: NOVEMBER 28, 2006

Gail Robertson, Associate Professor (Physiology)
Josh Coon, Assistant Professor (Chemistry, Biomolecular Chemistry)
Mark Etzel, Professor (Food Science)
Shannon Stahl, Associate Professor (Chemistry)
Daniel Kleinman, Professor (Rural Sociology)
F Michael Hoffmann, Professor (Oncology, Genetics)

SESSION #8: DECEMBER 11, 2006

Teri Balser, Assistant Professor (Soil Science)
William Bement, Professor (Zoology, Molecular Biology)
Patti Brennan, Professor (School of Nursing, Industrial Engineering)
Dick Burgess, Professor (Oncology)
Mason Carpenter, Associate Professor (School of Business)
Laurie Beth Clark, Vice Provost for Faculty and Staff, Professor (Art)
Maury Cotter, Director (Office of Quality Improvement)
Lewis Gilbert, Associate Director (Gaylord Nelson Institute for Environmental Studies)
Joan Fujimura, Professor (Sociology, Medical History and Bioethics)
Daniel Kleinman, Professor (Rural Sociology)
Nancy Mathews, Associate Professor (Gaylord Nelson Institute for Environmental Studies)
Anne Miner, Professor (School of Business, Women's Studies)
Mike Sussman, Professor (Biochemistry, Biotechnology Center)
Barbara Wolfe, Professor and Chair (LaFollette School of Public Affairs, Population Health Sciences)

FOCUS GROUP: VIVARIUM

JANUARY 30, 2007

Craig Berridge, Professor (Psychology)
Mike Cox, Professor (Biochemistry)
Paul DeLuca, Associate Dean (School of Medicine and Public Health)
Norm Drinkwater, Professor and Chair (Oncology)
Mike Gould, Professor (Oncology, UW Comprehensive Cancer Center)
Pete Heaslett, Architect/Engineering Supervisor (Facilities Planning and Management)
Tim Kamp, Associate Professor (Medicine, Physiology)
Yoshi Kawaoka, Professor, (Pathobiological Sciences - School of Veterinary Medicine)
Judy Peterson, Researcher (Bacteriology)
Eric Sandgren, Associate Professor (Pathobiological Sciences - School of Veterinary Medicine)
Clive Svendsen, Professor (Anatomy)
Jim Southard, Professor (Surgery)

FOCUS GROUP: INFORMATICS

SESSION #1: JANUARY 30, 2007

Paul DeLuca, Associate Dean (School of Medicine and Public Health)
Miron Livny, Professor (Computer Sciences)
George Phillips, Professor (Biochemistry, Computer Sciences)
Edgar Spalding, Professor (Botany)
Wes Smith, Professor (Physics)

FOCUS GROUP: INFORMATICS

SESSION #2: JANUARY 31, 2007

Greg Moses, Professor (Engineering Physics) Moderator
Alan Attie, Professor (Biochemistry)
Dave DeMets, Professor and Chair (Biostatistics and Medical Informatics)
Rock Mackie, Professor (Medical Physics, Human Oncology)
Julie Mitchell, Assistant Professor (Mathematics, Biochemistry)
Michael Newton, Professor (Statistics, Biostatistics and Medical Informatics)
David Schwartz, Professor (Chemistry, Genetics)
Jude Shavlik, Professor (Computer Sciences, Biostatistics and Medical Informatics)
Guri Sohi, Professor and Chair (Computer Sciences)
John Markley, Professor, (Biochemistry)
Brian Yandell, Professor (Horticulture, Statistics)

FOCUS GROUP: MASS SPECTROMETRY / MOLECULAR CHARACTERIZATION

FEBRUARY 1, 2007

Sandra Austin Phillips, Senior Scientist (Biotechnology Center)
Robert Blick, Professor (Electrical and Computer Engineering, Physics)
Josh Coon, Assistant Professor (Chemistry, Biomolecular Chemistry)
Amy Harms, Associate Researcher (Biotechnology Center)
Donna Paulnock, Associate Dean for Biological Sciences – Graduate School
Cameron Scarlett, Assistant Scientist (Biotechnology Center)
Lloyd Smith, Professor (Chemistry)
Mike Sussman, Professor (Biochemistry, Biotechnology Center)
Martha Vestling, Senior Scientist (Chemistry)
Jeff Walker, Professor (Physiology)

INDUSTRY FOCUS GROUP

JANUARY 18, 2007

John Comerford, VP & General Counsel, WiCab, Inc.
Randy Dimond, Chief Technical Officer, Promega
Jeff French, Principal, Ballinger
Derek Hei, Technical Director, Waisman Clinical Biomanufacturing Facility
Barbara Israel, CEO, Platypus Technologies
Lisa Johnson, Director of Business Development, Novagen
Ralph Kauten, President, Quintessence Biosciences, Inc.
Dick Leazer, Retired, Tech Star
Andrew Lukowiak, Director of Product Development, Third Wave Technologies
Paul Reckwerdt, Founder & President, Tomotherapy, Inc.
Terry Sivesind, President, Metabiologics
Michael Skindrud, Attorney, LaFollette, Godfrey & Kahn
Trevor Twose, Founder & CEO, Mithridion
Paul Wrycha, Fund Legal Counsel, Kegonsa Capital Partners