7. Appendices
Stakeholder Interviews
The summary following constitutes the writer’s understanding of basic matters discussed and the conclusions reached. Participants are requested to review these matters and notify Cannon Design in writing within five (5) days of receipt of this Conference Report of any exceptions. In the absence of such notice, the content of this Conference Report will be considered accurate.

Following are key concepts addressed in regards to the AHC Interdisciplinary Committee’s current and future needs

1. Culture
   - Biomedical library is a neutral hub type space focused on collaboration and facilitation of research and group learning support. There is still a need for quiet space as well as group space within the library.
   - Liaisons from the library work with each department and college to become integrated in the education environment evidenced based practice. Librarians also shadow on rounds out in the field.
   - Four current library initiatives: Content Service and Creation, Data Management, E-Learning, and ID research
   - Library is trying to facilitate cross-discipline learning through research presentations
   - Concern was expressed that the grand challenges presented in the new University vision should have included the healthcare delivery system.

2. Teaching and Research
   - An increase in public-private partnerships would help the university financially. Currently the AHC does not fully embrace the opportunities in leveraging these partnerships. Connections to foundations could aid in better aligning education with the healthcare system
   - ‘Academic Tourism’ is the still the current pedagogical approach for students. Clinical rotations consist of students in 1-month rotations. The AHC is rethinking this practice, changing it to send students in teams together for a longer rotation to more closely mimic the healthcare delivery system.
• There is a current redesign of the curriculum to connect the 19 departments together

• Five research corridors exist within the AHC: Cancer, Cardiovascular, Neurological, Infectious Disease and Diabetes

• Currently faculty have the freedom to choose their own research interest and paths, so long as he or she can find the funding to pay for it.

• There is a current evolution from small-scale labs to large interdisciplinary environments. Current labs are not configured appropriately, are old, and are not up to current codes, which make it difficult to reassign space.

• There is a desire to create environments where informatics is engrained in the program. It was stated that informatics is at the epicenter of biomedical research.

3. Clinical Trials

• Currently clinical trials are not a large area, but it is an opportunity for future growth

4. Community Engagement

• Current shortage of pharmacists across the state, particularly in rural and ‘at-risk’ communities

• Funding for contemporary research

Next step:

END.
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Following are key concepts addressed in regards to the Medical School’s current and future needs:

1. Culture

- The future is to integrate not only all of the AHC schools on campus, but also to integrate with the health system, including Fairview owned space. What happens to the health system has a direct impact on the AHC.

- The number one patient satisfaction complaint is the lack of private rooms in the hospital – this will need to be addressed in the future with a new hospital or significant renovation. Land availability for a replacement hospital is an issue.

- An integrated health education center is a top priority for future needs.

- Educational needs are changing – there is a shortage of small group rooms and the large auditorium is not used as frequently as before.

- There is not currently an officing policy within the school, or for those who have hospital and teaching appointments. Going back and forth will be more difficult for clinicians once the ACC building opens.

2. Research/ Clinical Trials

- Top research priority is to build a translational research clinic facility – the makeup of this facility will need to be studied further once a mix of types of trials is determined (inpatient vs. outpatient, quick epidemiology studies vs. longer stays, etc.)

- There is a current shortage of patients for the clinical trials. Access to the patient population and then access for the patients to 717 Delaware is an issue.
Animal space seems sufficient for future needs

Need a plan for open lab space if the trend continues and lab needs decrease.

Video conferencing capabilities should be incorporated into research areas to consult with those who are in the field.

Clinical research is becoming increasingly digital and UM has kept up with the Institute for Health Informatics. This does not need to be where the investigators are, however, and could be in any location.

3. Community Engagement

Coordination with Fairview is important to the success of both organizations.

Next step:

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Following are key concepts addressed in regards to the School of Nursing’s current and future needs

1. Culture
   - Considering expanding the Masters Pre-licensure program to follow a transition in the field to more Masters level positions. Currently the school turns away 6 applicants for every 1 accepted into the masters programs
   - Online education is present in all programs, but this could be expanded upon
   - Large group of students in executive programs, which are taught Thursday night through Saturday. This has created a facility problem in terms of space, and open amenities (coffee shops, etc.) to make the students feel welcome on campus.
   - Video conferencing is needed in conference rooms, as well as small, interactive classrooms for connectivity to Rochester. There is a tightness on the type and the overall quantity/ available of the current conference rooms.
   - The school needs to grow its student support administrative areas. Student services has not grown at the same rate as student enrollment.
   - Gathering space for students is needed that is safe and friendly, in a student-centric environment.
   - Desperate for space for global visitors; typically have 3-4 global visitors per semester.
   - Being on track with academia is not the gold standard for the school – want to be on track with the profession and able to turn on the 5-year cycle. The School would like to be a hub for innovation.

2. Research/ Clinical Trials
• Research needs to be on campus. The School of Nursing’s ranking has gone from 28 to 18 in 8 years, but is currently suffocating because of space constraints.

• Access is needed to more flexible research space that would allow for huge 10-15 person teams for 3 years. Studies have a wide variety of specialty needs (kitchens, physio space, etc.) with teams that go out into the community and then come back on campus. The space needs to be flexible so that the school does not have to rebuild the space with each new research endeavor.

• Physio lab will grow in the upcoming years. Has a 50-60% utilization without promoting it currently and is staffed with research assistants.

• Opportunities for big data are recognized; the infrastructure is sound and being replicated throughout the US but the physical space needs to be in place for this to grow

• The clinical trials management systems has grown in the past 3 years, is now 50% implemented – key is now to harness the data

• The school partners with corporate partners, medical device startups are happening – they have made this work but would like a more open, flexible space for non-traditional research teams and incubators.

3. Community Engagement

• The school is growing their own clinics. The first nurse run clinic will open in January and they plan to engage pharm, medicine, and dentistry. Brooks has alluded to nursing growing as fast as possible in this arena with the potential to open another clinic in mid-spring 2015. These clinics are located in Downtown Minneapolis.

• The midwife program is one of the top in the country – this will slide, however, if the birth center does not open.

Next step:

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Following are key concepts addressed in regards to the College of Pharmacy’s current and future needs

1. Culture

- The school has shifted it’s focused to mirror the change in the profession from drug to patient focus
- Duluth campus is dependent on teleconference capabilities to Minneapolis campus
- Faculty has embraced interprofessional education, although this is not currently taught fully that it could be. Interdisciplinary research is embraced, but the logistics of faculty in multiple buildings and campuses has caused duplication of administrative work and instrumentation. Preference is to not be siloed within the department and school, but the inefficiencies of duplication can lead to the silos.
- There is a current connectivity issue within the school. IT infrastructure has been expanded to allow for faulty to talk across campus
- Faculty have a desire to be near the students and allow for easy access to students both in their offices and around the school. There is a desire for a natural gathering space for both students and faculty with space for students to be out of the lab and have desk space. Current space in Weaver-Densford is inefficient.
- ‘Creative tension’ between the desire and benefits of shared spaces and the return of investment on the space
- 80% of students graduate and go into the industry, but the space is not set up like industry. This would be a culture shift for faculty. The school recognized that ITDD should be set up like an industry since the leaders come from the industry environment and the department acts like an industry.
2. Research

- Unlike the rest of the AHC, research space is highly dependent on the use of hoods. Current hood space is located in 717 Delaware and Weaver-Densford Hall. Currently density of hooded space is not sufficient to attract new faculty and students.

- Nano technology, drug delivery, drug technology, formulation, and crystallization research all require hoods.

- Some research groups are interdisciplinary based around a common topic such as cancer or biomedical.

- Department is currently spread across four buildings – ideal situation would be to be in one building. There is national competition for the best faculty, and the current outdated space does not functionally work for research needs.

- The two largest research groups are medicinal chemistry and Institute for Therapeutics Discovery & Development (ITDD) research, but these groups need additional hooded space. Both Informatics and Pharmagenetics are edging into the clinical areas, both requiring big data and big lab space. Both experiments and clinical pharmacology have a translational therapy group component (pharmacogenetics, pharmametrics, clinical trial analysis and human clinical trials) that will require space as well.

- The “core lab” drug analysis lab component for blood draw contracts with Fairview.

- Movement towards diagnosis, side effective, optimization of therapy, and outcomes of therapy – all of which are math intensive studies.

- Faculty choose Minnesota because of the collaborative research promotion, and the large size.

3. Clinical Trials

- Currently clinical trials are not a large area, but it is an opportunity for future growth.

- Current arrangement is to license out clinical trials to large companies, such as Allaysis.

- Office of Technology Transfer (OTC) handled all licensing across all disciplines.

- Desire is to keep trials in house through phase I, then transfer to another UM group to do the next phase – each subsequent phase allows the trial to be worth more to the university. Goal is to work through the steps to get the trial through the ‘valley of death’ within the university.

- Greatest partners in clinical trials are currently the med school and physicians with animal models, then chemistry and biology. The school recognized that they could work more with dentistry as well. The Associate Dean of Research is interested in daylong research exchanges between schools. There is a new relationship with vet med in partnership for five seed grants. External partners include Mayo, ITDD relationships with the industry, and industry internships for students.
• Institute for Health Informatics (IHI) has connections across math and science for super computer access for drug design. School is comfortable with sharing this infrastructure, but funding needs to come to contribute to the engagement

4. Community Engagement

• Current shortage of pharmacists across the state, particularly in rural and ‘at-risk’ communities

• Attempt to reach out to these areas in hope that students would return – problem is that all training is done in the city settings. Expansion of pharmacy program to Duluth helped and can now have 35-40 students return to at risk areas. There is a space problem in Duluth, however, and the faculty does not want to be disconnected from colleagues in Minneapolis. There is a state political issue with expansion at the Duluth campus, however.

• Global exchanges with China, India, the Middle East, and Africa are becoming more prevalent, as well as rotations with European schools. Funding for these problems is an issue, as well as housing for individuals when they visit.

• Increase in utilization of the online program for lay public and South Dakota students for workforce retraining

Next step:

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Following are key concepts addressed in regards to the School of Public Health’s current and future needs

1. Culture
   - The school has a long standing tradition at the University
   - SPH is aligned with both SPH 2030 and the grand challenges – these are moving in parallel
   - The AHC is missing community space where people run into others and allows serendipitous ideas to develop. Common space is needed for both faculty and students
   - Students are starting to become more collaborative
   - SPH invested heavily in e-learning, but this could be improved
   - Lacking a space for the executive programs; connections are needed with the MHA students
   - Would like a ‘work smarter environment’ – SPH does not have many high tech needs, although some do work with others in different schools. People need a place to work that is quiet, but they miss the space where you can meet (larger, open spaces).
   - Students also need space for interaction – they are currently given a cubicle near where their faculty are, but it is rare that different types of students actually will get together to work. This is a complaint of the students.
   - A few years ago, a network analysis was completed of who works with who. SPH is extremely tied to every college on campus.

2. Research
Biomedical Discovery District (BDD) lacks a population and community health lab to do the Meta analysis. This was a vision of the SPH, but it never got built.

NIH is no longer willing to pay for the ‘gold standard’ trial.

Incubation ideas have been discussed and could be expanded upon; process testing with a machine to sell the service (like 3M has).

Grant money has significantly decreased – CDC was funding public health after 9/11, but these funds are no longer available.

Currently run an old-fashioned biostatics lab, but software can now run on personal computers and iPads.

3. Clinical Trials

SPH runs the Global Clinical Trials Center, which is involved in the world’s largest clinical trials regarding AIDS drugs.

NIH is no longer willing to pay for the ‘gold standard’ clinical trial – the concept of big data is leading to more nimble trials.

Lacking a clinical translational center which includes community and population health – could be a virtual data area with simulation.

4. Community Engagement

SPH has 200 adjunct faculty, many who are primarily appoints elsewhere or have day jobs in the community.

Programs to help train the workforce in hazmat training and public readiness; funds are no longer available and discussions are ongoing as to how to continue to fund this operation.

Next step:

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Following are key concepts addressed in regards to the College of Vet Med’s current and future needs:

1. Culture
   - 40% of the budget is revenue generated by the hospital income, vet diagnostic lab, and food safety through contract work. These units operate like businesses out of the College’s budget.
   - Lecture rooms are still used, but an active learning classroom was built for the 1st year students. There is a movement toward more active learning and self-study within the new curriculum that is currently being introduced to improve student engagement and work life balance.
   - Profession as a whole is worried about oversupply; the school is capped by the faculty size at 102 students currently, and is capped politically for the next few years by the profession.
   - Students need to be trained on primary care and wellness as a growth strategy – this matches the national need.
   - 60-80% of students work in primary care after graduation, but they train in a specialty hospital.
   - The College is looking to grow its telepathology in the diagnostic lab around the world in China and Africa. This is a major advantage for international visiting scholars, but they need a place to house people.

2. Research/ Clinical Trials
   - Three main areas of focus: comparative medicine (animal models for study of human disease, clinical trials done at the teaching hospital in the clinical investigation center), livestock health and food safety, and population systems
Renovations to existing facilities with new faculty hires has been expensive, as many buildings do not meet current codes. Some research requires more flexible space with shared equipment, as well as room for grad/post-doc students and convening space.

3. Community Engagement

- Until 5 years ago the College was the only specialty center in the area – the market is now more competitive and UM has lost 10% of its business to nearby specialty hospitals.

- A wellness plan was recently created for employees of the University for all basic care, vaccines, exams and emergency exams for their pets. This has stabilized the practice.

Next step:

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Following are key concepts addressed in regards to the School of Dentistry’s current and future needs

1. Culture

- Practice has not changed significantly over the past 50 years, but there is a movement towards more community based practice and salivary diagnostics.

- The school is currently undergoing a strategic planning initiative.

- There are a few upcoming changes to the curriculum, and more could come as the result of a new Academic Dean hire. The desire is to have a more integrated curriculum that starts clinical at an earlier time with more team-based, patient-based settings rather than a siloed approach.

- School currently accepts 1/10 applicants; students who come are of a high caliber.

- Software is evolving to the point where it is expected that 20 years from now students will no be working on manikins.

- The school has 150-200 adjunct facility who work in the community and volunteer their time, working a half day a month to 3 days/week.

- Faculty do not want to grow enrollment currently, and some want to cut enrollment. Financially it would be good for the school to grow, but they do not currently have the faculty capacity to do so.

2. Research/ Clinical Trials

- Clinical research occurs currently in three to four areas of focus.
Public health research has been expanding with recent hires and a greater availability of money. There is not currently a shortage of research opportunities, but there is a shortage of individuals to do the research.

HERSA foundation is the biggest source of grant expenditure in terms of quantity; NIH is the largest in terms of dollars.

3. Community Engagement

- Patients have a difficult time finding the dental clinic on campus – once they reach the building the signage is unclear as to where they should go.
- Current clinic space is sufficient in size but there is a utilization problem.
- The school runs a few community clinics to allow for students to gain experience and to reach challenging populations, but the school loses money on most of these clinics due to low reimbursements.

4. Office Environment

- Touchdown space is needed for the adjunct faculty – they need a place to put their coat, their coffee, and to socialize. There does not need to be ownership of these touchdown spaces.
- Officing has been one strategy to attract faculty who would make more money in the private sector.
- There is a desire for face-to-face contact.
- Flexible space with robust technology that could help with the concept of ‘home’ would be welcomed.
- Seminar space is needed within the clinics for teaching purposes – a mixture of spaces (office, clinic, touchdown, and seminar space) is needed for privacy issues.

Next step:

END.
Meeting Presentations
## Agenda – Kick Off Meeting

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<th>Introduction</th>
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<td>• Study scope, schedule and goals</td>
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<td>• Introduction to Cannon Design</td>
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<td>Exercise</td>
<td>Who we are</td>
<td>1:20</td>
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<td></td>
<td>• Case studies</td>
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<tr>
<td>Break out</td>
<td>1. Peer and aspirational institutions</td>
<td>1:30</td>
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<td></td>
<td>2. Our communities</td>
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<td>3. Academic themes and focus</td>
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<td>4. Local impact / global focus</td>
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<td>5. Perception and reputation</td>
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<tr>
<td>Report</td>
<td>• 5 minutes each group</td>
<td>1.50</td>
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<td></td>
<td>• Group discussion</td>
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<td>Exercise</td>
<td>SWOT Analysis</td>
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<tr>
<td>Wrap Up</td>
<td>What we heard</td>
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# Agenda – Visioning

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<tbody>
<tr>
<td><strong>Exercise</strong></td>
<td>What we do</td>
<td>How we do it</td>
<td>3:35</td>
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<tr>
<td></td>
<td>• Case studies</td>
<td>• Case studies</td>
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<td></td>
<td>2. Technology transfer</td>
<td>5. Workplace strategies</td>
<td></td>
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<tr>
<td><strong>Report</strong></td>
<td>Group discussion</td>
<td>5 minutes / group</td>
<td>4:05</td>
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<tr>
<td><strong>Exercise</strong></td>
<td>Initiative Prioritization</td>
<td></td>
<td>4.40</td>
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<tr>
<td><strong>Wrap Up</strong></td>
<td>What we heard</td>
<td></td>
<td>4:50</td>
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Academic Strategies Cannon Design consultancy

Maximizing Space Utilization
Measuring, Allocating and Incentivizing Efficient Use of Facilities

Research In Practice Cannon Design
Key Performance Indicators: Efficiency & Productivity
University at Buffalo, Clinical Translational Research Center

Creating a Balance between Research and Teaching Activity among Faculty at Research Universities

RESEARCH IN PRACTICE Cannon Design
INITIAL FINDINGS: Collaboration and Productivity in Research Laboratories
Washington University School of Medicine, St. Louis, Missouri
We are doctors, educators, futurists, economists, urbanists, business specialists, scientists, architects, engineers and designers. Integrated to solve the greatest challenges of our clients and society.
AHC master plan project scope and goals

1. Create a 10 year plan for improving the quality of space and predicting right sizing of the main programmatic drivers in academic medicine – clinical space, educational space, research space and administrative support.
2. Identify programmatic priorities that will increase utilization of retainable spaces while improving connectivity between mission related programs.
3. Work towards a reduction in occupied space by 20% including the elimination of obsolete facilities.
4. Embed and integrate the Academic Health Center district within the University of Minnesota campus.

How do we get there?
UofM Strategic plan

Institutional transformation
Interdisciplinary solutions
- Health
- Food Security
- Industry
- Environment

An exceptional University where grand challenges are addressed

Support excellence, and with intention, reject complacency

Recruit, retain, and promote field shaping researchers and teachers

A culture of engagement, capitalizing on our unique location

Preeminent in solving the grand challenges of a diverse and changing world

Streamline processes
Align with Vision
- Time
- Money
- Strategy
- Communication

Culture of innovation and transformation
- scholarship
- Incentives
- Awards
- Reviews

Tomorrow’s Leaders
- Place based
- Service focused
- Real life
- Research
- Experimentation

Dynamic community partnerships and impact

State - Nation - World
Process

Current State

Synchronize

Future State

Vision + Mission Priorities

Organization + Operations + Facilities

Point of Departure → Point of Arrival

2025

Mnnesota
Study Team

Education and Research
Mark Whiteley
Jill Kurth

Physical Assets
Randy Guillott
Joe Cassata

Campus Planning
Nic Pryor

Office / Workplace
David Craig
Jocelyn Stroupe

Cost
Joe Cohen
Linda McCracken
Hunt

Project Manager
Mike Yoshimura

Principal
Mike Pukszta

[Minnesota University Logo]
Exercise I.
Who we are
1:20 – 2:30
Aspire to be a **community focused**, public university with a deep sense of **responsibility, history and culture**.

The **comprehensive, research focus** of the AHC is unique and allows it to address a wide range of complex issues from **rural health disparities to complex, interdisciplinary acute conditions**.

The AHC needs to pursue more **interprofessional, collaborative strategies** to remain **globally connected** and continue recruiting the best talent.
Peer and aspirational institutions
Sources of Funding

NIH

$155

NSF

Health and Human Services
DOA
DOE
DOEd
Other Federal
Homeland Security

Business and Industry

Associations
Foundations

$155

State of Minnesota

$50

$518
Research income - % change on previous year

-5% pa
Enrollment

Veterinary
Public Health
Pharmacy
Nursing
Medicine
Dentistry
Our communities are diverse and engage all demographics. While we are deeply rooted in Minnesota our students, faculty and citizens are representative of national & international communities.

We want to provide our communities with cutting edge research, innovative patient treatment and quality workforce development.

We would like reliable, sustained support for our work and the resources necessary for continued innovation.
Our community

- Local
- National
- Global

Star Tribune health

Rare treatment for record 53 hours saves diver

Article by JEREMY OLSON, Star Tribune | Updated: September 27, 2014 - 5:58 AM

For Lake Superior diver forced to surface too quickly, HCMC doctors try protocol that they looked up in the U.S. Navy Diving Manual.

Terry Begnoche recovered in a hyperbaric chamber at HCMC on Friday from a nearly fatal diving accident on Lake Superior.

Photo: RENEE JONES SCHNEIDER | Star Tribune photo galleries

Gene therapy trials
Restoring confidence

North Pacific Ocean
Climate warming in deep water

Election polls
Margins of error
Our breadth of expertise and interdisciplinary research is integral to training \textit{2/3 of Minnesota’s healthcare workers}. In addition, our investments in infrastructure have given us a lead in the fields of \textit{big data, population health and public health}.

We need to focus on \textit{interdisciplinary modes of care} that integrate translational practices and make the AHC a \textit{clinical destination of choice}.

We will get there by \textit{strengthening our academic core, leveraging our data} and focusing on \textit{larger public/private partnerships}.
University of Texas Brownsville – academic themes and focus
University of Texas Brownsville
South Dakota State University – academic themes and focus
We create impact through by training the next generation of scientists and researchers that come from the most diverse backgrounds.

We do not see the world in terms of ‘local’ vs. ‘global.’ We create impact, scale it and then apply it wherever it is appropriate.

By viewing the local Minnesota community as a microcosm of the global population, we can impact global health by treating catastrophic disease locally.
National impact – Health disparities

- Illinois
- Minnesota

Values:
- 19
- 10
Local Impact — Health disparities

Mortality rates* by race and ethnicity, Twin Cities 7-county region

- American Indian: 814
- Black, U.S.-born: 704
- Southeast Asian, Foreign-born: 275
- White, non-Hispanic: 232
- Black, foreign-born: 225
- Hispanic: 213
- Asian, other: 132

*Age-standardized deaths per 100,000, among the population age 25-64 during the years 2005 to 2007.
We are known for the breadth of our top-notch, interdisciplinary and innovative research on one campus.

We are unique because of our unique relationships with our hospital partners, our biomedical partners and our urban context.

We want to be known for interdisciplinary, innovative research, teaching and practice. We want to be known as a place that rejects complacency and infuses excellence into all areas of our mission.
01. Leverage Our Place
02. Transform Society
03. Value Entrepreneurship
04. Conduct Use-Inspired Research
05. Enable Student Success
06. Fuse Intellectual Disciplines
07. Be Socially Embedded
08. Engage Globally
Perception and reputation – Ryerson University
Exercise II.

SWOT Analysis

2:30 – 2:50
**Strengths:**
- Breadth of expertise
- Diversity of disciplines
- Core talent

**Weaknesses:**
- Lack of focus
- Lack of flexibility
- Facilities

**Opportunities:**
- Inter-professional collaboration
- Big data & technology
- Philanthropy & new funding

**Threats:**
- Lack of funding
- Complacency
- Culture of silos
Exercise II.
What we do
how we do it
3:35 – 4:05
Despite spatial and organizational barriers, there is plenty of collaboration within the AHC primarily focused on pursuing research grant and undertaking patient care.
Collaborative volume – Loma Linda University
Collaborative density – Loma Linda University
Collaborative science

Team Science Toolkit
An interactive website to help you support, conduct and study team-based research.

2014 Science of Team Science Conference
The SciTS conference will be held on August 6-8, 2014 in Austin, TX. A forum for sharing knowledge to maximize the effectiveness of team-based research, it is relevant to a wide range of stakeholders including individuals using, managing, facilitating, or supporting team-based research. The abstract submission deadline for oral presentations and posters has been extended to April 17.

Discover what resources are available.
Search for a keyword
Search
OR
Browse by type of resource or goal
Browse

Contribute new resources to the Toolkit.
Share your knowledge by uploading tools and information about the practice or study of team science.

Connect to colleagues across disciplines.
Join expert discussions on the blog, add your name to the directory, or stay up-to-date on News and Events.

Resources
Tools
Measures
Bibliography

Connections
Recent Blog Posts
Editors' Picks
Listserv
Communication Materials

What Users Are Saying

Recently Added Resources
- Environmental Sociology, European Perspective...
- The Cross-scale interplay between social and...
- Robustness, vulnerability, and adaptive capac...

The Toolkit currently includes 1174 resources.
Although not embedded in our work, opportunities exist to collaborate outside the AHC in the commercialization/entrepreneurial sectors to realize translational potentials. Expanding clinical trials is also a big opportunity.
The new translation

No longer linear

3 dimensional

Partnership creation

Interdisciplinary

Defines your community

WHY – Market Based Approach

Best Positions GMU for Success

Updating The Model

Commercialize Education Innovation Translation Trial
The Biodesign Institute at ASU addresses today’s critical global challenges in healthcare, sustainability and security by developing solutions inspired from natural systems and translating those solutions into commercially viable products and clinical practices.
STRUCTURE: 11 Research Centers, 200 research projects
FACULTY: 65 faculty, Nobel Laureate, four National Academy members
FUNDING: $300 million
TECHNOLOGY TRANSFER: 50 annual invention disclosures / 12+ spin out companies
IMPACT: “Excellence in Economic Development Award” for innovations in state’s economic growth
Technology Transfer – Patents and start ups

- Medical School
- AHC Shared Units
- Dentistry
- Nursing
- Pharmacy
- Public Health
- Veterinary Medicine

Series 1
Series 2

2009 2010 2011 2012 2013 2014

Technology Transfer – Patents and start ups

- Medical School
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Series 1
Series 2

2009 2010 2011 2012 2013 2014
The AHC needs to follow through on the UM Strategic Vision and clearly articulate the pathways to success for everyone in the organization.
We attract, nurture and promote leaders who have a passion to undertake science to benefit and positively influence our communities. We mentor and train our students and our faculty to be responsible, skillful and creative pioneers. We demonstrate the highest level of pride and commitment in everything we do.

**Strategic Initiatives:**

- **New Students**
  - We will attract the best students with the character to further the vision of the Faculty of Science.

- **New Faculty**
  - We will recruit excellent faculty with the skills to forward the vision of the Faculty of Science.

- **Learning Responsibility**
  - We will encourage students to take active responsibility for the success of their learning journey.

- **Entrepreneurial Spirit**
  - We will develop the necessary structures and programs to develop student and faculty entrepreneurs.
today i will make

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The AHC needs to create flexible space for ‘clustering’ to happen while maintaining a sense of departmental identity. We also need to develop a methodology that promotes and evaluates the impact of translational research.
London Metropolitan University – Super Lab

- 280 workstations
- 12 teaching stations
- Interactive teaching
- Individual, group styles
- Voice, video
education
medicine
Competitive business – Innovation focused program

Kaleida Health
- ED bays, Hotel Rooms
- Critical Care Beds
- Operating rooms,
- Interventional labs
- 4 CT and 4 MRI's.

UB CTRC
- Incubator
- Wet / Dry Labs
- Classrooms
- Specialist Imaging
- Clinical Trials
- Bio-repository
- Animal Facility
New curriculum – program implications

- Flexibility in the learning journey
- Health science leaders and professionals
- Multiple career choices
- Inter-professional relationships

![Diagram showing various career paths and fields such as Community, Business, Government, Entrepreneurs, Educators, Managers, Professionals, Researchers, and Hospitals. The diagram is color-coded and shows the progression from Y1 to Y5+ with topics like Understanding and Hands On.](image-url)
The AHC workplace strategy should encourage openness, flexibility and cross-departmental mixing. Space ownership incentives need to evolve to help reclaim ‘dead space’ and to ‘right size’ programmatic functions.
The early modern office

**Larkin Building** 1904, Frank Lloyd Wright

**John Deere & Company** 1964, Eero Saarinen

Clerical factory

Machine for working
Focusing at work

People need to attend to what they’re doing to be productive, but the average knowledge worker is distracted every 6 to 15 minutes. Half the time they don’t return to what they were doing when the interruption has passed.*

Democratization of private space
Mental escape
Working with colleagues

Productivity also often depends on coordinating activities, knowledge sharing, and supporting colleagues.

Example: The amount of ad hoc face-to-face interactions in call centers is predicts the rate at which teams solved customer issues.¹

Building a network and sharing across it

Organizations expect the productivity of employees to rise over time, in part through help from colleagues.

Example: the density and diversity of knowledge networks in R&D teams is correlated with the number of publications and patents they earn.*

And proximity does matter when it comes to networks

Harvard medical researchers who collaborated produced findings that were cited more frequently. The number of citations (indicating importance) was compared to the proximity of co-authors. The closer the first and last authors, the more citations earned.

The Longwood campus of MGH. Height indicates average number of citations. Color reflects average author proximity.

Space designed around groups
Spaces designed to connect
Engagement and culture

Hawthorne Study

The power of belonging, social ties, and camaraderie:
“The working group as a whole actually determined the output of individual workers by reference to a standard that represented the group conception (rather than management's) of a fair day's work. This standard was rarely, if ever, in accord with the standards of the efficiency engineers.”
Elton Mayo, 1949
Social spaces

Just believing you are working with some increases mental stamina and task interest.
Connecting with leaders

Employees who say they have more supportive supervisors are 1.3 times as likely to stay with the organization and are 67 percent more engaged.
Work on the go
Hourly utilization of 2,500 offices and workstations in one R&D organization
Underutilization in medical offices
In order to thrive the AHC needs to encourage the ‘soft skills’ necessary to work in teams and to mentor tomorrow’s leaders. We need to strike a balance between collegial AHC success and individual recognition. We must remain motivated and avoid complacency.
Faculty Success

Student Success
• Mentoring
• Counseling

New Learning
• Content creation
• Technologies

Human Factors
• Leadership
• Career Planning

Technology Transfer
• Commercialization
• Marketing
• Finance
Student Success

Education & Training

About the Research Training Office

Mission Statement

To function as the physical and intellectual hub for education and training in clinical and translational research for the Buffalo Translational Consortium.

Three Overarching Goals

- Create an infrastructure to integrate the existing training programs
- Develop new programs and training modules that will be integrated with existing programs to train a diverse range of clinical and translational researchers
- Serve as a catalyst to bring together separate research groups into multidisciplinary teams
Interview Summaries
AHC Shared Space

- Aligning education with healthcare delivery
- Library hub for informatics, cross disciplinary learning and research - linking schools
- Challenge of scaling interdisciplinary learning and research
- Structure, incentives and rewards for team science
- Structure and pathways for translational research and technology transfer including public private partnerships
School of Dentistry

- New curriculum with clinical practice in earlier years
- Collaboration with dental hygiene and therapy students
- Team based, patient based settings is learning future
- Moving from procedural to diagnostic and medical research
- Desire to be close to med school and nursing for collaboration opportunities
- 150-200 adjunct faculty work for school (129 FT)
- Lack of school identity
- Increase patient population
- Increase efficiency and utilization of clinic space
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- Integrate with Fairview and UMP through shared space
- Future priority is a new health education center
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- Remain ahead of change in the profession
- Housing and other space for visiting scholars and international exchanges
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- Faculty attracted because of the collaborative research promotion and large size
- Outdated research space: technology and systems
- Clinical trials outsourced through OTC
- Need for connectivity to Duluth Campus
- Housing shortage for global exchanges
- Successful online programs
- 80% of graduates go into industry: no space set up like industry
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- Desire to work with the full AHC on research endeavors
- Spread across 9 buildings on campus
- Local to global community: social, economic, industry
- Grand challenges align with the School of Public Health’s 2030 visioning
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- Future in Big Data analysis and trials
- Students are becoming more collaborative in teaming projects across disciplines
• Curriculum changes to integrate earlier clinical exposure with more hands-on learning opportunities
• Professional pressure to cap program currently
• Business models are focused on clinic spaces – desire to grow without hurting local practitioners
• Majority of school is on St. Paul campus, collaboration with public health and dentistry requires faculty to travel
Summary and observations

Learning
• Inter-professional collaborative team based learning
• Aligning learning with practice by Integrating clinics

Engagement
• Nascent systems for interdisciplinary connectivity: internally, community, practitioners and industry
• Team based user friendly technology loaded space
• Housing and space for visitors
• What are the grand challenges for the AHC?

Research
• Clinical trials and technology transfer integrated with research
• How to incorporate big data analytics into learning and research

Identity
• School, team, individual
CANNONDESIGN
AHC Strategic Facilities Master Plan

AHC Collegiate Program
Onsite Group Work Session #1
October 14th 2014
<table>
<thead>
<tr>
<th>Exercise I</th>
<th>What we heard</th>
<th>9:10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kick off meeting: <em>Who We Are, SWOT Analysis</em></td>
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<td></td>
<td>Visioning <em>What We Do</em> Acad. Exec. Comm. <em>How We do it</em></td>
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<td>Interviews</td>
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<td></td>
<td>Discussion</td>
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<tr>
<td>Exercise II</td>
<td>What we have found out</td>
<td>10:00</td>
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<tr>
<td></td>
<td>Space Usage, School, Condition, Type</td>
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<td></td>
<td>Discussion</td>
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# Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>10:30</td>
<td><strong>Exercise III</strong> Workplace Strategies</td>
</tr>
<tr>
<td></td>
<td>1. Work styles, mobility and collaboration</td>
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<tr>
<td>11:15</td>
<td><strong>Exercise IV</strong> Designing Your Future</td>
</tr>
<tr>
<td></td>
<td>1. Case studies</td>
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<tr>
<td>11:30</td>
<td><strong>Break out</strong></td>
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<tr>
<td></td>
<td>1. Collegiate</td>
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<td></td>
<td>2. Collaborative</td>
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<td></td>
<td>3. Theme Based</td>
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<td></td>
<td>4. Solutions Focused</td>
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<tr>
<td>12:00</td>
<td><strong>Report</strong> Lunch and group discussion</td>
</tr>
<tr>
<td>12:30</td>
<td><strong>Exercise V</strong> Roadmap Prioritization</td>
</tr>
<tr>
<td></td>
<td>1. Discussion</td>
</tr>
<tr>
<td>12:50</td>
<td><strong>Wrap Up</strong> What we heard</td>
</tr>
<tr>
<td>13:00</td>
<td><strong>Close</strong></td>
</tr>
</tbody>
</table>
Exercise I.
What we heard
9:10 – 10:00
Who We Are
Who we are

1. PEER AND ASPIRATIONAL INSTITUTIONS
   - Public - Responsibilities
   - History - Context
   - Community Focus
   - Diversity - Access
   - Workforce Integration - AHC
   - Research Intensive
   - Facilities + US
   - Technologies - Learning
   - High-value
   - Retention - Excellence
   - High
   - ASSESSMENT

   How can we be more competitive?
   - System's Approach
   - Good students
   - Globally connected
   - Analytics, Analytics, Analytics
   - More collaboration, more collaboration, more collaboration
   - Engagement - Internal/External

2. OUR COMMUNITIES
   - Who are our communities? Why?
   - What do we want to give them?
   - What do we want to receive from them?
   - Sustainable Balance
      - Mission, Service, Research

   - Patients
   - Faculty
   - Students
   - Other...
3. **ACADEMIC THEMES AND FOCUS**

**What are we good at?**

- Family Medicine
- Community Involvement
- Teaching, Research
- Public Health
- Some sciences
- Data, Population Data, Academic Infrastructure
- Some IB of Social Sciences
- Some Social Science Research
- Some Quantitative Analysis
- Some Qualitative Analysis
- Some Research...?

**What should our focuses be?**

- Some Patents
- Clinical Trials
- Manage Innovation
- Clinical + Translational Trials
- Some IB of Social Sciences
- Some Social Science Research
- Some Quantitative Analysis
- Some Qualitative Analysis
- Some Research...?

**How will we get there / grow?**

- Using Data: Use to Leverage 1300 Clinical Trials to Facilitate Larger - Data Aggregates
- Some IB of Social Sciences
- Some Social Science Research
- Some Quantitative Analysis
- Some Qualitative Analysis
- Some Research...?

4. **LOCAL IMPACT / GLOBAL FOCUS**

**How do you create global impact?**

- Missions
- Create Nest of Scientists
- Research
- Global
- No Distraction
- Local

**How do you create local impact?**

- Missions
- Create Nest of Scientists
- Research
- Global
- No Distraction
- Local

**How do you connect the two?**

- Patterns of Similarities: Health + Death are very similar

5. **PERCEPTION & REPUTATION**

**What are we known for now?**

- *Top-notch research*
- *Size*
- *P.R.C.*
- *Impactful online" and "meaningful"
- *Groundbreaking research*
- *Proactive spirit (why?)*
- *Innovative, Inc.*

**What makes us different?**

- *Unrelenting in our community... not just elsewhere*
- *Deans/Trustee...*
- *Grants/Research...*
- *Mental Health*
- *Innovative/Innovations*
- *Global/Local/International*

**What do we want to be known for?**

- *Top-notch research + teaching + discover*
- *M.U.C.H.*
- *Innovative research ("what?"")*
- *Not accepting encroachment*
- *Innovative in areas of training*
- *Unwavering in the mission*
- *Innovative, Inc."
- *Reahrd C's*
- *The value of the A.C.T. - Remake the future*
Who do we aspire to be like?

Aspire to be a **community focused**, public university with a deep sense of **responsibility, history and culture**.

What are the most desirable attributes?

The **comprehensive, research focus** of the AHC is unique and allows it to address a wide range of complex issues from **rural health disparities to complex, interdisciplinary acute conditions**.

How can we be more competitive?

The AHC needs to pursue more **interprofessional, collaborative strategies** to remain **globally connected** and continue **recruiting the best talent**.
Our communities are diverse and engage all demographics. While we are deeply rooted in Minnesota our students, faculty and citizens are representative of national & international communities.

What do we want to give them?

We want to provide our communities with cutting edge research, innovative patient treatment and quality workforce development.

What do we want to receive from them?

We would like reliable, sustained support for our work and the resources necessary for continued innovation.
Our breadth of expertise and interdisciplinary research is integral to training 2/3 of Minnesota’s healthcare workers. In addition, our investments in infrastructure have given us a lead in the fields of big data, population health and public health.

We need to focus on interdisciplinary modes of care that integrate translational practices and make the AHC a clinical destination of choice.

We will get there by strengthening our academic core, leveraging our data and focusing on larger public/private partnerships.
How do you create global impact?

We create impact through by training the next generation of scientists and researchers that come from the most diverse backgrounds.

How do you create local impact?

We do not see the world in terms of ‘local’ vs. ‘global.’ We create impact, scale it and then apply it wherever it is appropriate.

How do you connect the two?

By viewing the local Minnesota community as a microcosm of the global population, we can impact global health by treating catastrophic disease locally.
We are known for the breadth of our top-notch, interdisciplinary and innovative research on one campus.

We are unique because of our unique relationships with our hospital partners, our biomedical partners and our urban context.

We want to be known for interdisciplinary, innovative research, teaching and practice. We want to be known as a place that rejects complacency and infuses excellence into all areas of our mission.
SWOT Analysis
**Strengths:**
- Breadth of expertise
- Diversity of disciplines
- Core talent

**Weaknesses:**
- Lack of focus
- Lack of flexibility
- Facilities

**Opportunities:**
- Inter-professional collaboration
- Big data & technology
- Philanthropy & new funding

**Threats:**
- Lack of funding
- Complacency
- Culture of silos
Visioning - Academic Executive Committee

What We Do
What we do

1. What we do: COLLABORATION
   - To what extent do we collaborate?
   - Interprofessional education & patient care
   - Who do we collaborate with?
   - What would future collaboration focus on?

2. What we do: TECHNOLOGY TRANSFER
   - How does this happen now?
   - Incubator space
   - More
   - Clinical trials
   - Intellectual property administration
   - Are there subjects to focus on?
   - How would we grow this capability?

3. What we do: RECRUITING AND RETENTION OF FACULTY AND STUDENTS
   - Where do our recruits come from?
   - What attracts them to the University of Minnesota?
   - What could we do to attract better/more recruits?
Despite spatial and organizational barriers, there is plenty of collaboration within the AHC primarily focused on pursuing research grant and undertaking patient care.
Although not embedded in our work, opportunities exist to collaborate outside the AHC in the commercialization/entrepreneurial sectors to realize translational potentials. Expanding clinical trials is also a big opportunity.
The AHC needs to follow through on the **UM Strategic Vision** and clearly articulate the **pathways to success** for everyone in the organization.
Visioning - Academic Executive Committee

How we do it
1. How we do it: ACADEMIC METHODS

How do we strengthen/build these or other methods?

2. How we do it: WORKPLACE STRATEGIES

How could changes to our workplace improve teaming and knowledge sharing?

3. How we do it: SKILL BUILDING

What do you think are the essential characteristics for faculty?
The AHC needs to create flexible space for ‘clustering’ to happen while maintaining a sense of departmental identity. We also need to develop a methodology that promotes and evaluates the impact of translational research.
The AHC workplace strategy should encourage openness, flexibility and cross-departmental mixing. Space ownership incentives need to evolve to help reclaim ‘dead space’ and to ‘right size’ programmatic functions.
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Identity
- School, team, individual
Exercise II.
What we have found out
10:00 – 10:30
Enrollment

2010
2012
2014

Source: UM Office of Institutional Research, Spring 2010-2014 Trend Data Academic Level
Research income - % change on previous year

Source: External Support Expenditures by College.xlsx spreadsheets provided by University of Minnesota
## Funding for research – US trends

### Leading Federal Sponsors of R&D

<table>
<thead>
<tr>
<th>sponsor</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOD Test &amp; Evaluation (6.4-6.6)</td>
<td>60.9</td>
<td>55.1</td>
<td>55.3</td>
</tr>
<tr>
<td>DOD R&amp;D Science &amp; Technology</td>
<td>12.1</td>
<td>11.5</td>
<td>13.4</td>
</tr>
<tr>
<td>NSF</td>
<td>5.6</td>
<td>5.5</td>
<td>5.7</td>
</tr>
<tr>
<td>DOE</td>
<td>10.8</td>
<td>10.0</td>
<td>10.3</td>
</tr>
<tr>
<td>NASA</td>
<td>11.3</td>
<td>10.6</td>
<td>10.8</td>
</tr>
<tr>
<td>HHS (incl. NIH)</td>
<td>31.4</td>
<td>29.7</td>
<td>32.0</td>
</tr>
</tbody>
</table>

Source: 2014_global_rd_funding_forecast: Battelle / R&D Magazine

Source: National Science Board Science and Engineering Indicators 2012
R&D spending by type – US trends

Source: National Science Board Science and Engineering Indicators 2012
NIH’s Big Data to Knowledge (BD2K) initiative

$32m 2014
$656 through 2020

1. 11 Centers of Excellence for Big Data Computing
2. BD2K-LINCS Perturbation Data Coordination and Integration Center.
3. BD2K Data Discovery Index Coordination Consortium (DDICC).
4. Training and Workforce Development.

Source: http://bd2k.nih.gov/#sthash.EYU2v6Sw.dpbs
Patents – US trends, top 30 US Universities

Average Increase = 158%
50 – 80 patents

Note: Excludes University of Texas and University of California Systems
Total AHC space by function type

- Building Service: 42%
- Instruction: 13%
- Academic Support: 9%
- Institution Support: 6%
- Student Services: 2%
- Clinical: 2%
- Outreach - Public Service: 2%
- Research: 0%

Source: U-Space data snapshot, October 29, 2014. Includes University owned properties only.
Total AHC space by function and condition

Source: U-Space data snapshot, October 29, 2014. Includes University owned properties only.
School assignable SF - by condition

AHC Shared
- Critical: 35%
- Poor: 21%
- Below Average: 9%
- Fair: 1%
- Good: 4%
- Excellent: 30%

Dentistry
- Critical: 99%

Medical
- Critical: 26%
- Poor: 18%
- Below Average: 11%
- Fair: 1%
- Good: 1%
- Excellent: 37%

Pharmacy
- Critical: 6%
- Poor: 25%
- Below Average: 7%
- Fair: 62%

Public Health
- Critical: 2%
- Poor: 42%
- Below Average: 56%

Nursing
- Critical: 4%
- Poor: 0%
- Below Average: 14%
- Fair: 86%

Veterinary
- Critical: 1%
- Poor: 27%
- Below Average: 51%
- Fair: 17%
Buildings - by condition

Facility Condition Needs Index

- Excellent: 0.00 - 0.10
- Good: 0.11 - 0.20
- Fair: 0.21 - 0.30
- Below Avg.: 0.31 - 0.50
- Poor: 0.51 - 0.60
- Critical: 0.61 and up

Source: Twin Cities – Minneapolis Campus FCNI by Building, 2014
Fragmentation
School of Dentistry

183,466 ASF

MALCOLM MOOS HEALTH SCIENCES TOWER
179,221 97.68%

PHILLIPS-WANGENSTEEN BUILDING
3300 1.79%

WEAVER-DENSFORD HALL
945 0.50%

Source: U-Space snapshot, May 29, 2014
School of Dentistry
School of Nursing

925 DELAWARE ST. SE  
MALCOLM MOOS HEALTH SCIENCES TOWER  
WEAVER-DENSFORD HALL 

44,165 ASF  
4,957 11.22%  
4,924 11.14%  
34,284 77.62%  

Source: U-Space snapshot, August 5, 2013
School of Nursing
College of Pharmacy

107,816 ASF

717 DELAWARE ST. SE
7,447 6.91%

MCGUIRE TRANSLATIONAL RESEARCH FACILITY
1,319 1.22%

MASONIC MEMORIAL BUILDING
2,398 2.22%

MAYO BUILDING & ADDITIONS
3,853 3.57%

MALCOLM MOOS HEALTH SCIENCES TOWER
512 0.47%

PHILLIPS-WANGENSTEN BUILDING

WEAVER-DENSFORD HALL
64,371 59.70%

Source: U-Space snapshot, August 1, 2013
Medical School

- Mayo Building & Additions: 186,712 sq ft, 18.20%
- Phillips-Wangensteen Building: 97,150 sq ft, 9.47%
- Moos Health Sciences Tower: 83,956 sq ft, 8.18%
- Nils Hasselmo Hall: 72,514 sq ft, 7.07%
- Jackson Hall: 59,036 sq ft, 5.75%
- Cancer & Cardiovascular Research: 56,119 sq ft, 5.47%
- McGuire Translational Research: 53,457 sq ft, 5.21%
- Molecular and Cellular Biology: 52,421 sq ft, 5.11%
- Magnetic Resonance Research Center: 47,075 sq ft, 4.59%
- Wallin Medical Biosciences Building: 45,647 sq ft, 4.45%
- Diehl Hall: 42,135 sq ft, 4.11%
- Variety Club Research Center: 41,158 sq ft, 4.01%
- DWAN Variety Resctr/Masonic Cancer Research: 30,322 sq ft, 2.96%
- 717 Delaware St. SE: 22,575 sq ft, 2.20%

Source: U-Space snapshot, May 27, 2014
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<th>Name</th>
<th>Square Feet</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masonic Memorial Building</td>
<td>17,653</td>
<td>1.72%</td>
</tr>
<tr>
<td>Children's Rehabilitation Center</td>
<td>14,036</td>
<td>1.37%</td>
</tr>
<tr>
<td>VFW Cancer Research Center</td>
<td>9,148</td>
<td>0.89%</td>
</tr>
<tr>
<td>West Bank Office Building</td>
<td>5,326</td>
<td>0.52%</td>
</tr>
<tr>
<td>Boynton Health Service</td>
<td>1,412</td>
<td>0.14%</td>
</tr>
<tr>
<td>Reuse Program and AHC Warehouse</td>
<td>210</td>
<td>0.02%</td>
</tr>
<tr>
<td>Fairview U Med. CTR-East</td>
<td>22,796</td>
<td>2.22%</td>
</tr>
<tr>
<td>Fairview U Med. CTR-Orthopedic</td>
<td>15,424</td>
<td>1.50%</td>
</tr>
<tr>
<td>Fairview U Med. CTR-Riverside West</td>
<td>14,517</td>
<td>1.41%</td>
</tr>
<tr>
<td>925 Delaware Street SE</td>
<td>12,056</td>
<td>1.18%</td>
</tr>
<tr>
<td>University Park Plaza</td>
<td>11,150</td>
<td>1.09%</td>
</tr>
<tr>
<td>University Enterprise Laboratories</td>
<td>6,637</td>
<td>0.65%</td>
</tr>
<tr>
<td>Riverside Professional Bldg.</td>
<td>2,173</td>
<td>0.21%</td>
</tr>
<tr>
<td>Roseridge Office Building</td>
<td>1,547</td>
<td>0.15%</td>
</tr>
<tr>
<td>North Star Mini-Storage</td>
<td>1,153</td>
<td>0.11%</td>
</tr>
<tr>
<td>Phalen Village Clinic</td>
<td>452</td>
<td>0.04%</td>
</tr>
</tbody>
</table>

Source: U-Space snapshot, May 27, 2014
School of Public Health

MAYO BUILDING & ADDITIONS 55,979 30.32%
WEST BANK OFFICE BUILDING 47,710 25.84%
UNIVERSITY OFFICE PLAZA 33,116 17.94%
MINNESOTA TECH CENTER 30,366 16.45%
MCNAMARA ALUMNI CENTER (LEASED) 6,957 3.77%
BOYNTON HEALTH SERVICE 3,726 2.02%
PHILLIPS-WANGENSTEEN BUILDING 2,919 1.58%
MOOS HEALTH SCIENCES TOWER, MALCOLM 2,211 1.20%
AFFINITY PLUS FEDERAL CREDIT UNION 1,641 0.89%

Source: U-Space snapshot, March 18, 2014
AHC Classroom Spaces Breakdown

Source: U-Space data snapshot, October 29, 2014. Includes University owned properties only.
AHC Study Spaces Breakdown

Source: U-Space data snapshot, October 29, 2014. Includes University owned properties only.
AHC Class Labs – by size

Source: U-Space data snapshot, October 29, 2014. Includes University owned properties only.
SF per individual work setting

- AHC Shared: 189 Office, 16 Conference, 35 Ancillary
- School of Dentistry: 188 Office, 24 Conference, 34 Ancillary
- AHC Health Sciences: 199 Office, 38 Conference, 270 Ancillary
- Medical School: 230 Office, 28 Conference, 38 Ancillary
- School of Nursing: 168 Office, 124 Conference, 2 Ancillary
- College of Pharmacy: 228 Office, 22 Conference, 33 Ancillary
- School of Public Health: 178 Office, 15 Conference, 63 Ancillary
- College of Veterinary Medicine: 327 Office, 25 Conference, 44 Ancillary
- UM AHC average: 217 Office, 24 Conference, 52 Ancillary
- Benchmark cellular office: 168 Office, 42 Conference, 19 Ancillary
- Benchmark collab office: 84 Office, 47 Conference, 9 Ancillary
- Benchmark flexible office: 76 Office, 78 Conference, 52 Ancillary

Source: U-Space snapshot, UM OIR Headcount
Employees per individual workspace

- AHC Shared: 1.3
- School of Dentistry: 1.7
- AHC Health Sciences: 1.0
- Medical School: 1.2
- School of Nursing: 1.1
- College of Pharmacy: 1.3
- School of Public Health: 0.8
- College of Veterinary Medicine: 1.9
- UM AHC average: 1.2

Benchmark cellular office: 0.95
Benchmark collab office: 0.95
Benchmark flexible office: 1.5

Source: U-Space snapshot, UM OIR Headcount
<table>
<thead>
<tr>
<th>Department</th>
<th>Employees per meeting room</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHC Shared</td>
<td>23.2</td>
</tr>
<tr>
<td>School of Dentistry</td>
<td>23.9</td>
</tr>
<tr>
<td>AHC Health Sciences</td>
<td>8.2</td>
</tr>
<tr>
<td>Medical School</td>
<td>18.3</td>
</tr>
<tr>
<td>School of Nursing</td>
<td>30.6</td>
</tr>
<tr>
<td>College of Pharmacy</td>
<td>21.1</td>
</tr>
<tr>
<td>School of Public Health</td>
<td>18.7</td>
</tr>
<tr>
<td>College of Veterinary Medicine</td>
<td>23.5</td>
</tr>
<tr>
<td>UM AHC average</td>
<td>19.1</td>
</tr>
<tr>
<td>Benchmark cellular office</td>
<td>14.0</td>
</tr>
<tr>
<td>Benchmark collab office</td>
<td>11.0</td>
</tr>
<tr>
<td>Benchmark flexible office</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Source: U-Space snapshot, UM OIR Headcount
Distribution of conference space by square footage

Source: U-Space snapshot, UM OIR Headcount
Exercise III
Workplace Strategies
10:30 – 11:15
# Work-styles

<table>
<thead>
<tr>
<th>Dentistry</th>
<th>Work Style A</th>
<th>Work Style B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work style name:</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Interactions:

<table>
<thead>
<tr>
<th>Dentistry</th>
<th>Work Style A</th>
<th>Work Style B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within department</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>OOOOOOO high</td>
<td>OOOOOOO high</td>
</tr>
<tr>
<td>With whom?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Across department</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>OOOOOOO high</td>
<td>OOOOOOO high</td>
</tr>
<tr>
<td>With whom?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>External (non-UM)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>OOOOOOO high</td>
<td>OOOOOOO high</td>
</tr>
<tr>
<td>With whom?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Top 5 activities overall:

<table>
<thead>
<tr>
<th>Dentistry</th>
<th>Work Style A</th>
<th>Work Style B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Where they spend time:

<table>
<thead>
<tr>
<th>Dentistry</th>
<th>Work Style A</th>
<th>Work Style B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Who are they (roles)?

<table>
<thead>
<tr>
<th>Dentistry</th>
<th>Work Style A</th>
<th>Work Style B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Work-style chart — Mobility and collaboration
Exercise IV
Designing our future
Planning Scenarios
11:15 – 12:30
Scenario 1 – collegiate
Collegiate – Ryerson University Faculty of Science

Health
- Data Privacy
- Mobile Data
- Networks
- Public Health
- Computational Math
- Computational Physics
- Graphs
- e Society
- e Health
- Bioinformatics
- Biomath
- Biomedicine
- Biomolecular Interactions
- Synthetic and Medicinal Chemistry
- Pathogens and Infection
- Cells, Genes, and Molecules
- Infectious Diseases

Environment
- Water
- Energy
- Biodetection
- Ecology
- Fluids
- Food Chemistry
- Trace Element Detection
- Surfaces and Interfaces

Innovation & Benefit
- Interdisciplinary
- Solutions Focus
- User Interface
- Medical Imaging
- Tele-Operation / Presence
- User Experience
- Robotics
- Artificial Intelligence
- Tools

Data
- World Lab
- City Building

Tools
Scenario 2 – collaborative
Polytechnic Campus Colleges and Schools

Degree Granting Programs

**Business, W. P. Carey School of Business**
Undergraduate Degree Programs

**Engineering, Ira A. Fulton Schools of**
Graduate Degree Programs | Undergraduate Degree Programs

**Letters and Sciences, College of**
Undergraduate Degree Programs

**Teachers College, Mary Lou Fulton**
Graduate Degree Programs | Undergraduate Degree Programs

Additional Programs

**Graduate Education**

**Honors - Barrett, the Honors College**
Undergraduate Honors Programs

**University College**
Scenario 3 – Theme Based
Theme Based Organization - University of Texas, Brownsville
Scenario 4 – Solution focused

A

CT

GC1
VM

GC2

D

GC3

PH

GC4

P

N

Com

Cores
Labs
Incubator

Learn
Clinics
Collaborative - Gates Vascular Institute
Business

- Incubator
- Partners
- Not for profit
Education

- Nursing
- Allied Health
- CE
Medicine

- Vascular
- Cardio
- Neuro
Research
• Vascular
• Cardio
• Neuro
Student Success

---

### Education & Training

#### About the Research Training Office

**Mission Statement**

To function as the physical and intellectual hub for education and training in clinical and translational research for the Buffalo Translational Consortium.

---

**Three Overarching Goals**

- Create an infrastructure to integrate the existing training programs
- Develop new programs and training modules that will be integrated with existing programs to train a diverse range of clinical and translational researchers
- Serve as a catalyst to bring together separate research groups into multidisciplinary teams
Scenario 1 – collegiate

Scenario 2 – collaborative

Scenario 3 – Theme Based

Scenario 4 – Solution focused
Planning scenarios
Exercise V
Investing in our future
11:30 – 12:00
<table>
<thead>
<tr>
<th>Agenda</th>
<th>Introduction</th>
<th>10:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>• Agenda</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Scope and process</td>
<td></td>
</tr>
<tr>
<td>Recap</td>
<td>1. Vision</td>
<td>10.10</td>
</tr>
<tr>
<td></td>
<td>Who we are, what we do and how we do it</td>
<td></td>
</tr>
<tr>
<td>Synthesis</td>
<td>2. Guiding Principles</td>
<td>10:30</td>
</tr>
<tr>
<td></td>
<td>How we make our decisions</td>
<td></td>
</tr>
<tr>
<td>Analysis</td>
<td>3. Objectives &amp; Strategies</td>
<td>11:00</td>
</tr>
<tr>
<td></td>
<td>What we want to do</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Current conditions and program drivers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Program strategies and questions</td>
<td></td>
</tr>
<tr>
<td>Break</td>
<td>Lunch</td>
<td>12:00</td>
</tr>
<tr>
<td>Roadmap</td>
<td>4. Priorities</td>
<td>12:30</td>
</tr>
<tr>
<td></td>
<td>When do we want to do it</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Short, medium and long term goals</td>
<td></td>
</tr>
<tr>
<td>Analysis</td>
<td>5. Workplace Strategies</td>
<td>1:20</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>• Review feedback from previous sessions workplace challenges and innovations in academic healthcare and beyond</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Discuss and refine workplace principles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Discuss and refine preliminary work style hypotheses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Discuss and define work style requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Discuss and define work style classifications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Review next steps</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wrap Up</th>
<th>What we heard</th>
<th>2:20</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Next Steps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Close</td>
<td>2:30</td>
</tr>
</tbody>
</table>
AHC Academic Executive Committee Work Session #2
November 11th 2014
<table>
<thead>
<tr>
<th>Agenda</th>
<th>Description</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>Introduction • Scope and process</td>
<td>3:30</td>
</tr>
<tr>
<td>Recap</td>
<td>1. Vision Who we are, what we do and how we do it</td>
<td>3:35</td>
</tr>
<tr>
<td>Synthesis</td>
<td>2. Guiding Principles How we make our decisions</td>
<td>3:45</td>
</tr>
<tr>
<td>Analysis</td>
<td>3. Objectives &amp; Strategies What we want to do</td>
<td>4:00</td>
</tr>
<tr>
<td>Roadmap</td>
<td>4. Priorities When do we want to do it</td>
<td>4:20</td>
</tr>
<tr>
<td>Analysis</td>
<td>5. Workplace Strategies Discuss workplace principles, work style hypotheses</td>
<td>4:35</td>
</tr>
<tr>
<td></td>
<td>and requirements</td>
<td></td>
</tr>
<tr>
<td>Wrap Up</td>
<td>Next Steps</td>
<td>4:55</td>
</tr>
<tr>
<td>Close</td>
<td></td>
<td>5:00</td>
</tr>
</tbody>
</table>
Scope and Process
10:30 – 10:40
1. Assess current state to future state transition: 10 year plan for improving quality and predicting right sizing of education, research and office space.

2. Strategize increased utilization of retainable spaces while improving connectivity between programs.

3. Work towards a reduction in occupied space by 20% including the elimination of obsolete facilities.
Roadmap

UoM / AHC / Schools futures

Current state
AHC direction

Data Gathering and analysis

Vision Principles
Priorities

Current state
Future state

Program scenarios

Program Iterations

Modify chosen program

Draft
Future Program

1. Collegiate
2. Collaborative
3. Themes
4. Solutions

1. Learning Focus
2. Clinical Focus
3. Translational Focus

Includes interprofessional learning and care and workplace scenarios

10/14

11/11

12/2

12/9

Kick Off Visioning Interviews 9/29-30

Current Condition

Strategic Modeling and Joint Visioning

Program Options

Program Refinement
Predictive program drivers

Who and what we want to be

Vision

Excellence
Impact
Innovation

How we make our decisions

Guiding Principles

Culture
Business
Identity
Collaboration
Academics

What we want

Objectives

Enterprise
Workplace
Facilities
Campus
Partners

When do we want it

Priorities

Short
Medium
Long term
Research space – Phase 1 predictive programing process

Current state

- People
- Space
- School

Modify & Prioritize

- Research / cores to BDD?
- AHC Core facilities
- UM / School Priorities
- Worst Condition

Draft Program

- Vision Principles Priorities
- Project Population / Space
- Benchmarks

Final Program

- Collaborative Composition
- Space / population
- Thematic Composition

Phase 2
Learning space – Phase 1 predictive programing process

Current state
- Classrooms
- Class Labs
- Clinics
- Library
- Enrollment
- Education at AHC
- Condition / building / School

Modify & Prioritize
- Other local sites?
- Growth / Program Change
- UM / School
- UMP / FV Priorities
- Worst Condition

Draft Program
- Vision
- Principles
- Priorities
- Project Population / Space
- Utilization / Efficiency by type

Final Program
- Collaborative Composition
- Space / population
- Thematic Composition

Phase 2
Clinic space – Phase 1 predictive programing process

Current state

- U of M Health Space
  - Area at AHC
    - Current condition / building

Modify & Prioritize

- U of M Health not at AHC
  - U of M Health at AHC
    - UM / School focuses
      - Worst Condition

Draft Program

- Vision Principles Priorities
  - Project Space
    - Utilization/Efficiency

Final Program

- Collaborative Composition
  - Space / population
    - Thematic Composition

Phase 2
Summary of inputs
Summary of Inputs

Information
  • BoR Overview Reports
  • University Strategic Plan

Meetings with each School

Kick Off Meeting
  • Who we are
  • What we do
  • SWOT Analysis

AHC Visioning
  • How we do it

Collegiate work session 1
  • Workplace Strategies
  • Designing our Future

Current Conditions
What we heard from the Schools

Learning
- Interprofessional collaborative team based learning
- Aligning learning with practice by integrating clinics
- Team based user friendly technology loaded space

Engagement
- Nascent systems for interdisciplinary connectivity: internally, community, practitioners and industry

Research
- Expand clinical trials to incorporate the full patient population across all the partner organizations
- Technology transfer integrated with research to create a fully translational capability
- Incorporate big data analytics into learning and research

Identity
- School, team, individual
Defining a vision – Collaborative and theme based

**Systems**
An efficient enterprise with an administrative structure that aligns operations in workforce, translation, outreach and clinical practice clusters

**Partners**
An integrated AHC market identity which leverages our strengths in our relationships with University, State, system and other partners

**Workplace**
Consistency in physical space standards, with flexibility for alignment of workplace with requirements of workforce, translation, outreach and clinical practice clusters
Defining a Vision – Collaborative and theme based

Facilities
A portfolio of common education spaces complemented by school focused specialized learning facilities. A reliable and efficiently operated cluster of scientific core facilities accessible to all lab users.

Campus
Realign functional adjacencies for efficiency and convenience. Create a porous and navigable campus.
Vision

10:10 – 10:30
Strategic Facility Plan Vision (Draft)
– Who we are, what we do and how we do it

Excellence
Our vision is to be a world class comprehensive, research focused Academic Health Center with a deep sense of responsibility, history and culture. Our Academic excellence will be grounded in a unique campus environment with facilities that support the very best in learning, research and medical practice.

Impact
By viewing the local Minnesota community as a microcosm of the global population, we impact global health by addressing a wide range of locally complex issues in an accessible and engaging environment.

Innovation
By aligning innovation in interprofessional education and interdisciplinary research with collaborative healthcare delivery we create meaningful impact, scale it and then apply it wherever it is appropriate.
Guiding Principles

10:30 – 11:00
Strategic Facility Plan Guiding Principles (Draft)

– How we make decisions

Culture
We are a supportive organization that provides mentorship and training so our faculty, staff, and students can be responsible, skillful, and collaborative. We encourage leadership, incentivize excellence, and reward success.

Business
We reject complacency and will leverage data-driven, evidence-based methods to continuously strengthen our academic core. We will increase our financial sustainability by increases in efficiency and productivity and the realization of new income streams. We will become an agile organization using predictive methods to respond to changing conditions while maintaining our academic focus.

Identity
Within the overarching identity of the University of Minnesota, we will ensure a clear sense of identity at the AHC, school, departmental, team, and individual level.
Strategic Facility Plan Guiding Principles

– How we make decisions

Collaboration
We will promote opportunities to engage in productive collaboration at all scales across our organization and with our external healthcare and community partners. We will be pioneers of interprofessional learning, leaders in inter-disciplinary research and engage in public / private partnerships that benefit our organization and enable us to achieve our vision.

Academics
We will engage in deliberate methods that integrate learning, research and practice in order to translate our intellectual capital into societal benefit. We will provide transformative learning and creative research experiences that enable us to provide our communities with the people, skills, services and outcomes that support the well being of our state.
Objectives & Strategies

11:00 – 12:00
AHC Core Space – by function and building condition

- Research
  - Mayo, PWB + Moos
  - DWAN, Delaware, MCB, Jackson, Nils Hassel
  - BDD

- Independent Operations
  - Fairview Lease + other ISO

- Academic Support
  - Library, Academic Admin

- Instruction

- Institution Support

- Student Services

- Clinical

- Outreach - Public Service

Source: U-Space snapshot, October 29, 2014. Includes University owned properties only
AHC Research Space – by building condition

Cancer & Cardiovascular Research
Lions Res Bldg
Wallin Medical Biosciences
Magnetic Resonance Research Center
Reuse Program and AHC Warehouse
Nills Hasselmo
MCB
DWAN/Masonic Cancer Research
Jackson
717 Delaware St.
Diehl
Weaver-Densford
Masonic Memorial
Variety Club
Children's Rehabilitation Center
Boynton Health Service
Malcom Moos
Mayo
PWB
VFW Cancer Research

Source: U-Space snapshot, October 29, 2014. Includes University owned properties only
Classrooms – Current State

Classrooms by Building

- Malcom Moos
- Mayo
- PWB
- Weaver-Densford
- Diehl
- Children's Rehabilitation Center
- Masonic Memorial
- Boynton Health Service
- Jackson
- Nills Hasselmo

Classroom Count by Size and School

- Health Sciences
- Nursing
- Pharmacy
- AHC Shared
- Medical

Source: U-Space snapshot, October 29, 2014. Includes University owned properties only
AHC Study Space – by building condition and school

Study Space by Location

- Diehl
- Malcom Moos
- Mayo
- PWB
- Weaver-Densford
- Masonic Memorial
- Children's Rehabilitation
- MCB
- DWAN
- Boynton

Study Space by School

- MEDICAL
- DENTISTRY
- PUBLIC HEALTH
- AHC SHARED
- NURSING
- PHARMACY
- University Libraries

Source: U-Space snapshot, October 29, 2014. Includes University owned properties only
AHC Class Lab Space – by building condition and type

Class Labs by Location

- Malcom Moos: Dental Simulation, other bench labs
- MCB: Bench Labs
- Jackson: Anatomy
- Weaver-Densford: Pharmacy Compounding and Nursing Simulation
- Children's Rehabilitation: PT OT Skills labs
- PWB: IERC
- Mayo: SIM Portal
- Diehl: 

Source: U-Space snapshot, October 29, 2014. Includes University owned properties only
School assignable SF - by condition

Source: U-Space snapshot, October 29, 2014. Includes University owned properties only.
Strategic Facility Plan Objectives and Strategies

1. Increase Enterprise Efficiency
   - Evaluate opportunities for streamlining AHC and school administration operations
   - Align workforce, translation, outreach and clinical practice clusters with clear metrics for efficiency and productivity improvements
   - Reduce real estate portfolio by 20%
   - Develop new facilities through demand modeling and whole life business planning
2. Create a Productive Workplace

- Develop consistent workplace space standards across the AHC
- Create work style types that provide flexibility for requirements of administrative, workforce training, instruction, research and clinical practice
- Develop joint home base and shared AHC space models in support of a mobile work environment where appropriate
- Provide cross departmental, shared work place environments that promote accessibility and collaboration
3. Increase utilization of facilities

- Balance a portfolio of common education spaces with school focused specialized learning and clinical learning facilities
- Implement common facility space allocation and utilization standards across all research facilities
- Create a reliable, efficiently operated cluster of scientific core facilities accessible to all lab users
- Decommission underused and obsolete facilities
4. Create a User Friendly Campus Environment

- Create the environments and facilities that optimize the student and patient experience
- Reassess functional adjacencies for efficiency, convenience and to enhance the connectivity of translational processes
- Provide mixed use amenities to support a robust campus experience and density
- Create an AHC Core that is easy to access and porous
- Create a clearly defined and navigable campus
5. Create a Culture of Collaboration

- Create and implement common collaboration space standards across all our facilities
- Implement a range of incentive structures that encourage interprofessional and interdisciplinary engagement
- Identify resources, facilities and systems that deliberately link learning and research to healthcare outcomes, services and products
- Identify resources, facilities and systems that encourage government, industry and other partners to directly engage in our work
Priorities

11:00 – 12:00
AHC Space Program Scenarios  – Future State

Which space program most accurately reflects your requirements for a collaborative, Theme based AHC?

<table>
<thead>
<tr>
<th>Scenario</th>
<th>1. Learning</th>
<th>2. Practice</th>
<th>3. Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Classrooms, specialized learning and research</td>
<td>Clinical learning and research</td>
<td>Clinical learning and research with healthcare partners</td>
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<td>Drivers</td>
<td>More research at BDD Less partner integration</td>
<td>Inter disciplinary learning and clinical research Some partner integration</td>
<td>Translational learning and research More partner integration</td>
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<td>Team based</td>
<td>Bench to bedside</td>
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<td>Operations</td>
<td>Shared general learning</td>
<td>Shared learning, research and clinics</td>
<td>Sharing with healthcare partners</td>
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</table>
Learning – Future State

Focus:
A student centered place where interprofessional learning and collaborative research happens.

Drivers:
Direct linkage between the classroom, specialized learning facilities and limited clinical settings. Research uses clinics and core facility resources from multiple locations. Office clusters for education and research.

Culture:
Focused on raising the quality of the student learning experience.

Operations:
Sharing of certain physical and technological resources. Streamline administrative systems across learning and research.
Learning – Questions

Education
• What are the primary learning and student support needs in the AHC?

Research
• Which research programs would you see as priorities in the AHC and which would you see relocated?
• Which core facilities would be retained on the AHC Campus and which relocated?
• Are there any new core facilities you would see relocated to the AHC?

Clinical
• Along with Dentistry and the new ACC, are there any other clinical learning facilities you would like to see located in the AHC?
Practice – Future State

Focus:
A place where integrated practice focused learning and clinical translational research happens.

Drivers:
Interprofessional learning integrates the classroom with the clinical setting. Interdisciplinary clinical research uses resources from multiple locations for studies, trials and commercialization. Office clusters for education, clinics and research.

Culture:
Team based learning and collaborative research

Operations:
Sharing of physical, human and technological resources
Aligned IT, human, financial and facility administrative systems across learning and clinical resources.
Practice – Questions

Education
• How would you see your space profile changing with the learning emphasis on clinical experience?

Research
• Which research programs would you prioritize at the AHC to create an interdisciplinary clinical research capability
• Based on answers to the above are there any new or relocated core facilities to consider?

Clinical
• What specialized care facilities would you see moving to AHC to create an enhanced clinical research capability?
Translation – Future State

Vision:
A place where the full cycle of translational learning, research, healthcare care and commercialization happens.

Drivers:
Inter-professional learning and inter-disciplinary research integrated into the clinical setting. Deliberate pathways from bench to bedside. Decentralized office clusters.

Culture:
Integrated continuum of inter professional learning, inter-disciplinary basic to applied research, clinical trials, commercialization and patient care.

Operations:
Boundary-less sharing with partners of physical, human and technological resources. Aligned IT, human, financial and facility administrative systems.
Translation – Questions

Education
• How would you integrate greater translational learning into the education process?

Research
• Which research programs and new facilities would you prioritize and what facilities would you require at the AHC to create a fully translational interdisciplinary clinical research capability?
• Based on answers to the above are there any new or relocated core facilities to consider?

Clinical
• Might there be additional opportunities to more fully integrate care, practice and learning on the AHC Core Campus?
From work styles to workplace solutions

Define work styles

Develop solutions for each work style

Determine how to organize and cluster solutions, and interconnect them with common spaces

Overarching workplace principles and goals

Overarching workplace principles and goals
Goals

1. Define common principles for how space will be used to support the organization in the future
2. Refine work style categories and classifications
3. Define requirements for each work style
Agenda for today

1. Review feedback from the previous sessions
2. Presentation of workplace challenges and innovations in academic healthcare and beyond
3. Discuss and refine workplace principles
4. Discuss and refine preliminary work style hypotheses
5. Discuss and define work style requirements
6. Discuss and define work style classifications
7. Review next steps
Examples of workplace innovation in academic healthcare
A conscious shift toward open offices to improve faculty collaboration by increasing visibility.

Universal open-office solution designed to facilitate and encourage ad hoc interaction.
Office is centralized and serves as a "gateway" between the different parts of the campus.

Designed as a home base to increase cross-departmental interaction.

First two floors are student/teaching space. The rest is office space.
Department of Obstetrics and Gynecology
Penn Medicine

More open offices designed to increase natural light and circulation, improving access to colleagues.

A floor designed specifically for faculty to interact and share ideas.

Spaces dedicated to supporting several kinds of collaboration.

A faculty lounge designed around idea sharing, incorporating external monitors, and writeable surfaces.
UM Ambulatory Care Center

“New clinic spaces will incorporate education and research for transformative team-based care, which will enhance both the patient and training experience.”*

Designed around **reimagining** the best way to provide **patient care**. Patient needs and the principles of innovation, research and cost-effective care have been incorporated at every level into the ACC design.

With a goal of providing lower cost healthcare to its patients, **cost efficiency of new layout** translates to costs to the patient.

Optimized buildings for cellular work

SAS Headquarters, Sweden
Common user experiences in cellular workplaces
Common user experiences in cellular workplaces
Open team space in small clusters
Complementary private space
Large team room
Free-address desking
Quiet zone
Informal team space
Healthy space
Social hubs
What we heard about the workplace in the first session

Efficiency
- Align incentives so that unused space gets freed or better used
- Right-size spaces
- Increase flexibility

Team and knowledge sharing
- Promote informal interaction
- Provide home bases to build community
- Increase visibility between different parts of the building

Culture and people
- Less hierarchical
- More sharing and inter-departmental mixing
- More accessibility
What we heard about the workplace in the second session

Source: AHC Collegiate Program Onsite Group Work Session #1. October 13, 2014
What principles should we put in place to guide how space is allocated and used?

• What role should status, achievement or entitlements play in allocating space to individuals? *Can people “earn” space?*

• How much diversity can there be in how space is allocated to individuals or groups? *Do differences need to be eliminated to be fair?*

• Should needs be objectively assessed before space is designed or allocated?

• To what degree can specialized functions like privacy or collaboration be exclusively assigned to individuals versus shared by all?

• To what degree can groups be able to own space, like meeting rooms? *To what degree should space be mixed and consolidated?*

• To what degree should technology be part of the workplace solution? *Should it be attached to space allocation?*
# Reported UM AHC Work Groups

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<th>Executive</th>
<th>Administration</th>
<th>Staff/Support</th>
<th>Clinical Faculty</th>
<th>Basic Science Faculty</th>
<th>Teaching/Educators</th>
<th>Adjunct Faculty</th>
<th>Clinicians</th>
<th>Research Faculty/Researchers</th>
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Source: AHC Collegiate Program Onsite Group Work Session #1. October 13, 2014
Relative Interaction and Mobility by Work Group
(size of circle scaled to reported mobility)

Source: AHC Collegiate Program Onsite Group Work Session #1. October 13, 2014
Preliminary work style categories

**Mobile connector**
Spends time in multiple locations, with high interaction outside UM (e.g., patients), and moderate-to-high interaction inside UM.

**Resident connector**
Stays closer to home, but highly interactive within and across UM departments.

**Teamer**
Stays closer to home, but highly interactive within their department. Less interactive across departments.

**Heads down**
Primarily at the desk with low-to-moderate levels of internal interaction, and low external interaction.
### Reported UM AHC Work Groups

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<th>Pharmacy</th>
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</table>

Source: AHC Collegiate Program Onsite Group Work Session #1. October 13, 2014
Work style requirements

For each work style category:

• What kinds of behaviors does an individual workspace need to support or promote?

• What kinds of behaviors do support spaces (secondary spaces) need to support or promote?

• What types of technologies does the work style need (personal tools, tool embedded in settings, software, etc.)?

• How well do existing workplace models apply?
Buildings - by condition

Facility Condition Needs Index

- Excellent: 0.00 - 0.10
- Good: 0.11 - 0.20
- Fair: 0.21 - 0.30
- Below Avg.: 0.31 - 0.50
- Poor: 0.51 - 0.60
- Critical: 0.61 and up
UofM Strategic plan

Institutional transformation
Interdisciplinary solutions
• Health
• Food Security
• Industry
• Environment

An exceptional University where grand challenges are addressed

Support excellence, and with intention, reject complacency

Recruit, retain, and promote field shaping researchers and teachers

Preeminent in solving the grand challenges of a diverse and changing world

A culture of engagement, capitalizing on our unique location

Tomorrow’s Leaders
• Place based
• Service focused
• Real life
• Research
• Experimentation

Streamline processes
Align with Vision
• Time
• Money
• Strategy
• Communication

Culture of innovation and transformation
• scholarship
• Incentives
• Awards
• Reviews

State - Nation - World

Dynamic community partnerships and impact
Who we are

Peer & Aspirational Universities

Our Communities

Local Impact / Global Focus

Academic Themes and Focus

Perception and Reputation
What we do

1. What we do: COLLABORATION

To what extent do we collaborate?

Who do we collaborate with?

What would future collaboration focus on?

2. What we do: TECHNOLOGY TRANSFER

How does this happen now?

Are there subjects to focus on?

How would we grow this capability?

3. What we do: RECRUITING AND RETENTION OF FACULTY AND STUDENTS

Where do our recruits come from?

What attracts them to the University of Minnesota?

What could we do to attract better / more recruits?
How we do it

1. How we do it: ACADEMIC METHODS
   - What does interdisciplinary mean?
   - What does translational mean?

2. How we do it: WORKPLACE STRATEGIES
   - How could we utilize our workplace more efficiently?

3. How we do it: SKILL BUILDING
   - What do you think are the essential characteristics for faculty?
   - What skills are needed?
## Agenda

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Time</th>
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<tbody>
<tr>
<td>Overview</td>
<td>Introduction and Agenda</td>
<td>12:30</td>
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<tr>
<td>Recap</td>
<td>1. Vision, Guiding Principles and Objectives</td>
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<td>Analysis</td>
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<td>• Initial assessment of survey</td>
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<td>• Roundtable on collegiate program responses</td>
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<td>• Predictive program and operations implications</td>
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<td>• Future state metrics and benchmarks</td>
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<td>Analysis</td>
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<td>• Future work style framework development</td>
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<td>• Work style development – surveys and tools</td>
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<td>Analysis</td>
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<td>• Approach to predictive program development</td>
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<td>Wrap Up</td>
<td>What we heard, next steps</td>
<td>4:25</td>
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<td>Close</td>
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Vision
Guiding Principles
Objectives
12:40 – 1:00
Learning
1:00 – 2:00
Learning space – Predictive program model

Room Inventory
Room Specifications
Availability

Enrollment
Contact Hours
by School
by Program
by Year

Supply / Demand Calculation

Station Area
Number of Stations
Room Size
Available Hours
Classroom Utilization

Required Inventory
Simulation
Non Scheduled
Library
Learning space – Calculation

\[
\text{Number of spaces required} = \frac{\text{Demand}}{\text{Supply}}
\]

\[
= \frac{\text{Contact Hours} \times \text{Enrollment} \times \left(\frac{\text{Student Station Size}}{\text{Utilization}}\right)}{\text{Scheduled Hours Available} \times \text{Area of Space} \times \text{Space Utilization}}
\]
## Learning space – Enrollment + Contact Hours

### Learning Spaces Calculator CURRENT

<table>
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<th>School</th>
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### Examples:

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| Station area | 18 | 30 | 20 | 25 | 25 |
| Number of stations | 200 | 120 | 60 | 60 | 25 |
| Station utilization | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| Room size | 3600 | 3600 | 1200 | 1500 | 625 |
| Available hours per week | 40 | 40 | 40 | 40 | 80 |
| Classroom Utilization | 0.63 | 0.73 | 0.43 | 0.2 | 1 |
### School of Nursing – Current and Future Demand

<table>
<thead>
<tr>
<th>Student Enrollment</th>
<th>Learning Spaces</th>
<th>Learning Spaces</th>
<th>Simulation Spaces</th>
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<tbody>
<tr>
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<td>Small Group Teaching</td>
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<tr>
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### School of Pharmacy – Current and Future Demand

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**Enrollment**

**Simulation Spaces**

**Study Space**

**CURRENT**

**FUTURE**
### School of Veterinary Medicine – Current and Future Demand

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#### Student Enrollment
- **Room / Specification**
  - Station area: 18
  - Number of stations: 200
  - Station utilization: 0.75
  - Room size: 3600
  - Available hours per week: 40
  - Classroom Utilization: 0.63

#### Learning Spaces
- **Lecture Hall**
- **Active Learning**
- **Small Group Teaching**
- **Computer Testing**

#### Simulation Spaces
- **Room / Specification**
- **Lecture Hall**
- **Active Learning**
- **Small Group Teaching**
- **Computer Testing**

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<tr>
<th>Population</th>
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### School of Medicine – Current and Future Demand

#### Contact Hours Curricula Based % Change

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<th>Contact Hours</th>
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<td>Program</td>
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#### Enrollment

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#### MEDICAL SCHOOL "WISH LIST" POSSIBILITIES...OWNED SPACE

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<th>SPACE USED FOR...</th>
<th># NEEDED</th>
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<td>300 - 350</td>
<td>Traditional Lecture with large number of students/ Grand Rounds</td>
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<tr>
<td>LARGE GROUP</td>
<td>117</td>
<td>Active learning spaces</td>
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<tr>
<td>SMALL GROUP</td>
<td>16 - 20</td>
<td>Small groups ranging in size from 7 - 14 students and 1 instructor/facilitator</td>
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<tr>
<td>LAB SPACE</td>
<td>20 - 25</td>
<td>Formal lab presentations &amp; lab work</td>
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<td>IERC/SIM PORTAL-LIKE SPACES</td>
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<td>OSCE's (Practice); Student practice of H &amp; P (formative assessments)</td>
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<td>ADVISING SPACE</td>
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#### CURRENT

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<td>Traditional Lecture with large number of students/ Grand Rounds</td>
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<td>SMALL GROUP</td>
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<td>Small groups ranging in size from 7 - 14 students and 1 instructor/facilitator</td>
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<td>LAB SPACE</td>
<td>20 - 25</td>
<td>Formal lab presentations &amp; lab work</td>
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## Predictive Program – Deliverable Summary

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Research

2:00 – 3:00
Research space – Predictive program model

- By School
  - Bench Lab Research
  - Other Research
- By Building
- Current Metrics
  - No of PIs
  - Area
  - $ / Sqft
- Space Allocation Benchmarks
  - Area / PI
  - $ / PI
- Increase PI numbers
- Relocate PIs
- Build / renovate
- Reallocate space
- Future Inventory
  - Ancillary
  - Animal
  - Core
- Space growth ratios and capacity
Research space – Methodology, by building and by school

Population
- All Faculty identified as Principal Investigators

Expenditures
- FY 14 sponsored direct research expenditures per PI
- PIs with no expenditures counted
- PIs with no area counted

Area of Research Space
- Bench lab research: Office, Lab, support lab
- Other research: Mainly offices identified

Area of Research Space
- Area per PI = total area / all PIs
- $/sqft = total $ / total area
## Research space – Benchmarks by school

<table>
<thead>
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<th>School</th>
<th>Total In Use Net Area</th>
<th>No. Of PIs</th>
<th>Research Expenditure $</th>
<th>$ / PI</th>
<th>$ / Sqft</th>
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## Research space – Current buildings, efficiency and productivity

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### Benchmark

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- **$ / SQFT**
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- **Fill Existing buildings**
- **Use existing capacity**
- **Move existing or add new PIs**
### Research space – Future State

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*Move existing or add new PIs*
Break
3:00 – 3:15
Workplace
3:15 – 4:15
Workplace – Phase 1 predictive programming process

Current state
- Office/Wkstn Collaboration
- Meeting/Conf Support
- Workplace at AHC
- Workplace users
- Workplace at AHC
- Current allocation by mission and building
- UM / School focuses
- Work setting type and size
- Work Style Assignment
- Worst Condition

Modify & Prioritize

Draft Program
- Principles Policies
- Change Process
- Target SF/Utilization
- Projected Space

Final Program
- Collaborative Composition
- Thematic Composition
- Space / population

Phase 2
- Workplace users
Guidelines - Campus Workplace Principles and Objectives

Create **great spaces** and allocate them in a way that **optimizes utilization** so that we can invest more in research, teaching and clinics.

1. Create highly **functional, easy-to-use, comfortable, welcoming** places that make work thrive
2. Use design to enhance **well-being** in the workplace on campus
3. Use design to **promote desired behaviors**, emphasizing **collaboration and innovation**
4. Invest in **technology** that allows us to get more out of space – e.g., universal A/V, mobile tools, space finding and reservation technology, electronic filing support, etc.
5. Environments that enable **work any time, anywhere**, with **any device**
6. Design & cluster spaces to foster **community** within and across AHC groups
7. Emphasize **sustainable** solutions and operations
8. Contain costs by **improving space utilization**
9. Use design to **attract and retain** the best talent by **highlighting all of the above** rather than individual status
Guidelines

We will create an operating manual for workplace in new and existing facilities that will

- Serve as standards for the distribution, assignment and allocation of workplace resources in relation to work styles
- Refine technology integration based on work styles and settings
- Describe workplace choices for support in each domain (teaching, clinical and research)
- Define a process for meeting AHC goals for quality, productivity, efficiency and space savings
Implementation Process

Phase 1
- Preliminary principles, allocation framework and goals

Phase 2
- AHC-wide investigation: all staff/faculty survey
- High-level implementation plan for all of AHC
- Identification of early adopters for pilot: 100 to 300 users

Pilot
- Local pilot engagement: observations and interviews
- Pilot design, implementation and change management process
- Evaluation

Progressive rollout
- Final principles, standards, targets and processes
- Work style measurement
- Standard design, implementation and change management process
Helping people through change

Multi-step, top-down and bottom-up process that requires

- Leadership involvement
- Understanding the reality of change for different types of people
- Understanding common fears and barriers
- Strategic messaging, branding and well-thought-out activities
- Hands-on change team that includes IT
Potential pilot change process

Exploratory diagnostic

Programming
- Interviews
- Observations

Design guidance and communication
- Design
  - General communication
  - Working group
  - Local steering committee
  - AHC steering committee

Training and preparation
- Construction
  - Town halls
  - Mock ups
  - Leader and staff group training
Streamlined change process for future groups

Rapid diagnostic -> Programming

Design guidance and communication
- Design
  - General communication
  - Working group
  - Local steering committee

Training and preparation
- Programming
- Design
- Construction

- Pilot tours
- Leader and staff group training

Construction guidance and communication
- Programming
- Design
- Construction

Leader and staff group training
Preliminary Work Style Categories

**Mobile connector**
Spends half their time or less at their desk. Much of their time is spent in other spaces and locations, such as classrooms, clinical facilities, conference rooms, or offsite. They also tend to spend a lot of time with other people, both outside UM (e.g., patients) and inside UM.

**Resident connector**
Somewhat mobile, but spends at least half their time at their desk. They are interactive, and not just within their own group. Much of their interaction is across departments and schools at UM.

**Teamer**
Spends most of their time at or near their desk, although they may still spend some time in other spaces like meeting rooms, classrooms and other facilities. They are highly interactive within their own group and less interactive across departments.

**Heads down**
Individuals in this groups do most of their work at their desk. They interact some, but much of their work is heads down.
Work Style Framework – Cross space interaction

Faculty and staff working needs will be supported across multiple domains

• To what extent will workplace requirements will be addressed in teaching, research and clinical spaces?
• Where are there potential synergies between office and other domains?
• How should a teaching, research or clinical orientation influence the allocation or design of workplace?
• What is the experience visitors, students and outside partners have as part of the work environment?

Hypothetical time allocation for faculty and staff roles by setting to support workplace strategy
For many people, work will also engage people outside their immediate group

- What experience should **visitors** (partners, patients, etc.) have as part of the workplace environment?
- What experience should **students** have as part of the workplace environment?
- How can the workplace promote or regulate interactions between disciplines and schools?
Guidelines – Work style needs

Mobile Connector

Spends half their time or less at their desk. Much of their time is spent in other spaces and locations, such as classrooms, clinical facilities, conference rooms, or offsite. They also tend to spend a lot of time with other people, both outside UM (e.g., patients) and inside UM.

• What kinds of behaviors or activities will an individual workspace, whether shared or assigned, need to support or promote?

• What kinds of behaviors or activities will support spaces (secondary spaces) need to support or promote?

• What types of technologies does the work style need (personal tools, tool embedded in settings, software, etc.)?

• What are their biggest needs?
Guidelines – Work style needs

Resident Connector

Somewhat mobile, but spends at least half their time at their desk. They are interactive, and not just within their own group. Much of their interaction is across departments and schools at UM.

• What kinds of behaviors or activities will an individual workspace, whether shared or assigned, need to support or promote?

• What kinds of behaviors or activities will support spaces (secondary spaces) need to support or promote?

• What types of technologies does the work style need (personal tools, tool embedded in settings, software, etc.)?

• What are their biggest needs?
Guidelines – Work style needs

Teamer

Spends most of their time at or near their desk, although they may still spend some time in other spaces like meeting rooms, classrooms and other facilities. They are highly interactive within their own group and less interactive across departments.

- What kinds of behaviors or activities will an individual workspace, whether shared or assigned, need to support or promote?
- What kinds of behaviors or activities will support spaces (secondary spaces) need to support or promote?
- What types of technologies does the work style need (personal tools, tool embedded in settings, software, etc.)?
- What are their biggest needs?
Guidelines – Work style needs

Heads Down

_Individuals in this groups do most of their work at their desk. They interact some, but much of their work is heads down._

- What kinds of **behaviors or activities** will an **individual workspace**, whether shared or assigned, need to support or promote?

- What kinds of **behaviors or activities** will **support spaces** (secondary spaces) need to support or promote?

- What types of **technologies** does the work style need (personal tools, tool embedded in settings, software, etc.)?

- What are their **biggest needs**?
Work Style Framework – Predictive Program

- Assign work styles to office users
- Right-size and -type spaces for each work style
- Compare with current conditions

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<tr>
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<th>100</th>
<th>Work style A</th>
<th>Work style B</th>
<th>Work style C</th>
<th>Work style D</th>
<th>Work style E</th>
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# Reported UM AHC Work Groups

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<th>Executive/Manager</th>
<th>Administration</th>
<th>Staff/Support</th>
<th>Clinical Faculty</th>
<th>Basic Science Faculty</th>
<th>Teaching/Educators</th>
<th>Adjunct Faculty</th>
<th>Clinicians</th>
<th>Research Faculty/Researchers</th>
<th>Research Coordination</th>
<th>Research/Education/Oustreach</th>
<th>Wet Lab</th>
<th>Diagnostic Outreach</th>
<th>Hybrid – Teaching, Research and Clinical</th>
<th>Students</th>
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</tbody>
</table>

Source: Analysis of the card exercise conducted in AHC Collegiate Program Onsite Group Work Session #1. October 13, 2014
Work Style Development - Tools and Surveys

Phase I
- Work style survey to help allocate program requirements
- Broad characterization in four work styles
- Audience: Collegiate Program Group
- Timing: this week

Phase II
- Deeper understanding of current workplace requirements, positives and limitations
- Audience: Whole-house survey of AHC employees
- Timing: January
Clinical

4:15 – 4:25
Clinic space

What we heard

Overall
• Align clinical activity with academic mission enhancement
• State initiative for 6 locations

Learning
• Aligning learning with practice by integrating clinics
• Increase / improve clinical training in Dentistry, Nursing and Public Health
• Increase patient accessibility to existing clinics

Research
• Expand clinical trials to incorporate the full patient population across all the partner organizations

AHC Campus has

• 717 Delaware
• Dental School clinic
• Fairview Clinic
Agenda

- Goals/ Objectives
- Methodology and Approach
- Findings
- Discussion
- Next Steps

UMN
Cannon
Cannon
UMN
Goals /Objectives

- Create a 10 year plan for improving the quality and right-sizing of space based on the main programmatic drivers in academic medicine.
- Identify programmatic priorities that will increase utilization of retainable spaces while improving connectivity between programs.
- Work towards a reduction in occupied space by 20% including the elimination of obsolete facilities.
- Embed and integrate the Academic Health Center district within the University of Minnesota campus.
Vision

Systems
An efficient enterprise with an administrative structure that aligns operations in workforce, translation, outreach and clinical practice clusters

Partners
An integrated AHC market identity which leverages our strengths in our relationships with the University, State, healthcare, and other partners

Workplace
Consistency in physical space standards, with flexibility for alignment of workplace with requirements of workforce, translation, outreach, and clinical practice clusters

Facilities
A portfolio of common education spaces complemented by school focused on specialized learning faculties. A reliable and efficiently operated cluster of scientific core facilities accessible to all lab users

Campus
Realign functional adjacencies for efficiency and convenience. Create a porous and navigable campus.
Predictive program drivers

Who and what we want to be

How we make our decisions

What we want

When do we want it

Vision

Guiding Principles

Objectives

Priorities

Excellence
Impact
Innovation
Culture
Business
Identity
Collaboration
Academics
Enterprise
Workplace
Facilities
Campus
Partners
Short
Medium
Long term
Vision Implementation

University Of Minnesota AHC Strategic Facility Planning 2015

Who We Are

- Responsible Leaders
- Forward Thinking, Flexible and Fiscally Responsible
- Distinctive

Strategy Roadmap

Guiding Principles:
- Vision
- For the AHC Strategic Facilities Plan
- Responsible Leaders
- Forward Thinking, Flexible and Fiscally Responsible
- Distinctive

Vision

- Strengthen our position as a world class academic health center
- Maintain a consistent trajectory from our current state to our future state
- Raise the environmental quality of our campus and its facilities

Objectives

- An integrated 10 year facilities plan that enables us to achieve our academic objectives
- Prioritized investments to improve efficiency, productivity and quality
- Identified the physical attributes of a successful campus

Objectives

- All Missions
- Learning
- Research
- Practice

How We Will Achieve These Objectives

Strategies

- Identify common strategies, metrics and timeframes that align the mission of the AHC
- Identify changes in curriculum and pedagogy to meet local, regional and national needs
- Identify new opportunities and align with mission, funding and space needs
- Identify AHC healthcare partnership strategy

- Invest in continuous strategic facility and portfolio planning (EAM)
- Identify student success outcomes; regularly manage and monitor progress
- Create a roadmap that incorporates continuous improvement in operations, culture and technologies
- Create a continuous improvement roadmap for clinical operations and facilities on the University campus

- Provide high quality collegiate and campus amenities
- Provide the highest quality, state of the art interprofessional learning & student centric spaces
- Provide a high quality environment that attracts and retains the very best people
- Stimulate the well being of those who live, work and learn here
# Strategy Roadmap

## University Of Minnesota AHC Strategic Facility Planning 2015

### How We Do It

- **Collaborative**
  - Simultaneously local and global
  - Translational

- **Data driven solutions**
  - Sustainable
  - Productivity Metrics

### What We Do

- Vision
  - For the AHC Strategic Facilities Plan
- Guiding Principles
  - How We Make Our Decisions
- Objectives
  - What We Will Achieve

## Strategies

### How We Will Achieve These Objectives

<table>
<thead>
<tr>
<th>Mission</th>
<th>Learning</th>
<th>Research</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Missions</td>
<td>Locate functions appropriately to ensure optimum accessibility</td>
<td>Increase student accessibility to clinical learning opportunities &amp; locations</td>
<td>Increase researcher accessibility to patients, subjects and health data</td>
</tr>
<tr>
<td>Learning</td>
<td>Create common collaboration space standards across the AHC</td>
<td>Create creating professional and inter school opportunities for faculty and students</td>
<td>Implement incentives and rewards that stimulate interdisciplinary research</td>
</tr>
<tr>
<td>Research</td>
<td>Develop library as interdisciplinary hub for education, research and clinical practice</td>
<td>Improve and support digital and professional connectivity across campuses</td>
<td>Align core and animal facilities to match research need and growth</td>
</tr>
<tr>
<td>Practice</td>
<td>Enable operational effectiveness of a facility to be measured at different scales</td>
<td>Create ability to measure our operational efficiency &amp; productivity across the AHC</td>
<td>Align space allocation metrics across all schools to improve utilization</td>
</tr>
<tr>
<td>All Missions</td>
<td>Maximize existing facility capacity by improving space productivity, repurposing or removing obsolete facilities</td>
<td>Develop workplace policy, and work style analytics across the AHC</td>
<td>Maximize the capacities of research facilities and the sharing of research resources</td>
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<tr>
<td>Strategic Facility Planning</td>
<td>Continue development of predictive programming framework for leasing spaces</td>
<td>Align outcomes based metrics with space allocation and charging</td>
<td>Align clinical and academic missions while maximizing patient revenues</td>
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</tbody>
</table>
Building the Predictive Framework

Learning
Data:
– Enrollment
– Contact hours
– Utilization
– Area / Condition

Methods:
– Curriculum, Pedagogy

Research
Data:
– Expenditure
– Population
– Area / Condition

Methods:
– Processes
– Core Facilities

Workplace
Data:
– Population
– Area

Methods:
– Work Patterns
– Policies
Methodology and Approach

AHC
• 2.6m sqft net

Research
• 38% - 1m sqft – 30% Critical / poor

Education
• 21% - 675k sqft – 82% Critical / poor

Offices
• 41% - 1m sqft – 50% Critical / poor
Methodology and Approach

Existing Conditions – 50% Critical / Poor

Source: U-Space snapshot, October 29, 2014. Includes University owned properties only on the Minneapolis campus
Methodology and Approach

Learning
(Input dependent)

Student Enrollment
(by program, by year)

Contact Hours
(per week in space type)

Station Size
(# of square feet per student in space type)

Room Size
(in gross square feet)

Station Utilization
(% station occupancy)

Availability
(Total available hours per week)

Classroom Utilization
(% of available utilized)
## Learning Spaces Calculator

### Methodology and Approach

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<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total Public Health</td>
<td>0.87</td>
<td>0.36</td>
<td>4.25</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total Vet Med</td>
<td>1.43</td>
<td>0.43</td>
<td>2.12</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total AHC Shared</td>
<td>0.91</td>
<td>0</td>
<td>1.34</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>Total Count</td>
<td>9.62</td>
<td>5.74</td>
<td>50.57</td>
<td>1.05</td>
</tr>
<tr>
<td></td>
<td>Total Square Feet</td>
<td>34,648</td>
<td>20,847</td>
<td>20,229</td>
<td>1,574</td>
</tr>
</tbody>
</table>

- **Total AHC Shared** is the sum of all AHC Shared spaces for each category.
- **Total Count** is the sum of all spaces for each category.
- **Total Square Feet** is the sum of all square footage for each category.
Methodology and Approach

Research (Input dependent)

Total Expenditure (by School or Building) / Investigators (by School or Building) = Expenditure per Investigator (Productivity of Investigator based on dollars)

Total Expenditure (by School or Building) / Total Research Space (in net square feet) = Dollars per Square Feet
## Methodology and Approach

### Research

#### In Use - Bench Lab Research

<table>
<thead>
<tr>
<th>School</th>
<th>Lab</th>
<th>Office</th>
<th>Support</th>
<th>Total In Use Net Area</th>
<th>No. Of PIs</th>
<th>Total Direct Research Expenditure ($)</th>
<th>Expenditure $ / PI</th>
<th>$ / Sqft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental</td>
<td>17,900</td>
<td>8,300</td>
<td>8,000</td>
<td>34,200</td>
<td>29</td>
<td>4,637,853</td>
<td>159,926</td>
<td>135.6</td>
</tr>
<tr>
<td>Medical</td>
<td>228,700</td>
<td>70,900</td>
<td>86,800</td>
<td>386,400</td>
<td>325</td>
<td>107,488,138</td>
<td>330,733</td>
<td>278.2</td>
</tr>
<tr>
<td>Nursing</td>
<td>1,500</td>
<td>1,300</td>
<td>-</td>
<td>2,800</td>
<td>3</td>
<td>749,932</td>
<td>249,977</td>
<td>267.8</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>49,600</td>
<td>11,800</td>
<td>10,900</td>
<td>72,300</td>
<td>45</td>
<td>9,089,999</td>
<td>202,000</td>
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<td>3,900</td>
<td>1,700</td>
<td>1,200</td>
<td>3,850</td>
<td>10</td>
<td>2,379,880</td>
<td>237,988</td>
<td>618.2</td>
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<tr>
<td>Veterinary</td>
<td>300</td>
<td>-</td>
<td>-</td>
<td>300</td>
<td>1</td>
<td>127,000</td>
<td>127,000</td>
<td>423.3</td>
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<tr>
<td>AHC Shared</td>
<td>42,300</td>
<td>16,200</td>
<td>11,600</td>
<td>70,100</td>
<td>55</td>
<td>25,903,519</td>
<td>470,973</td>
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<tr>
<td>TOTAL</td>
<td>344,200</td>
<td>110,200</td>
<td>118,500</td>
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<td>468</td>
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#### In Use - Other Research

<table>
<thead>
<tr>
<th>School</th>
<th>Office</th>
<th>Other</th>
<th>Total In Use Net Area</th>
<th>No. Of PIs</th>
<th>Total Direct Research Expenditure ($)</th>
<th>Expenditure $ / PI</th>
<th>$ / Sqft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental</td>
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<td>800</td>
<td>2,400</td>
<td>33</td>
<td>5,685,010</td>
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<td>0.0004</td>
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<tr>
<td>Medical</td>
<td>32,600</td>
<td>-</td>
<td>32,600</td>
<td>116</td>
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<td>1,454,726</td>
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<tr>
<td>Nursing</td>
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<td>-</td>
<td>2,600</td>
<td>38</td>
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<td>109,162</td>
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</tr>
<tr>
<td>Pharmacy</td>
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<td>5,157</td>
<td>21</td>
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<td>710,407</td>
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<tr>
<td>Public Health</td>
<td>53,700</td>
<td>-</td>
<td>53,700</td>
<td>99</td>
<td>88,365,434</td>
<td>892,580</td>
<td>1,645.5</td>
</tr>
<tr>
<td>Veterinary</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>AHC Shared</td>
<td>6,100</td>
<td>-</td>
<td>6,100</td>
<td>34</td>
<td>65,537,685</td>
<td>1,927,579</td>
<td>10,743.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>101,500</td>
<td>1,057</td>
<td>102,557</td>
<td>341</td>
<td>$ 347,403,038</td>
<td>$ 1,018,777</td>
<td>3,387.4</td>
</tr>
</tbody>
</table>

### Total Area

- Dental: 36,600
- Medical: 419,000
- Nursing: 5,400
- Pharmacy: 77,457
- Public Health: 57,550
- Veterinary: 300
- AHC Shared: 76,200
- TOTAL: 672,507
<table>
<thead>
<tr>
<th>Facility Assessment</th>
<th>Existing Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methodology and Approach</strong></td>
<td><strong>Research</strong></td>
</tr>
<tr>
<td><strong>Condition</strong></td>
<td><strong>In Use - Bench Lab Research</strong></td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>Lab</td>
</tr>
<tr>
<td>E</td>
<td>Cancer &amp; Cardiovascular Research</td>
</tr>
<tr>
<td>E</td>
<td>Lions MTRF Research Building</td>
</tr>
<tr>
<td>E</td>
<td>Magnetic Resonance Research Center</td>
</tr>
<tr>
<td>E</td>
<td>Wallin Medical Biosciences</td>
</tr>
<tr>
<td>E</td>
<td>Medicine Research Facility</td>
</tr>
<tr>
<td>G</td>
<td>DWAM/Masonic Cancer Research</td>
</tr>
<tr>
<td>G</td>
<td>717 Delaware St.</td>
</tr>
<tr>
<td>G</td>
<td>MCB</td>
</tr>
<tr>
<td>G</td>
<td>Nih-Hasloft</td>
</tr>
<tr>
<td>G</td>
<td>Early Good Condition Overall Total</td>
</tr>
<tr>
<td>L</td>
<td>335 Delaware St. (O'nnen)</td>
</tr>
<tr>
<td>L</td>
<td>AHC Lease Space Overall Total</td>
</tr>
<tr>
<td>P</td>
<td>Dahl</td>
</tr>
<tr>
<td>P</td>
<td>Variety Club</td>
</tr>
<tr>
<td>P</td>
<td>Children's Rehabilitation Center</td>
</tr>
<tr>
<td>P</td>
<td>Weaver-Denford</td>
</tr>
<tr>
<td>P</td>
<td>Masonic Memorial</td>
</tr>
<tr>
<td>R</td>
<td>Boynton Health Service</td>
</tr>
<tr>
<td>C</td>
<td>Malcom Nicos</td>
</tr>
<tr>
<td>C</td>
<td>VFW Cancer Research</td>
</tr>
<tr>
<td>C</td>
<td>PWS</td>
</tr>
<tr>
<td>C</td>
<td>Mayo</td>
</tr>
<tr>
<td>C</td>
<td>AHC Critical Condition Overall Total</td>
</tr>
<tr>
<td>E</td>
<td>New Facility #1</td>
</tr>
<tr>
<td>E</td>
<td>New Facility #2</td>
</tr>
<tr>
<td>E</td>
<td>New Facilities Overall Total</td>
</tr>
</tbody>
</table>

**Inconsistent and not consolidated data**
Methodology and Approach

Workplace

Define work styles

Develop solutions for each work style

Determine how to organize and cluster solutions, and interconnect them with common spaces

Overarching workplace principles and goals
Findings

AHC Overall
Increased facility efficiency and productivity of the AHC depends on systematic priority initiative planning across the schools and healthcare partners.

Facilities
Facility condition is well understood, but an understanding of how it currently performs is incomplete.

Approach
Integrated and systematic facility and programmatic data gathering, analysis, management standards and implementation strategies.

Culture
Build on the vision. Values responsible, future thinking, collaboration focused on enhancing existing innovations and creating new capabilities in conjunction with its partners.

AHC Blended Strategy
Findings

**AHC**
The degree to which new methods of interprofessional learning can be supported will depend on each schools’ changing pedagogy, its integration across schools and our healthcare partners.

**Facilities**
Maximize utilization of learning environments by defining future demand and shared facility programming across AHC schools and other UMN units.

**Approach**
Create integrated facility and programmatic data gathering, with consistent utilization and timetabling standards for facility operation.

**Culture**
Align increase in shared facilities, new learning and inter-professional programs with the desire to maintain each School’s identities.

### Learning

<table>
<thead>
<tr>
<th>Method</th>
<th>Lecture</th>
<th>Active Learning</th>
<th>Small Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred Delivery</td>
<td>1.2x</td>
<td>2x</td>
<td>3x</td>
</tr>
<tr>
<td>Current Delivery</td>
<td>-0.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Square Feet: 0, 10,000, 20,000, 30,000, 40,000, 50,000
- Square Feet: 0, 5,000, 10,000, 15,000, 20,000, 25,000
- Square Feet: 0, 5,000, 10,000, 15,000, 20,000, 25,000
- Square Feet: 0, 5000, 10000, 15000, 20000, 25000

<table>
<thead>
<tr>
<th>Method</th>
<th>Simulation</th>
<th>Class Lab</th>
<th>Computer Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred Delivery</td>
<td>1.2x</td>
<td>1.1x</td>
<td>5x</td>
</tr>
<tr>
<td>Current Delivery</td>
<td>-0.2</td>
<td>2x</td>
<td></td>
</tr>
</tbody>
</table>

- Square Feet: 0, 10,000, 20,000, 30,000, 40,000, 50,000
- Square Feet: 0, 79,400, 79,600, 79,800, 90,000
- Square Feet: 0, 5000, 10000, 15000, 20000, 25000
Findings

AHC
Continue to integrate gathering and management of research operations, outputs, and facilities data

Facilities
Develop facility capacity that can sustain research. Develop adjacency priorities to support the continuum of clinical, translational, and other research.

Approach
Create common direction with agreed-upon goals for research growth, productivity measures and space allocations across the schools and our healthcare partners

Culture
Formalize productivity measures across all the schools. Integrate this into a translational flow within each school

Research

<table>
<thead>
<tr>
<th>School</th>
<th>Total Area (SF)</th>
<th># of Investigators</th>
<th>Total Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentistry</td>
<td>34,200</td>
<td>29</td>
<td>$4,637,853</td>
</tr>
<tr>
<td>Medical</td>
<td>386,400</td>
<td>325</td>
<td>$107,488,138</td>
</tr>
<tr>
<td>Nursing</td>
<td>2,800</td>
<td>3</td>
<td>$749,932</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>72,300</td>
<td>45</td>
<td>$9,089,999</td>
</tr>
<tr>
<td>Public Health</td>
<td>3,850</td>
<td>10</td>
<td>$2,379,880</td>
</tr>
<tr>
<td>AHC Shared</td>
<td>70,100</td>
<td>55</td>
<td>$25,903,519</td>
</tr>
</tbody>
</table>

Research Summary - Other Research

<table>
<thead>
<tr>
<th>School</th>
<th>Total Area (SF)</th>
<th># of Investigators</th>
<th>Total Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentistry</td>
<td>Not Available</td>
<td></td>
<td>$5,685,010</td>
</tr>
<tr>
<td>Medical</td>
<td>540</td>
<td></td>
<td>$168,748,209</td>
</tr>
<tr>
<td>Nursing</td>
<td>30</td>
<td></td>
<td>$4,148,159</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>35</td>
<td></td>
<td>$14,918,541</td>
</tr>
<tr>
<td>Public Health</td>
<td>154</td>
<td></td>
<td>$88,365,434</td>
</tr>
<tr>
<td>AHC Shared</td>
<td>66</td>
<td></td>
<td>$65,537,685</td>
</tr>
</tbody>
</table>
## Findings

### Work styles

<table>
<thead>
<tr>
<th>Connector</th>
<th>NASF/person</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOBILE CONNECTOR</td>
<td>86</td>
</tr>
<tr>
<td>TEAMER</td>
<td>119</td>
</tr>
<tr>
<td>RESIDENTIAL CONNECTOR</td>
<td>241</td>
</tr>
<tr>
<td>HEADS DOWN</td>
<td>108</td>
</tr>
</tbody>
</table>

### Work places

- **The Club.** This workspace helps re-energize faculty and staff who are always on-the-go. A mix of private rooms and shared, open workspaces ensures that mobile connectors have a comfortable, supportive and workplace.
- **The Team Space.** Teamers work best in groups, and this workspace enables informal, ad hoc work sessions as well as organized meetings. The team space provides high- and low-tech tools for collaboration and idea-sharing.
- **The Office.** A need for frequent interaction and a consistent home base characterize the faculty and staff who are Residential Connectors. This workspace has the highest degree of dedicated, personal space and lowest shared use.
- **The Quiet Station.** People who identify as Heads Down are well-supported working from an assigned quiet workstation for administrative responsibilities. Nearby open and enclosed space supports phone calls, meetings or group work.
Findings

AHC
Advance parallel paths: optimize existing space allocations and transform future policies and structures

Facilities
Provide a more diverse and flexible range of spaces to reflect what people do. Increase collaborative spaces shared between departments and schools. Increase physical and brand visibility across the AHC

Approach
Create and implement standards for allocation of space based on work styles versus hierarchy. Create standards for space provision using a catalogue of layouts.

Culture
The success of the workplace strategy implementation depends on the creation of a systematic change management process. Undertake a deep level of engagement to build support for this new approach.

Workplace

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Res. Connectors</th>
<th>Teamers</th>
<th>Heads Down</th>
<th>Net Sq. Ft. per Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
<td>195</td>
</tr>
<tr>
<td>Scenario 1</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
<td>163 (15% more efficient)</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>145 (25% more efficient)</td>
</tr>
<tr>
<td>Scenario 3</td>
<td>45%</td>
<td>15%</td>
<td>20%</td>
<td>127 (35% more efficient)</td>
</tr>
</tbody>
</table>

*Current AHC allocation
DISCUSSION
Key Questions

AHC Overall

• How can facilities recognize and support individual identity of each school within the Academic Health Center while also developing a one AHC brand/identity as a comprehensive, interprofessional enterprise of health education, research and clinical services?

Learning

• Where and how do we begin predicting a program model for interprofessional education and the required facilities? How does that impact learning environments we have today?

Research

• Can the AHC – all schools – agree to managing research space using productivity metrics?

• Where and how do we begin predicting a program model for clinical research and for clinical practice learning environments?
Key Questions

Workplace

• Can the AHC support office planning and future space allocation based on work style classifications rather than existing hierarchical and current facility state methods?

• Is the AHC and its schools willing to further co-locate administrative functions in order to decrease space while improving the quality of space? What might this look like?

Clinical

• What are the processes and systems that will integrate and optimize clinical research and learning across our schools and create a framework for incorporation into healthcare delivery partners?
Workplace Strategy
**Mobile Connector: The Club**

**Secure Club Storage**
Space for personal effects—from winter coats to computer technology—is critical to support a productive workplace for those faculty and staff who spend most of their time elsewhere.

**Privacy on Demand**
Enclaves offer private workspace for meetings with colleagues, phone calls or concentrative work.

**Informal Working**
Soft seating and a supportive environment for personal technology make for a space supports activities ranging from solo work to conversations with colleagues over a meal.

**Comfortable and Effective**
Quiet desks enable busy mobile workers to touch down and finish work (whether for half an hour or half a day) anytime day or night.
Mobile Connector: Support Spaces

The Club

Focus Booth (2-person room)

Personal Storage

Enclave (4-person room)

Unassigned Quiet Zone Desk

Open Meeting Area

Conference Rooms

Mail, Print, Copy, Supply

Social Hub and Food Service

Total NASF/Person: 86
Teamer: The Team Space

Face-to-Face Layouts
Seating orientations are designed to maximize communication and awareness.

Dedicated Collaborative Space
Meeting tables with whiteboards and projectors support spontaneous gatherings.
The Team Space

Focus Booth (2-person room) 20:1

Shared Filing 40:1

Open Meeting Area 12:1

Conference Rooms 80:1 - 200:1

Mail, Print, Copy, Supply 150:1

Unassigned Quiet Zone Desk 50:1

Enclave (4-person room) 20:1

Social Hub and Food Service 150:1

Total NASF/Person: 119
Heads Down: The Quiet Station

**Seated Height Privacy**
Mid-height panels reduce visual distractions, but still permit both visual awareness across a group and access to natural light and views.

**Front-to-Back Layouts**
Seating is oriented to minimize distractions.
Heads Down: Support Spaces

The Quiet Station

- Focus Booth (2-person room)
- Enclave (4-person room)
- Shared Filing
- Unassigned Quiet Zone Desk
- Open Meeting Area
- Conference Rooms
- Mail, Print, Copy, Supply
- Social Hub and Food Service

Total NASF/Person: 108
Residential Connector: The Office

Universal Light and Views
Offices should be positioned off the exterior walls to allow natural light to flow into internal areas. Semi-transparent fronts can help bring light into offices.

Space for Small Meetings
Room in the core workspace for Residential Connectors to conduct small private meetings with up to two guests.

Ancillary Meeting Space
Meetings involving more than three people can take place in nearby conference rooms.
Residential Connector: Support Spaces

The Office

Open Meeting Area: 40:1
Conference Rooms: 80:1 - 200:1
Mail, Print, Copy, Supply: 150:1
Social Hub and Food Service: 150:1

Total NASF/Person: 241