Agenda

> Call to Order
  - IT Governance Board Updates

> Digital Transformation

> Teaching and Learning Strategy and Initiatives
  - Support for cloud-based computing for teaching and learning
  - Preliminary planning for student systems replacement

> IT Project Portfolio Executive Review
  - Project status
  - Board of Regents reporting

> TRF Update

> Wrap up
IT Governance Board Updates

Aaron Powell
Vice President, UW-IT and Chief Information Officer
Major Discussion Topics

> Technology Recharge Fee annual review and recommendation
> Agenda topics for 2018-19
> UW Finance Transformation program
Digital Transformation

Jim Phelps
Director of Enterprise Architecture and Strategy, UW-IT
Phases of a Transformation

Phase 1
- Refine

Phase 2
- Disrupt

Phase 3
- Transform

From: Chris Eagle, U-Michigan, Itana Face2Face 2017, EDUCAUSE Annual
Replacing old with new

By the Harvard Innovation Lab
Phases of a Transformation

Phase 1: Refine
Phase 2: Disrupt
Phase 3: Transform
Waymo's self-driving cars are racking up miles faster than ever

Sean O’Kane

Photo by Sean O’Kane / The Verge

The Verge, May 10, 2017
IBM's AI can predict schizophrenia by looking at the brain's blood flow
The Apple Watch can accurately detect hypertension and sleep apnea, a new study suggests

Cardiogram and UCSF previously demonstrated the ability for the Apple Watch to detect abnormal heart rhythm with a 97 percent accuracy.

.... can detect sleep apnea with a 90 percent accuracy and hypertension with an 82 percent accuracy.
Phases of a Transformation

Phase 1: Refine
Phase 2: Disrupt
Phase 3: Transform
Washing Machines + Refrigeration = Women’s Vote

MOST COMMON JOB
If a job was in the 5 most common for a state out of a possible 569, it appears here. Each unique job gets a map. Jobs were sorted by most national to most state-specific from top to bottom.

BY FlowingData, http://flowingdata.com

Flowing Data - Most Common Jobs, By State
Driver/Sales Workers and Truck Drivers

Cashiers
Digital Transformation on the Cusp

YOU ARE HERE

Phase 1
Refine

Phase 2
Disrupt

Phase 3
Transform
Context:
Income Challenges in the US
A grim future for workers who don't learn new skills

Almost 1 million Americans will see their occupations vanish entirely by 2026

“Almost 1 million Americans will see their occupations vanish entirely by 2026”

The bottom line: In all, some 1.4 million workers... years, including 70 percent of them — 41% — will have either minuscule or no chance of finding other work

“Without new skills...41% will have minuscule or no chance of finding other work”

Axios: A grim future for workers who don't learn new skills
https://www.axios.com/workers-automation-lost-jobs-skills-2d944533-3f51-40ee-b2c0-b65e4644a9db.html
How Americans pay for unexpected expenses

How would you deal with a major unexpected expense, such as $1,000 for an emergency room visit or car repair?

- Pay the costs from your savings: 39%
- Finance with credit card, pay off over time: 19%
- Reduce your spending on other things: 13%
- Borrow from family or friends: 12%
- Take out a personal loan: 5%

61% of Households would need to borrow or cut back to pay for a $1000 emergency expense.

CNBC - Only 39% of Americans have enough savings to cover a $1,000 emergency
Selected US Consumer Goods and Services, and Wages

Source: BLS
Students are Homeless and Hungry

Study: Wisconsin Hope Lab – 43,000 students at 66 institutions
Student Loan Debt

($1,563,600,000,000)
Challenges the assumption that students will be able (or willing) to leave the workforce for 4 to 6 years to get an education.

Raises the importance of adult/ongoing education.
Digital transformation is the change associated with the application of digital design & technologies to all aspects of human society.
Design

Customer Experience Design

User-Centered Design

Plan
Research

Design

Measure
Adapt

Hyper-Personalization

Technologies

Artificial Intelligence

Big Data

Internet of Things
Customer / User Experience is Core

Customer Experience Design

Where can we delight our customers?
Where is there pain in their life that we can fix?

Hyper-Personalization

How do we deliver an easy, intuitive interface?
How do constantly adjust and improve the experience?

What is this user's context?
How do we predict what they need and put it at their fingertips?
Customer / User Experience is Core

Student Experience

Researcher Experience

Instructor Experience

Highly matrixed organization focused on delivering seamless digital experiences.
At our peers

Continuous Improvement at IT Services Jul-17-Sep-18

- 4 Projects
  - $3.3M
- 17 Projects
  - $1.4M
- 3 Projects
  - 3 Staff reallocation
  - $37,000+ hours savings
  - $40k increased revenue
- 76 Problem/opportunities
  - 154 improvements
  - 45 Service Owners
  - 60 Service lines
- 10k logged staff hours for streamlining
- 20 improvement ideas submitted

IT@UMN
INFORMATION TECHNOLOGY

BRM For All:
Coaching for Increased Competency in Relationship Building
CSG Winter Meeting
January 25, 2019

The University of Minnesota

Team assigned to each org.

HR
Enrollment Management
Advancement
Research Administration
School/College Administration (Eng, A&S)
Strategic Relations
Student Affairs
Faculty Affairs
Libraries (soon)
Continuous Improvement at IT Services Jul17-Sep18

- **Black Belt**
  - 4 Projects
  - $1.3M

- **Green Belt**
  - 17 Projects
  - $1.4M
  - 76 Problem/opportunities
  - 154 improvements
  - 45 Service Owners
  - 60 Service lines

- **Continuous Improvements**
  - 19k logged staff hours for streamlining
  - 20 improvement ideas submitted

- **Personal Improvements**
  - 398 staff yellow belt trained
  - 58 partners yellow belt trained
  - 450 Process Palooza attendees
  - 50+ campus improvements
  - 129 community members
  - 12 Lean Bench members

- **Total $2.7M savings includes**
  - 3 Staff reallocation
  - 27,000+ hours savings
  - $40k increased revenue
BRM For All:
Coaching for Increased Competency in Relationship Building

CSG Winter Meeting
January 25, 2019
Team assigned to each org.

- HR
- Enrollment Management
- Advancement
- Research Administration
- School/College Administration (Eng, A&S)
- Strategic Relations
- Student Affairs
- Faculty Affairs
- Libraries (soon)
Customer / User Experience is Core

Highly matrixed organization focused on delivering seamless digital experiences.

- Student Experience
- Researcher Experience
- Instructor Experience
Design

Customer Experience Design

User-Centered Design

Plan

Research

Design

Adapt

Hyper-Personalization

Technologies

Internet of Things

Artificial Intelligence

Big Data
Dynamo

Tim Harford tells the big story behind the way dynamos made electricity useful.

Available now
⏰ 9 minutes

BBC - 50 Things That Made the Modern Economy - Dynamo
QUESTIONS
Teaching and Learning Strategy and Initiatives

Erik Hofer
Associate Vice President for Academic Services, UW-IT

Phil Reid
Vice Provost, Academic and Student Affairs
Support for Cloud-based Computing for Teaching and Learning
Cloud-based Computing for T&L

The blurring of disciplinary boundaries and the rise of computational and data-enabled methods across disciplines results in a greater need for computing in teaching and learning. Across the UW, we see courses that need capabilities for high-end computing, often with large data volumes, high computational requirements, or the need for specialized resources.
Cloud-based Computing for T&L

Relying on student devices to meet these needs is problematic.

- Support and troubleshooting
- Data management
- Discrepancies between classroom and “real world”
- Limited ability to incorporate research tools

- Cost and access to resources
- Requirements conflicts between classes
- Reliability
- Licensing challenges
Cloud-based Computing for T&L

Cloud computing makes some things better, others worse

- Simplifies technical support issues
- Uniform access to resources
- Can grant and revoke access to specialized equipment
- Parity with “real world”
- Billing and spend management
- Security and privacy concerns
- Vendor management
- Set-up and administration

- Access to resources
- Class-specific environments
- Defined personal/school boundaries
- Real world tools
- Cost and billing
- Management of freebies
Can we use UW-IT to address these shortcomings?
Principles and Approach

- Reduce Faculty Burden
- Manage Financial Impact
- Coordinate Vendor Relationships
- Focus on the LMS
- Link Lab and Classroom
Faculty should spend minimal time worrying about the administrative overhead of setting up and operating cloud computing environments. Common tasks should be automated to the greatest extent possible and templates for common tools should be provided.
From a student perspective, a credit card must not be required to get up and running for a class. From a department and faculty perspective, a workable solution needs to provide a mechanism to actively track and manage spend, with both hard limits and, ideally, costing on a per-class, per-student, per-assignment basis.
Both major and niche cloud computing vendors will have a place in research and education at the UW. We must build and support relationships with multiple vendors. The University will benefit from coordinated relationship management so that individual faculty do not need to get involved in the unnecessary details of contracting and payment, but still can build partnerships when it is valuable to do so.
The Learning Management System (LMS) is the primary system for course operations. To the maximum extent possible, we should leverage the LMS for provisioning cloud computing services and for managing access. We should also explore mechanisms for assessment and grading through the LMS using standards such as Learning Tools Interoperability (LTI) and Caliper.
Cloud computing has the opportunity to accelerate the movement of research methodologies into the classroom. A variety of technical use cases should drive our approach to classroom support for cloud computing, including notebooks, container-based application hosting, and full cloud environments. Instructional efforts should be closely coordinated with research computing efforts to facilitate the exchange of lessons learned.
Approaching a Replacement of UW Student Systems
The student systems landscape at the UW is complex.

UW-IT runs a robust and reliable student information systems infrastructure that has been developed in-house over several decades to meet the specific needs of the University. While this system serves many of our enterprise-wide needs well, it is large, complex, and major changes require major investment.

A large number of supplemental systems in the colleges, schools, programs, and in other administrative units run other mission-critical workflows, often through close coordination with the enterprise student system.
This approach has served the University well, but we must have the discipline to examine whether this approach can continue to meet our needs in the future, amidst a set of challenges and opportunities.
Challenges and Approach
The education landscape will continue to evolve considerably over the next decade. The student body will change due to underlying demographic changes, contributing to new challenges in recruitment, retention, and student life. Academic programs will continue to innovate to meet the needs of both residential and “60-year degree” students.
The higher education Student Information System market is closely linked to the Enterprise Resource Planning market. A clear winner has not yet emerged, and the marketplace for Software as a Service supplemental systems is booming.

Much excitement about Machine Learning/Artificial Intelligence, but unclear how that influences underlying data architectures.

- Design an application architecture aligned to your business requirements by shaping a postmodern ERP strategy that considers an eventual migration to the cloud and the advantages conveyed via SaaS models like normalized spending and increased agility.
- Review your vendor roadmap to determine if future improvements will enhance, optimize and transform the institution. Use the results to form a plan to replace or renovate the entire SIS, or change out individual components that will deliver positive impact with minimal disruption.
The UW is, and will continue to be, a highly decentralized place. Our decentralization is one of our greatest strengths, but presents a challenge in finding the right balance between the ability to innovate and the efficiency that can come with centralized processes.

An ecosystem of technologies and service providers will continue to enable the student experience, but what this looks like now and in the future is poorly understood.
The current student systems ecosystem is funded through a variety of mechanisms. Many required activities do not have a clear, long-term funding mechanism associated with them.
Questions for IT Strategy Board

Support for cloud-based computing in teaching and learning

1. Costs for cloud-based computing may potentially be significant depending on the use case. To what extent should UW-IT work to develop a uniform model for funding these activities?

2. We are well positioned to support faculty that are already working with the Associate Vice Provosts for Data Science and Research Computing. What outreach activities might we consider to engage faculty that are not currently on our collective radar?

Planning for eventual student systems replacement

1. The factors identified suggest a “best of breed” or “postmodern” approach to evolving the student systems landscape. What factors might make us reconsider the approach?

2. In terms of user expectations, there is a big gap between the kind of experience that an ERP-style system can enable and one that is typical of modern consumer services. How might we approach reconciling the gap between student expectations and our traditional practices?
IT Project Portfolio
Executive Review

Aaron Powell
Vice President, UW-IT and Chief Information Officer

Erik Lundberg
Assistant Vice President, Research Computing & Strategy, UW-IT
# UW ENTERPRISE IT PROJECTS

## Project Portfolio Executive Summary - Dec 31, 2018

<table>
<thead>
<tr>
<th>Project</th>
<th>Sponsor</th>
<th>Oversight Level*</th>
<th>Overall Risk &amp; Project Health **</th>
<th>Budget Rating</th>
<th>Schedule Rating</th>
<th>Scope Rating</th>
<th>Resource Rating</th>
<th>Issues Rating</th>
<th>Actual Cost</th>
<th>Budget</th>
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<td>Destination: One (was: Clinical Transformation Program)</td>
<td>Carlos Pellegrini</td>
<td>3 - UW</td>
<td>9</td>
<td>2</td>
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<td>Finance Transformation Readiness</td>
<td>Mark Richards</td>
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<td>1</td>
<td>3</td>
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<td>3</td>
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<td>$20,200,000</td>
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<td>Advancement CRM Replacement Phase 1</td>
<td>Julie Brown Dan Peterson</td>
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<td>10</td>
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<td>2</td>
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<td>Northwest Hospital HR &amp; Labor Integration</td>
<td>Nicki McCraw</td>
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<td>2</td>
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<td>2</td>
<td>3</td>
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<td>$14,632,000</td>
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<td>Pharmacy Inventory Management System</td>
<td>Shabir Somani</td>
<td>2 - UW</td>
<td>12</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
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<td>$13,100,000</td>
<td>$14,332,000</td>
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<td>Academic Personnel Applicant Tracking System</td>
<td>Cheryl Cameron</td>
<td>2 - UW</td>
<td>5</td>
<td>1</td>
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<td>F&amp;A Space</td>
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<td>2 - UW</td>
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<td>Transportation System Improvement Project</td>
<td>John Chapman</td>
<td>1 - UW</td>
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<td>$3,060,000</td>
<td>$3,316,000</td>
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## Completed

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<tr>
<th>Project</th>
<th>Sponsor</th>
<th>Oversight Level*</th>
<th>Go Live Date</th>
<th>Project Completion Date</th>
<th>Total Project Cost ($K)</th>
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<td>Burke Museum CRM</td>
<td>Julie Stein</td>
<td>2 - UW</td>
<td>February 1, 2018</td>
<td>October 31, 2018</td>
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<td>Continuum College CRM</td>
<td>Marlon Buchanan</td>
<td>1 - UW</td>
<td>November 27, 2017</td>
<td>June 5, 2018</td>
<td>$701,000</td>
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Board of Regents Reporting
### Active Capital Projects Summary

**as of September 19, 2018**

<table>
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<tr>
<th>Project Name</th>
<th>Financial Details</th>
<th>Schedule</th>
<th>Women &amp; Minority Business Equity</th>
<th>Project Health Trending</th>
<th>Business Equity</th>
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<tr>
<td>Bill and Melinda Gates Center for CSE</td>
<td>$105.50 $105.50 $105.50</td>
<td>12/18 12/18</td>
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<tr>
<td>LMN Architects/McNamara</td>
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<tr>
<td>UW PAC Endowment Extension</td>
<td>$15.41 $15.24 $15.41</td>
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<td>Sasaki Architecture/Finamar</td>
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<td>Seismic Improvements - Phase 1</td>
<td>$17.60 $17.60 $17.60</td>
<td>6/19 6/19</td>
<td>N/A N/A</td>
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<td>Shidai/Architects and Engineers/CLARK/OBS</td>
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<tr>
<td>Naxx Sable Museum - Olson Carsky/Winoski</td>
<td>$78.70 $80.00 $78.70</td>
<td>7/19 7/19</td>
<td>$4.82 5.3%</td>
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<td>Parrington Hall Renovation - INTEGRTE Architecture PSI/Albair</td>
<td>$20.00 $20.00 $20.00</td>
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<td>N/A N/A</td>
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<td>Population Health Facility</td>
<td>$250.00 $230.00 $230.00</td>
<td>9/30 6/30</td>
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<td>Miller Hill Partnership C/L</td>
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<td>Kline Hall Psychology Renewal 2017-2023</td>
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<td>6/20 6/20</td>
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<td>Perkins/WHS/Gruski</td>
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<td>NIH Childbirth Center Zucker/Gruskin</td>
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<td>Architects/ARTIKTTI</td>
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<td>NCI Phase IV(b) Deeney Field, Haggard &amp; Oake Halle</td>
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<td>Foster School Expansion - LMN Architects/Hoffman</td>
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<td>Health Sciences Education Buildings/</td>
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<td>N/A N/A</td>
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<tr>
<td>Totals</td>
<td>$770.03 $771.08 $770.03</td>
<td>10.07 4.9%</td>
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*All Dollars in Millions

*Includes CON/WEB certified and self-identified Women and Minority businesses

**Targets**

- **Budget**: Budget is equal to or greater than forecast (1% Tolerance)
- **Funding**: Funding is equal to or greater than forecast (1% Tolerance)
- **Schedule**: Forecast is equal to or superior than Target (14% Tolerance)
- **Safety**: Total Recordable Incident Rate of 2.5 or lower
- **Business Equity**: On track for utilization of 10% or Higher

**Notes**

1. Project General Contractor is largely complete and business equity goals cannot be met with remaining spending.
2. Discovery of existing hazardous materials requiring abatement will result in a schedule extension.
3. Project budget and funding will be reevaluated during existing building modifications and site improvements phase.
4. Forecasted permit review times from the City are longer than anticipated.
QUESTIONS
Technology Recharge Fee
FY 2020

Bill Ferris
Chief Financial Officer, UW-IT
What is the Technology Recharge Fee?

> The Technology Recharge Fee (TRF) is a per capita fee paid by all UW academic and administrative units.

> This fee supplements central funding to provide basic technology services for all campuses and the medical centers.

> Annual review by the Service Investment Board.

> Review and recommendation by the TRF Advisory Committee.

> Approval by Provost.

> Represents ~20% of UW-IT Operating Budget.
TRF Advisory Committee Members

> Bill Ferris, UW Information Technology, Co-Chair
> Linda Rose Nelson, College of Arts & Sciences, Co-Chair
> Maureen (Mo) Broom, UW Medicine
> Jason Campbell, Planning & Budgeting
> Kelly Campbell, School of Pharmacy
> Gary Farris, School of Dentistry
> David C. Green, School of Medicine
> Tim Rhoades, UW Bothell
> Barbara Wingerson, UW Facilities
> Ex Officio (non-voting):
  Betsy Bradsby, Research Accounting & Analysis
## TRF Rate History

<table>
<thead>
<tr>
<th></th>
<th>FY11*</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
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<tr>
<td>Medical Center**</td>
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<td>$53.43</td>
<td>$53.43</td>
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<td>Campus*</td>
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<td>$52.68</td>
<td>$52.68</td>
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<td>$55.51</td>
<td>$56.13</td>
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**Rebalancing of Rate**

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<th></th>
<th>1%</th>
<th>.6%</th>
<th>0%</th>
<th>2%</th>
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</thead>
</table>

* Supplements existing GOF/DOF resources to provide Basic Services

** Excluded from GOF/DOF Subsidy: Network & Telecom billed separately to Medical Centers resulting in an effective rate: ~$85

The initial TRF coincided with a $20/month reduction of the Dial Tone rate, a $6M annual savings to campus
FY 2020 Technology Recharge Fee

> No increase to overall funding to UW-IT
  – Modest change to each rate based on cost allocation by service

> Maintain fundamental cost allocation methodology used for prior TRF

<table>
<thead>
<tr>
<th>TRF Monthly Rate</th>
<th>FY19</th>
<th>FY20</th>
<th>$ Increase</th>
<th>% Increase</th>
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</thead>
<tbody>
<tr>
<td>Med Center Employee*</td>
<td>$52.20</td>
<td>$51.75</td>
<td>-$0.45</td>
<td>-0.8%</td>
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<tr>
<td>Campus(s) Employee Admin/Academic</td>
<td>$57.28</td>
<td>$57.53</td>
<td>$.25</td>
<td>0.4%</td>
</tr>
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</table>

*Excluded from GOF/DOF Subsidy; Medical Centers Network & Telecom billed separately. Effective Medical Center rate ~$85.00
QUESTIONS AND DISCUSSION