

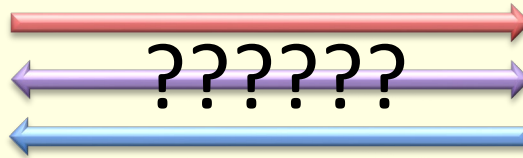
# Data Governance at a Public Research Institution: The Long & Winding Road

Constance Pierson, Ph.D., Associate Vice Provost, IRADS  
Michael Glasser, Director of Decision Support, IRADS

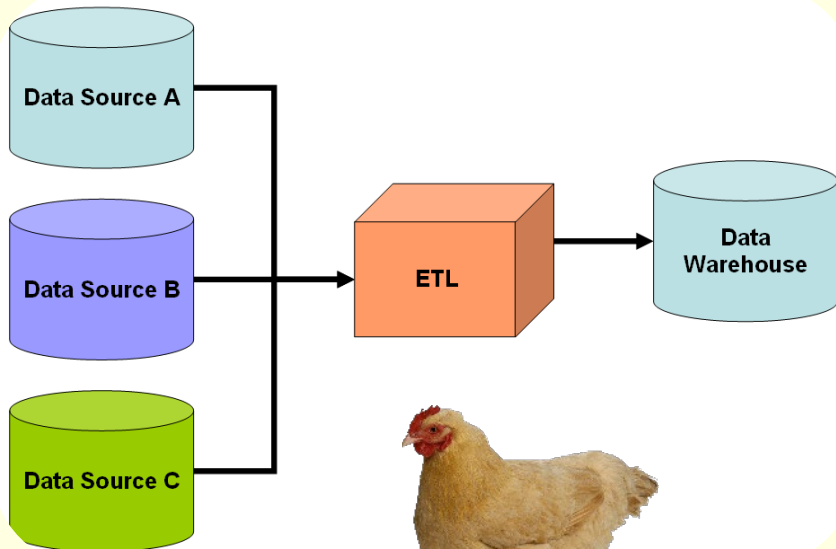
Presented at the 2018 Purdue Data Summit  
November 7, 2018

## ...the chicken or the egg?

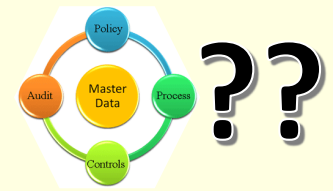
WAREHOUSE



GOVERNANCE



# Started with the egg....



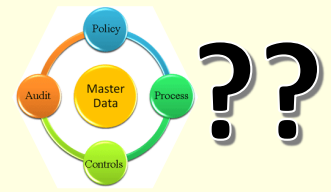
2001 project start– replace legacy HR & Finance w/ PeopleSoft (also purchased PS DW)

2002  
IR Director and Data Administrator form Data Management Council

2003 PS goes live with HR and Finance, *no data warehouse*, IR separate database

DMC  
1.0  
Fizzles

# DMC 1.5



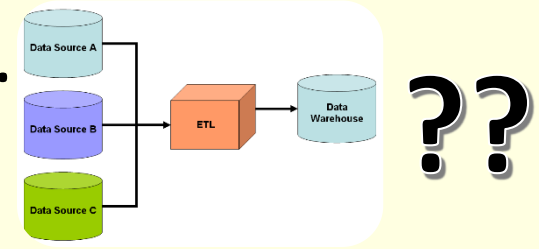
2007 Project start – replace legacy SIS w/ PeopleSoft Student Administration

IT planning to implement DW  
IR planning to build DW for official reporting

Reconvene DMC (1.5)  
(joint IR and IT effort)

DMC 1.5  
Fizzles

So we tried starting with the chicken...  
...a change in strategy



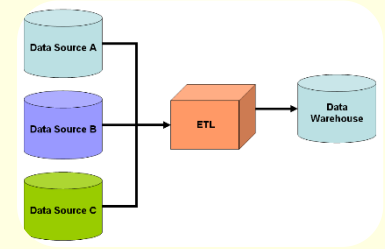
2008

DoIT and IR developed a shared vision for analytics and reporting

2009 DoIT and IR partner on a new data warehouse (REX) for UMBC

IR official reporting would be done from DW without significant manipulation of data

**All** reporting in PeopleSoft would be through the DW



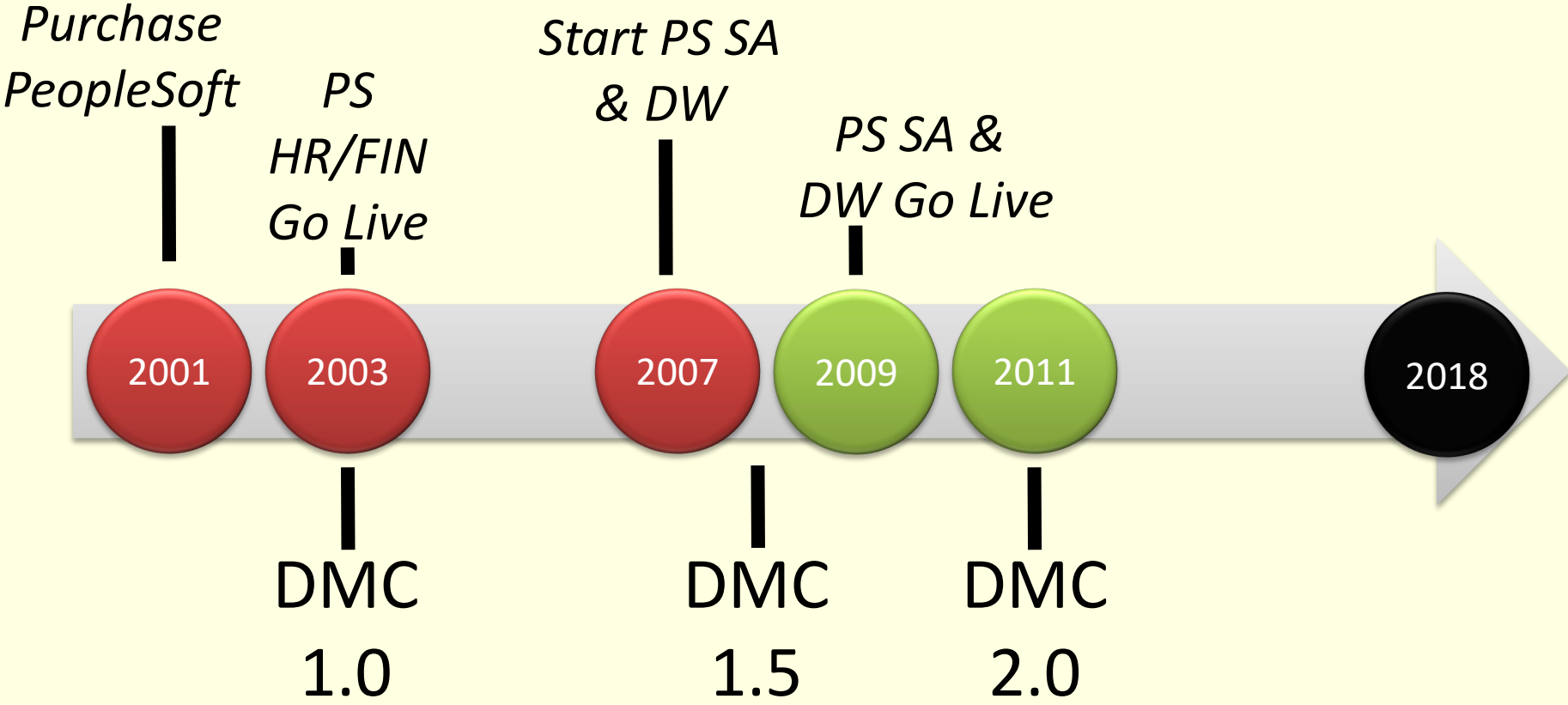
??

Data was an institutional resource, managed by the units

Data Governance was everyone's responsibility and had to be more organic – thus owned by all

2011  
DMC 2.0

# To Summarize:

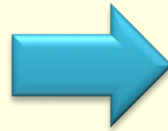
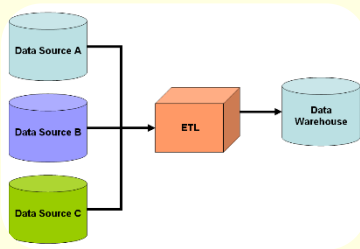


# Why didn't prior DMCs work?

- DMC 1.0 was a one-shop effort
- DMC 1.5 was led by IT & IR, but we had not developed a shared vision for data.
- UMBC had not developed a robust analytics & reporting infrastructure so there was no urgent need driving data governance.
- DMC was too high level - most VP's and Deans had no concept of data management and thought the meeting a waste of time.
- Result – DMC fizzling



## SINGLE DW



## DMC 2.0



## Key Points:

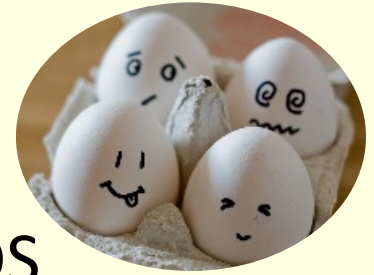
- We had to have the single DW structure in place for people to understand what data governance was and how it would work.
- Governance structure grew organically.



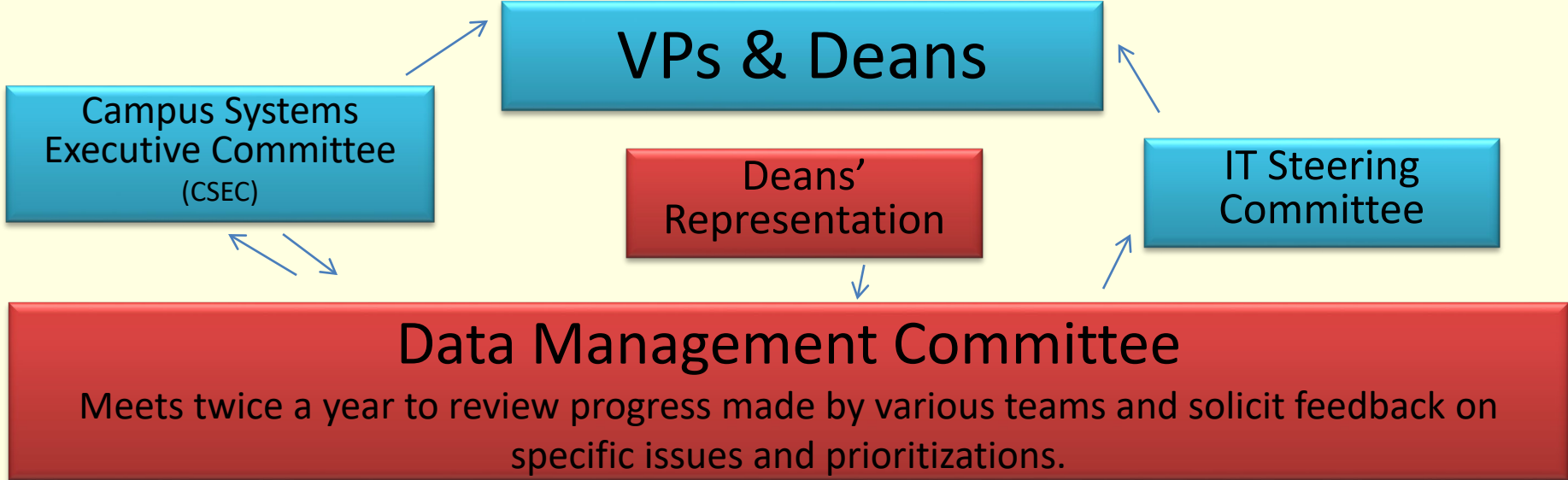
## Collaborative Data Warehouse & DW Team

- IT and IR meet weekly, but communicate daily
- IR has IT level privileges to make changes to the data warehouse
- We are all fun people – personalities matter!
- We share the data request queue, so both IT and IR see all data and DW related requests

# DMC 2.0



- Data Management *Committee* (not Council)
- chaired by the VP of IT and Assoc. VP of IRADS
- meets twice yearly (or tries to)
- consists of data stewards rather than division executives
- serves as a mechanism to share information on major plans for expansion and works to make certain that the data warehouse is supporting the needs of the units, especially those in the academic units
- meetings highlight what has been done or is near completion and work to solicit feedback on what else is needed
- DMC support feeds policy & strategy through data governance structure



Data Warehouse Team	REX User Group	Data Quality Team	Data Access & Security Team	Setup Tables Team	Training Team
<p>Assigns REX tickets, manages changes to data warehouse &amp; reporting environment.</p>	<p>Informal meeting to discuss users needs and specific reports. Could be used to discuss training options.</p>	<p>Comprised of data managers from various functional offices to develop and monitor data integrity processes.</p>	<p>Manages access to and security levels in PS and REX, including confidentiality issues.</p>	<p>Manages changes to plans and subjects as the rollups to orgs, colleges, etc.</p>	<p>Manages training material for both SA and REX</p>
<p>Convener: Director of DS</p>	<p>Convener: Director of BI</p>	<p>Convener: Director of DS</p>	<p>Convener: Director of SA</p>	<p>Convener: Registrar's Office</p>	<p>Convener: Director of BI</p>

# Description of DMC Teams

Data Warehouse Team	REX User Group	Data Quality Team	Data Access & Security Team	Setup Tables Team	Training Team
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<p>Oversees Data Warehouse plans for the campus</p>	<p>Bi-weekly campus support brown-bag meetings</p>	<p>Review data quality issues – key functional areas involved</p>	<p>Manage security to PS and REX, including FERPA acknowledgment</p>	<p>Meets when major changes occur</p>	<p>Provides periodic training to campus</p>



## Campus Systems Exec Committee

- made up of IT, IR, and functional offices (Finance, HR, Registrar, Enrollment Management).
- meets bi-weekly and chaired by VP of IT and Vice Provost for Enrollment Management.
- sets priorities for projects and develops recommendations to VPs & Deans for budget

## IT Steering Committee

- chaired by the VP of IT and Vice Provost for Academic Affairs.
- part of University governance plan of organization, approves policies for data access before going to governance groups and President. IT Steering also is essential in reviewing actions that might impact the faculty.

## VPs and Deans Council

- chaired by the Provost & Senior VP.
- VP of IT is a member of this council and is the liaison to the CSEC and IT Steering Committee for bringing issues or requests to the full Council.

# We all speak the same language...

- Single DW (REX) serves the entire campus and integrates data from systems throughout UMBC.
- REX provides both transactional and official data, and reports are written for both using the same tools and data tables.
  - There's no “your numbers vs. my numbers”
  - Data freeze/ census reporting more efficient and timely
  - Know what is happening before the freeze, which allows us to tackle data quality issues
  - One report serves two purposes - both live and frozen information
  - One suite of software serves all
  - Less duplication of effort
  - Greater efficiency / collaboration on best practices

# and we share the same language...

- Use the Data Cookbook to collect descriptions and definitions for reports, tables and fields used within REX. This software is also used by our state Higher Ed commission. (Work in progress).
- Developed a data dictionary for student data in our undergraduate cohort and cohort term tables, which has facilitated exploration of data on student success.





# Focus on Data Quality...

## Data Quality Team

### Modules:

- Campus Community
- Admissions
- Student Records
- Human Resources
- Facilities Management
- Institutional Research
- Data Warehouse

Student Records		82
▣ CORE		12
▣ DEG		14
▣ FA		1
▣ LRC		9
▣ PLAN		15
▣ REG		9
	<a href="#">Student is only enrolled for course with Subject = GRAD [199]</a>	
	<a href="#">Student enrolled in an unknown class [200]</a>	
	<a href="#">Discrepancy between Withdraw Code and Withdraw Date [220]</a>	
	<a href="#">Cumulative GPA is out of range [267]</a>	
	<a href="#">Term GPA is out of range [268]</a>	
	<a href="#">Census date is blank for term [295]</a>	
	<a href="#">Term activated UG student has a future application [296]</a>	
	<a href="#">UG Degree Plan/SubPlan HEGIS code already granted within AY (diff degree) [297]</a>	
	<a href="#">UG Degree Plan/SubPlan HEGIS code already granted within AY (same degree) [298]</a>	

For more on data quality at UMBC, see [Reporting Data Quality Issues](https://rex.umbc.edu/about/presentations/Reporting%20Data%20Quality%20Issues) , found at <https://rex.umbc.edu/about/presentations/>

# Governance built into data access...



## Welcome to REX

REX is the reporting and decision support environment for UMBC's data warehouse. The UMBC data warehouse integrates data from systems throughout UMBC. REX allows authorized faculty, staff, and institutional researchers to report and analyze University data. REX provides a few ways for reporting data from the data warehouse.

### Guided Reports

Pre-written reports which allow authorized users to change options to suit their needs.

To run the reports on Windows use Internet Explorer.

To run the reports on Mac use Firefox.

For more information on browser support click [here](#).

[ Remember to put "adl" before your myUMBC user id ... adljohndoe]

### Exploratory Analysis

Advanced users can explore the data warehouse and create their own reports. This requires additional training and authorization, and is not intended for the casual user.

To run the reports on Windows use Internet Explorer.

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### Data Dictionary

An off-campus service (currently Data Cookbook) that allows REX to collect descriptions and definitions for reports, tables and fields used within REX. Their web site will use UMBC

## Use Data Responsibly

[What is Acceptable Usage?](#)

[Request access to REX Data Request](#)

## Helpful Guided Reports

[REX Guided Reports](#)

- [My Report History](#)
- [Most Popular Reports](#)
- [Recently Added Reports](#)
- [List of Reports \(A-Z\)](#)

## REX News

[REX Finance Sponsored Account Reports NOW AVAILABLE!](#)  
March 13, 2018 10:46 AM

[New REX report for Extracurricular Interest](#)  
March 5, 2018 12:51 PM

[New REX reports for grade distribution](#)  
February 27, 2018 12:16 PM

[Back to Back Classes report renamed to Class Time Conflicts](#)  
February 13, 2018 1:21 PM

[New REX report : Curricular Interdependency Matrix](#)  
February 5, 2018 3:31 PM

Click here  
to get  
access to  
the data  
warehouse

Governance built into data access...

# REX Access Form

To request access to REX, please complete and submit this form in its entirety. An RT ticket will be created and a copy will be sent to your email. Requestor's access level will be determined based on all information provided. If you have questions about this form, please contact Dr. Yvette Mozie-Ross, Vice Provost for Enrollment Management and Planning, at [mozie@umbc.edu](mailto:mozie@umbc.edu) or x53799.

UMBC complies with the Family Educational Rights and Privacy Act (FERPA). In general, FERPA serves to protect the privacy of student education records. Specifically, FERPA limits the release of any information from a student's education record without prior written consent from the student. FERPA allows for the disclosure of those records, without consent, to school officials with legitimate educational interests. For more information on FERPA visit <http://registrar.umbc.edu/services/records/privacy-and-the-release-of-education-records/>

Requester: Constance Pierson [redacted] email: [krach@umbc.edu](mailto:krach@umbc.edu)

\*Position Title:  \*Department:

\*Phone:

\*My position involves the following administrative role or support thereof:

### II. Access Levels (check all that apply)

- Guided Reports [?](#)
- Exploratory Analysis [?](#)
- Access to anonymized data for analysis [?](#)
- Guided Report Developer [?](#)

Most users

### III. Department Chair/Director Contact

Requests for access to REX must be approved first by the requester's department chair/director. Please provide the following information for your department chair/director. The department chair/director will be cc'd on this request and must respond with approval before access will be considered.

\*Department Chair/Director Name:

\*Email:

\*Phone:

### IV. Student Data Confidentiality Acknowledgement

I understand that if granted access to REX, I will have access to non-public student information that is protected under the Family Educational Rights and Privacy Act (FERPA). For more information on FERPA visit: <http://registrar.umbc.edu/services/records/privacy-and-the-release-of-education-records>. In accordance with FERPA, I understand that I am expected to use, store and (if authorized) share the data responsibly to ensure the protection of student data and, where appropriate, student confidentiality. I further understand that my use of this data is limited strictly to the purposes outlined by me in section one of this form. If my role at the university should change and this change in responsibility does not require access to student data, I understand that I am expected to notify the REX administration immediately by submitting an RT ticket.

\*Accept Terms?  I agree to the above statement.

\* = Required field.

FERPA compliance

Governance  
built into  
data  
access...



HOME GETTING ACCESS ▼ GETTING HELP ▼ DATA REQUEST REPORTING ▼ ABOUT ▼

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### Exploratory Analysis

Advanced users can explore the data warehouse and create their own reports. This requires additional training and authorization, and is not intended for the casual user.

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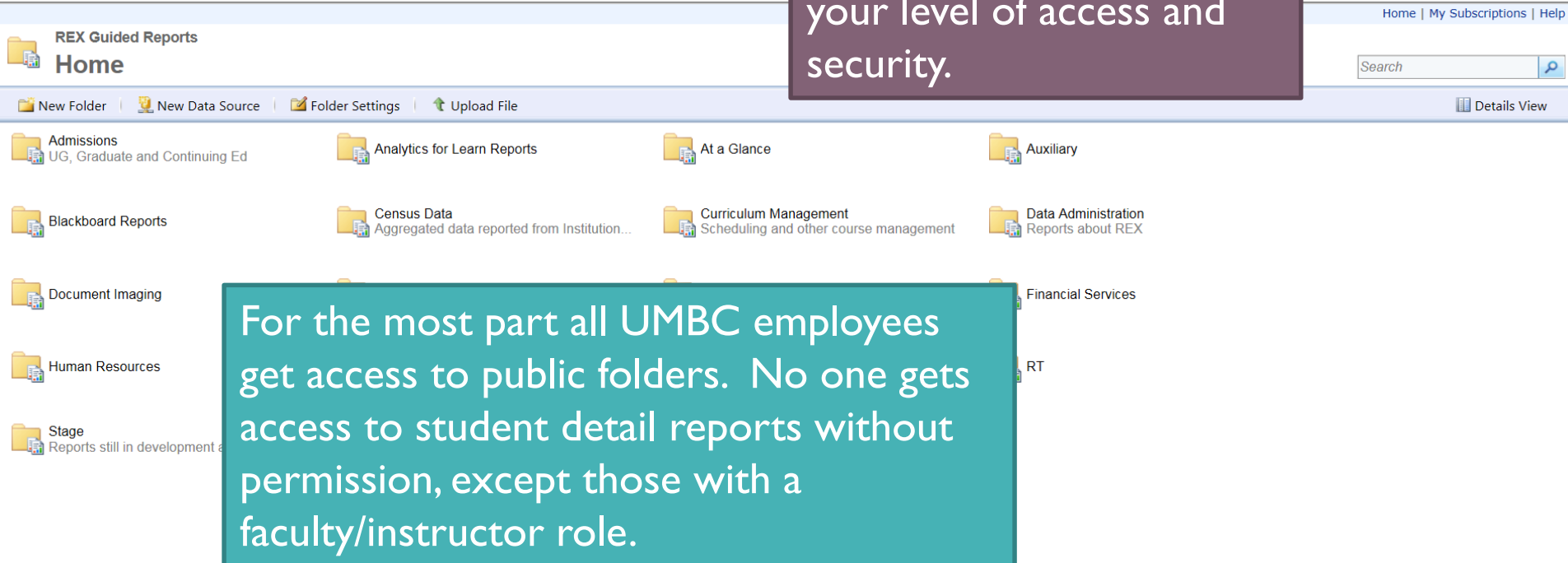
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February 13, 2018 1:21 PM

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February 5, 2018 3:31 PM

This is the  
portal to  
REX reports

When granted access to REX, clicking on Guided Reports takes you to this screen:

The folders and subfolders you see are dependent on your level of access and security.



The screenshot shows the 'REX Guided Reports Home' interface. The top navigation bar includes 'Home | My Subscriptions | Help' and a search box. Below the navigation bar, there are several folders and subfolders, each with a small icon representing a report or data source. The folders are arranged in a grid-like fashion. The folders visible are:

- Admissions (UG, Graduate and Continuing Ed)
- Analytics for Learn Reports
- At a Glance
- Auxiliary
- Blackboard Reports
- Census Data (Aggregated data reported from Institution...)
- Curriculum Management (Scheduling and other course management)
- Data Administration (Reports about REX)
- Document Imaging
- Financial Services
- Human Resources
- RT
- Stage (Reports still in development)

For the most part all UMBC employees get access to public folders. No one gets access to student detail reports without permission, except those with a faculty/instructor role.

With access to a report, user can see data for any department (no row level security).

Governance  
built into  
data  
access...

The screenshot shows the REX website homepage. At the top, there is a header with the REX logo and the tagline "Helping U Make Better Choices". Below the header is a navigation menu with items: HOME, GETTING ACCESS, GETTING HELP, DATA REQUEST, REPORTING, and ABOUT. A callout bubble points to the "DATA REQUEST" menu item with the text "Click here to make a data request". The main content area is divided into several sections: "Welcome to REX", "Guided Reports", "Exploratory Analysis", "Institutional Research, Analysis & Decision Support", "REX Finance", and "Data Dictionary". On the right side, there are two red banners: "Helpful Guided Reports" and "REX News". The "Helpful Guided Reports" section lists "REX Guided Reports" with links to "My Report History", "Most Popular Reports", "Recently Added Reports", and "List of Reports (A-Z)". The "REX News" section lists several news items, including "REX Finance Sponsored Account Reports NOW AVAILABLE!", "New REX report for Extracurricular Interest", "New REX reports for grade distribution", "Back to Back Classes report renamed to Class Time Conflicts", and "New REX report : Curricular Interdependency Matrix".

# REX

Are my students performing better than average?  
Who are my students?  
What is my college retention rate?  
How do I answer this survey?  
How are we doing this year?  
Who? Why? How?

Admissions >> Enrollment >> Degrees

## Helping U Make Better Choices

HOME GETTING ACCESS GETTING HELP DATA REQUEST REPORTING ABOUT

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# REX

Admissions >> Enrollment >> Degrees **Help**

HOME

GETTING ACCESS ▾

GETTING HELP ▾

## Data Request

I am employed by UMBC and seeking:

Use

Help with a REX report	<a href="#">REX Reporting Request form</a>
Counts of Students or Employees	<a href="#">IRADS Request form</a>
List or Contact Information of Students	<a href="#">Enrollment Management Student Request form</a>
List or Contact Information of Employees	<a href="#">Human Resources</a>

I am NOT employed by UMBC and seeking:

Use

Counts of Students or Employees	<a href="#">IRADS Public Request form</a>
List or Contact Information of Students	<a href="#">Public Info Request form</a>
List or Contact Information of Employees	<a href="#">Human Resources</a>

Requests for changes to REX reports or new REX reports

Requests for official data from IRADS or questions about data

Detail record level data must be provided by data stewards

REX

Helping U Make Better Choices

410-455-2111

UMBC

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# QUESTIONS?

Constance Pierson, Ph.D., Associate Vice Provost, IRADS  
[krach@umbc.edu](mailto:krach@umbc.edu)

Michael Glasser, Director of Decision Support, IRADS  
[mglasser@umbc.edu](mailto:mglasser@umbc.edu)