The Power of Metrics in Research Administration

Webinar

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Jim Luther
Assoc. VP Finance, Sponsor Liaison and Compliance Officer
Duke University
james.luther@duke.edu

Kerry Peluso
Assistant Vice President for Research Administration and Finance
Florida State University
kpeluso@fsu.edu

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Session Description

- Over the past decade, many institutions have invested in institutional systems that can be leveraged to support metric analysis. Duke University is one of these universities and they have built a comprehensive structure for utilizing their data to support, build, and manage their operations. At Duke University, they have institutional systems for proposal submission, purchasing, travel, ledger, closeout, post-award processes, training, etc. The data from these systems is integrated to create monitoring metrics for cost-transfers, effort reporting, and other compliance requirements and is now available for data mining, analysis, and visualization to support the research mission and faculty more effectively. The integrated data supports improved compliance, business operations, workload management and more at the department, school, and institutional levels.

Objective

- Learning Objectives:
  - Participants will be able to describe how a university can utilize data to support, build, and manage their operations.
  - Participants will learn ways that integrated data can support **improved compliance, business operations and workload management**.
  - Participants will understand some methods that other institutions are utilizing to gather, report, and share metrics.

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Today's Discussion

- Brief review of key points of Metrics
- Diving in to learn about a comprehensive structure for research administration metrics
  - Duke University

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The Power of Metrics in Research Administration

KEY POINTS:
RESEARCH ADMINISTRATION METRICS

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Research Administration Metrics

- What is a metric?
- What is a Key Performance Indicator (KPI)?

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What Gets Measured…

- Awareness demands attention and creates focus
- Allows clear goals to be set
- Drives performance

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Transparency

- Share results
- Set expectations
- Acknowledge
- Recognize
- Drives Performance

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Metrics for Research Administration

- **Statistics:** #/$ of awards, proposals, expenditures, reports , invoices; # of subawards processed, # of cost transfers;
- **Time Measurements:** Contract negotiation time; award setup time; response time;
- **Ratios:** Cash collection; workload;
- **Feedback:** Satisfaction Surveys; Other feedback methods;

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A Well-Built Structure for Metrics

- Communicates to staff where focus should be directed
- Provides staff with the opportunity to be recognized for accomplishments and achieve goals that will “really matter”
- Emphasizes priorities and progress to customers
- Communicates reality
- Supports the goals of the organization

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Largest Mistakes Made With Metrics

- Not developing an organized structure for which metrics are captured and simply gathering/reporting what you can
- Believing that we can capture any metric we want
- Providing the metrics because we can get them easily get from our system
- Developing metrics for many areas and expecting success across the board
- Not carefully evaluating and communicating what a metric means

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How are metrics captured and shared

- Via
  - ERP Software
  - Routing Systems
  - Help Desk Software
  - Survey Software
  - Other sources including Access Databases, Excel Spreadsheets or even in manual logs
- Shared via reports, dashboards
  - Often using software such as Tableau, Endeca, OBIEE or other business intelligence/analytics software

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DUKE UNIVERSITY
A MODEL FOR METRICS

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Key Point

"Not everything that counts can be counted, and not everything that can be counted counts."

– *Albert Einstein*

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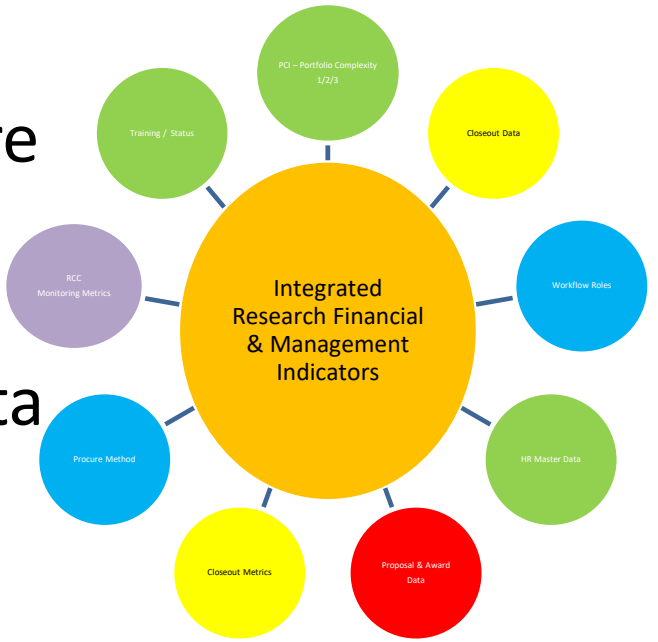
Structure Examples Integration Summary

Agenda

- Structure & Infrastructure
- Examples
- Integration of Metric Data
- Summary



16

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Structure
Examples
Integration
Summary

Integrated Research Financial & Management Indicators

Fitting the Puzzle Pieces Together

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17

Structure
Examples
Integration
Summary

DUKE OVERVIEW & STRUCTURE

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Structure
Examples
Integration
Summary

Background

Research Admin at Duke

- Research Funding:$1B ($650 Federal) and 10,000 projects
- Decentralized Post-award (1 office) and Pre-award (3 offices) / Approximately 600+ GM's & "Ghosts"
- "New" and Evolving Systems with Workflow, Status Transparency, and Operational & Management Reporting
  - Lots of data points from many, many systems…
- Foundation
  - Leadership support (RACI): very engaged…
  - Desire for accountability & transparency
  - IT Infrastructure – SAP & Tableau (data visualization)
- Progress has been a combination of "Evolution" and "Revolution"

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Structure
Examples
Integration
Summary

Performance Metrics in Research Administration

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Structure
Examples
Integration
Summary

Performance Metrics in Research Administration

- Vision
  - **Integrate** the expanding breadth of data to support management and operational reporting at the dept., school , and institution level
  - Evolving model
    - Compliance
    - Reactive
    - Diagnostic (Root Cause)
    - Predictive (Algorithm Based)

- Objectives: *(Short term / Long Term)*
  - Financial Management
  - Workload Management
  - Leadership Reporting
  - Internal Control and Compliance Management
  - HR Management (including training & performance management)

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THE "EVOLUTIONARY" AND "REVOLUTIONARY" GROWTH OF THE USE OF METRICS

- **EVOLVING MODEL**
  COMPLIANCE
  REACTIVE
  DIAGNOSTIC (ROOT CAUSE)
  PREDICTIVE (ALGORITHM BASED)

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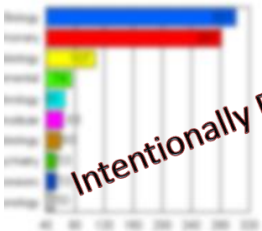
Evolution / Revolutionary Phases

Structure
Integration
Examples
Summary

Phase 1



Intentionally Blurry

Cost Transfers

2007

RCC Data Points
(Institutional
Compliance Focı
Top 10 Lists)

Intentionally Blurry

Phase 2

PCI

Evolving RCC Data
(Root Cause)

2015

Data with
Root Cause;
Tableau for
Visualization;
Some
Integrated
Datasets

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Phase 3

KIBCE

Future

Fully
Integrated,
Interpretive
& Predictive

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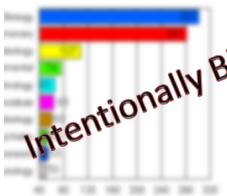
Evolution / Revolutionary Phases

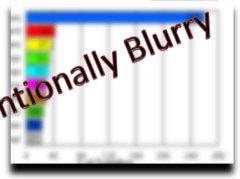
Structure
Examples
Integration
Summary

Phase 1



2007

Cost Transfers



RCC Data Points (Institutional Compliance Focus / Top 10 Lists)

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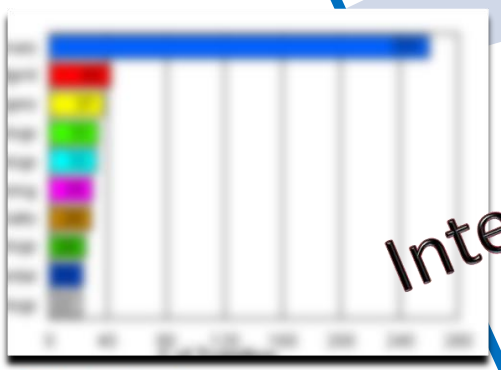
24

Evolution / Revolutionary Phases

Structure
Examples
Integration
Summary

Phase 1



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Structure
Examples
Integration
Summary

Evolution / Revolutionary Phases

Phase 2

2015

PCI Evolving RCC Data (Root Cause)

Data with Root Cause; Tableau for Visualization; Some Integrated Datasets

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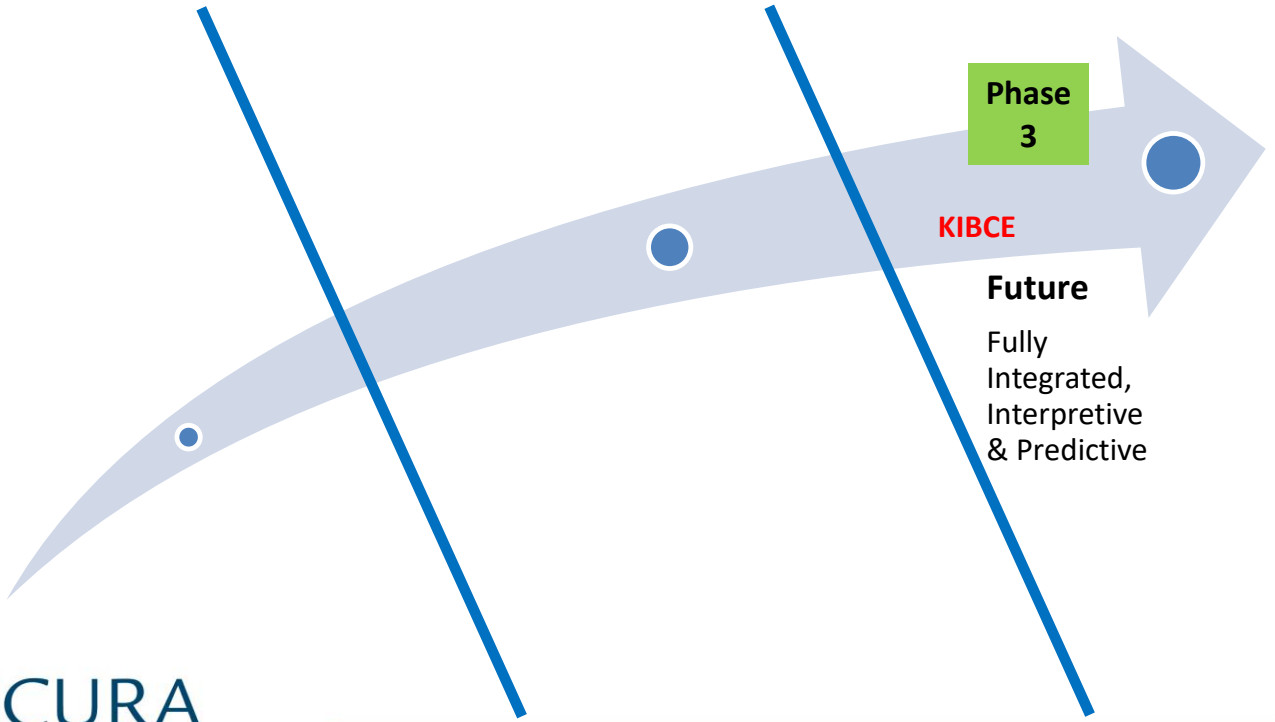
Structure
Examples
Integration
Summary

Evolution / Revolutionary Phases



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Structure
Examples
Integration
Summary

Research Costing & Compliance (RCC)

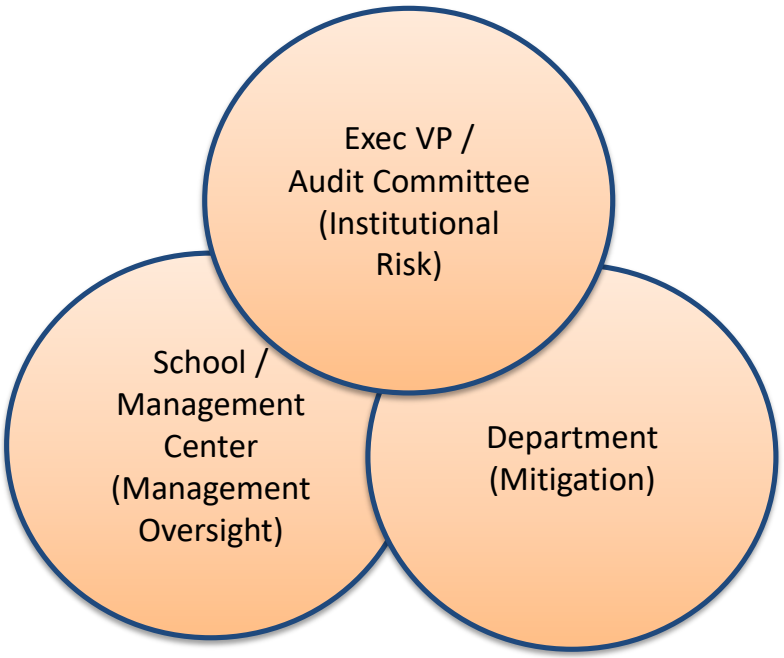
- The Office of Research Costing Compliance (RCC) constantly monitors the state of financial research compliance at Duke University. Through analysis of financial data and with input from the Management Centers, RCC Monitoring provides both targeted input and assistance in remediation of risk issues.

- **Approach to Compliance Management (MIR)**
  - **M**onitor: Assessment of Current Status through data collection and analysis
  - **I**ntegrate: RCC strives to integrate monitoring with measures that mitigate risk to Duke University. RCC therefore coordinates basic data monitoring with:
    - Education and Training
    - Communication
    - Policy and Procedure review
    - Review/Enhancement of System/Internal Controls
  - **R**emediate: Achieved through:
    - Regularly scheduled meetings with Management Centers
    - Enhanced reporting in response to Management Centers and RCC identified needs
    - Collaborative work with University IT groups to achieve technology solutions
    - Comprehensive training and updates for grant managers
    - Direct intervention in departments (answering departments' requests for training and clarifications)

28

Structure
Examples
Integration
Summary

Monitoring - Tiered Strategy

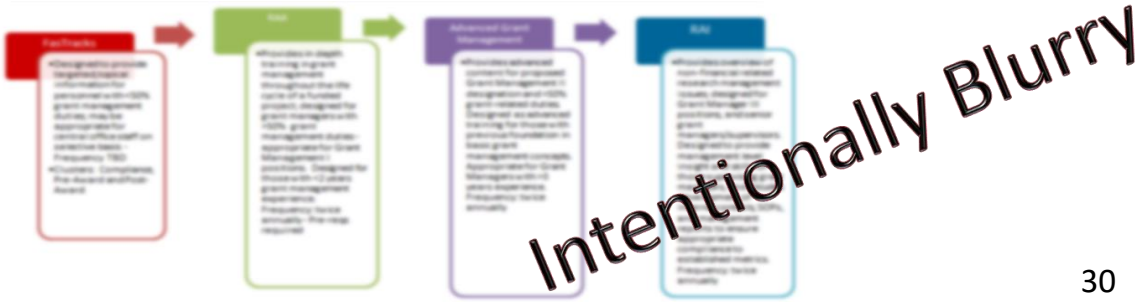


29

Structure
Examples
Integration
Summary

Research Costing Compliance (RCC) Training

- Mandatory Compliance Education (PI, GM, BM)
- AAR Training (Allowability, Allocability, & Reasonableness) - to support technology rollouts and front-end controls
- Certification Programs (based on HR Classification)
  - Includes: comprehensive testing, mentors, lead trainers, class projects
- FasTracks – Content specific classes
- Symposium – 500+ staff members in day-long breakout sessions



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30

EXAMPLES OF METRICS

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Structure
Examples
Integration
Summary

Evolution…RCC Metrics

(Cost Transfers)

Institutional Level Data

- Supports Risk awareness and management to leadership / Board

Dept'l Level Data

- Departments: Top and Bottom 10 Reporting
- Red-Yellow-Green Reporting

School Integration

- Inclusion into Monthly Risk Mtg & SOM Report Card

Detailed Reporting

- Actionable Reports by GM, BM, PI, Dept, etc.

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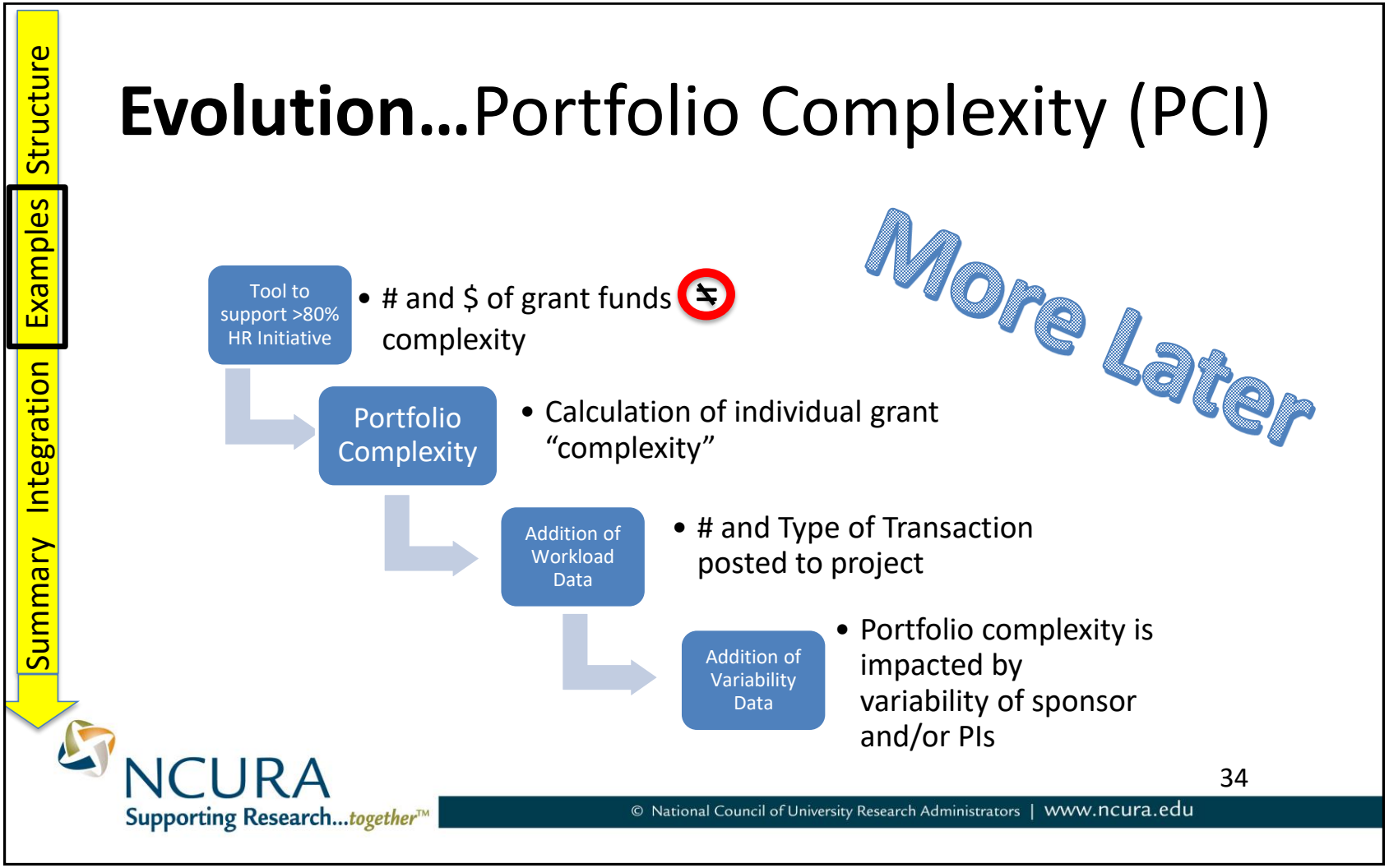
Structure | Examples | Integration | Summary

Evolution…Closeout Process

- **UG and Agency Enforcement**
  - 90/120 day enforcement of financial and programmatic reports
- **Analysis of P.A.E.D.**
  - Identification of Postings After End date
- **Root Cause Analysis**
  - Understanding the underlying process and/or technology that allows "late postings"
- **Detailed Reporting**
  - **Identification of a) Compliance Risk and b) Financial Risk**


Structure
Examples
Integration
Summary
Evolution…Portfolio Complexity (PCI)
More Later
Tool to support >80% HR Initiative
• # and $ of grant funds complexity
Portfolio Complexity
• Calculation of individual grant "complexity"
Addition of Workload Data
• # and Type of Transaction posted to project
Addition of Variability Data
• Portfolio complexity is impacted by variability of sponsor and/or PIs
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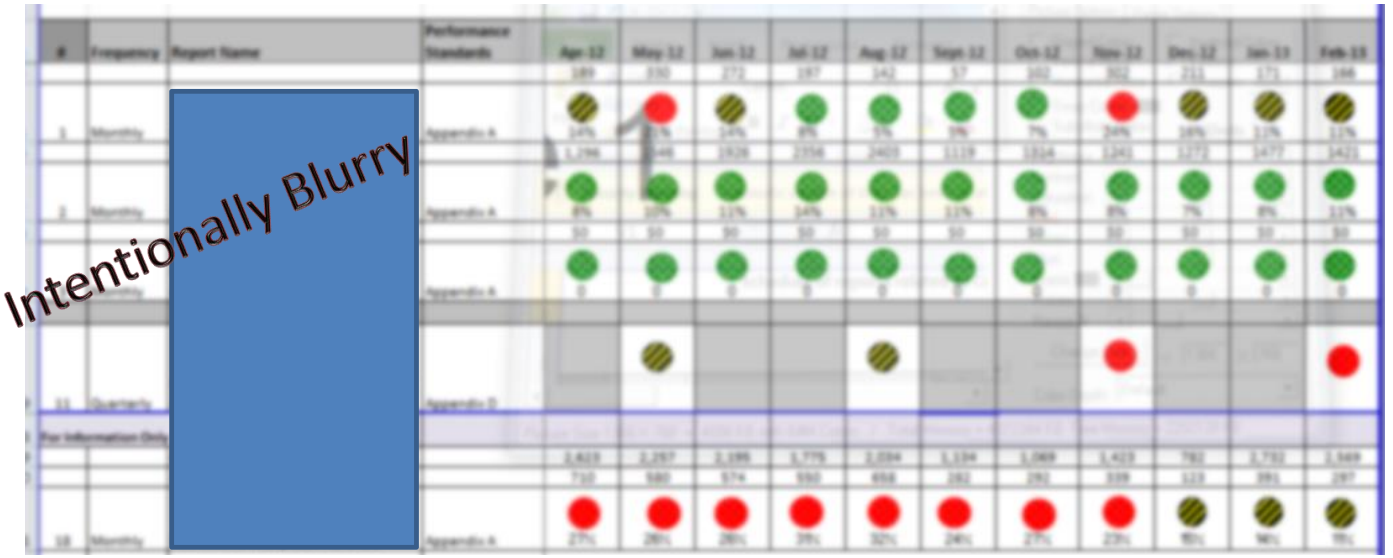
Structure
Examples
Integration
Summary

Research Costing Compliance Monitoring Metrics
(School Level Summary)

Fictional Data



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Structure
Examples
Integration
Summary

Research Costing Compliance Monitoring Metrics
(Department Level Summary)

Fictional Data

Parent BFR	DESCRIPTION	FY12 Pd11	FY12 Pd12	FY13 Pd1	FY13	FY13	FY13 Pd5	FY13 Pd6	12 Pd Sum # NSCT	% UT over 12 Pds
Dept 1		0%	0%			0%	0%	20%	15	13%
Dept 2		0%			0%	40%	0%	0%	33	21%
Dept 3		0%		0%	0%	0%	0%	0%	0	0%
Dept 4		0%		0%	0%	0%	0%	0%	1	0%
		0%		0%	0%	8%	0%	26%	0%	288	9%
		0%	0%	0%	0%	0%	0%	0%	0%	0	0%
		0%	0%	0%	1%	0%	0%	50%	0%	574	2%
		0%	0%	0%	0%	30%	0%	0%	0%	142	3%
		0%	5%	0%	0%	0%	0%	0%	0%	694	21%
		0%	0%	0%	3%	0%	4%	0%	4%	435	1%
		0%	0%	0%	10%	1%	0%	2%	0%	1138	2%
		0%	0%	0%	0%	0%	0%	0%	0%	13	0%
		0%	0%	0%	0%	0%	0%	0%	0%	37	10%
		0%	3%	0%	0%	0%	0%	0%	0%	133	25%
		0%	0%	0%	0%	0%	0%	0%	0%	8	0%
		16%	14%	7%	12%	33%	26%	5%	10%	4368	12%
		11%	4%	0%	1%	20%	1%	1%	1%	1234	4%

Portfolio Complexity Index (PCI)

Key Elements
- Complexity of Portfolio (Pre and Post-award)
- Sponsored Project Workload ($ and #)
- Workload Variability (# of different sponsors and PIs)

Structure
Examples
Integration
Summary

Expectations of Grant Manager

- Responsible Financial Person in Support of PI for all financial aspects of Grant Oversight
  - Allowability Management: allocability, reasonableness & allowability of all expenditures charged to the grant
  - Effort Management: management of effort commitments, overcommitments, etc.
  - Budget Management: management of budget

In many cases, the GM will be personally responsible for these activities and in other situations there may be multiple parties involved, but ultimately the GM is responsible to the PI for management of these three aspects of project oversight.

Structure
Examples
Integration
Summary

Portfolio Complexity Index (PCI)

- **Objective:** Develop methodology to provide input to HR Team in support of Rollout and long-term management of job classifications
  - **Short-term:** support consistent classification of personnel within and across depts./schools
  - **Long-term:** alignment of complexity with job levels/classifications, training, and performance management
    - Training and education: Confirm adequacy of training based on assigned complexity (RCC curriculum, training objectives alignment)
    - Workload management tool for departments

Structure
Examples
Integration
Summary

PCI: Phase 2 Update

- PCI
  - Phase 1: Measures portfolio complexity based on classification of individual project codes; rolled up by GM, PI, Dept, etc.
  - Phase 2: Expanded to include
    - Workload metric
      - Number of Projects; Number of Transactions; Total Expenditures
    - Variability Index (PI and Sponsor)
      - Portfolio complexity is correlated to the number of PIs and the number of Sponsors

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Structure
Examples
Integration
Summary

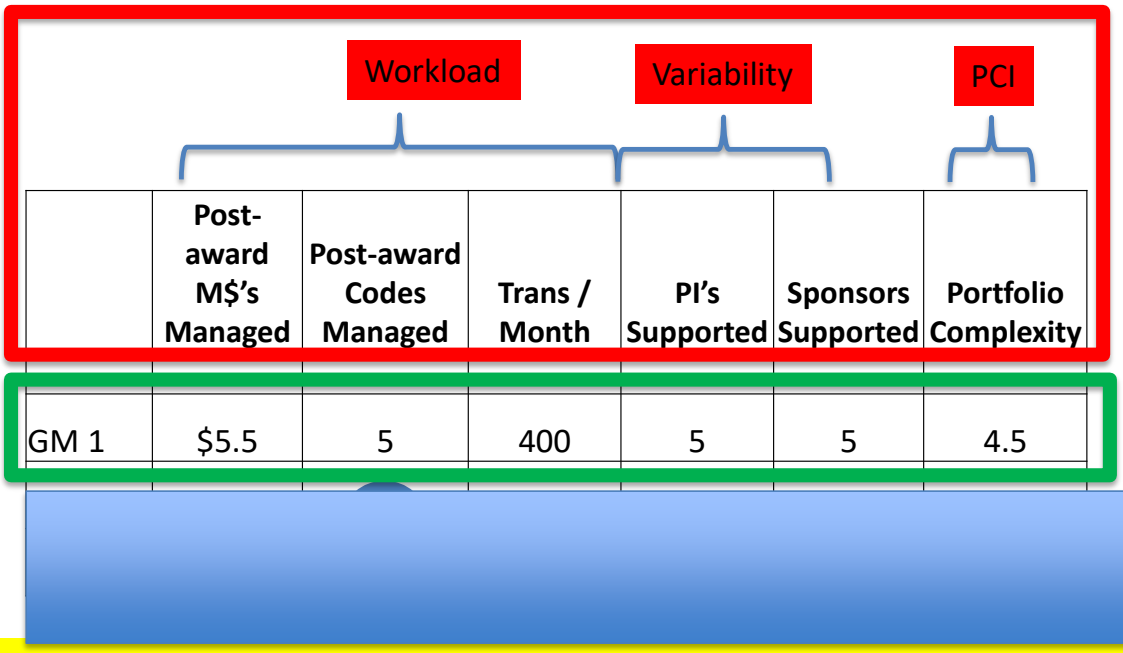
PCI Overview Example

	Post-award M$'s Managed	Post-award Codes Managed
GM 1	$5.5	5
GM 2	$7.1	15
GM 3	$13.4	6

Issue: when evaluating HR level, training requirements, compensation, how can an institution evaluate the true complexity of a portfolio?

Structure | Examples | Integration | Summary

PCI Overview Example



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Structure
Examples
Integration
Summary

PCI Overview Example

Workload
Variability
PCI

	Post-award M$'s Managed	Post-award Codes Managed	Trans / Month	PI's Supported	Sponsors Supported	Portfolio Complexity
GM 1	$5.5	5	400	5	5	4.5
GM 2	$7.1	15	50	1	2	3.4
GM 3	$13.4	6	10	2	1	3.1

Issue: when evaluating HR level, training requirements, compensation, how can an institution evaluate the true complexity of a portfolio?

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Structure | Examples | Integration | Summary

PCI Overview Example

Workload | Variability | PCI

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Examples
Integration
Summary

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Variability
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Issue: when evaluating HR level, training requirements, compensation, how can an institution evaluate the true complexity of a portfolio?

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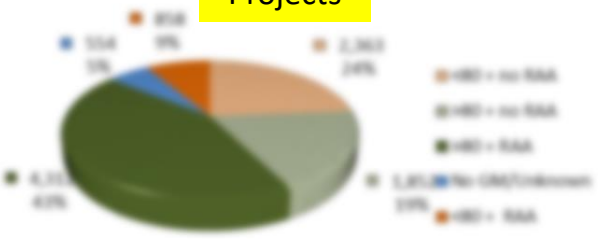
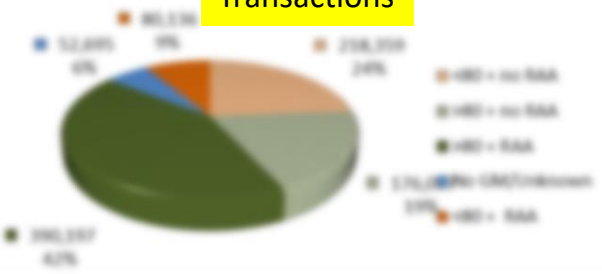
Structure
Examples
Integration
Summary

RCC Certification & HR Classification - Outline

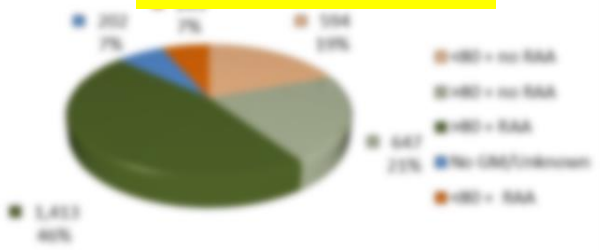
Projects



Transactions



Projects with PCI >4



Fictional Data
Intentionally Blurry

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Structure
Examples
Integration
Summary

Portfolio Complexity Index (PCI)

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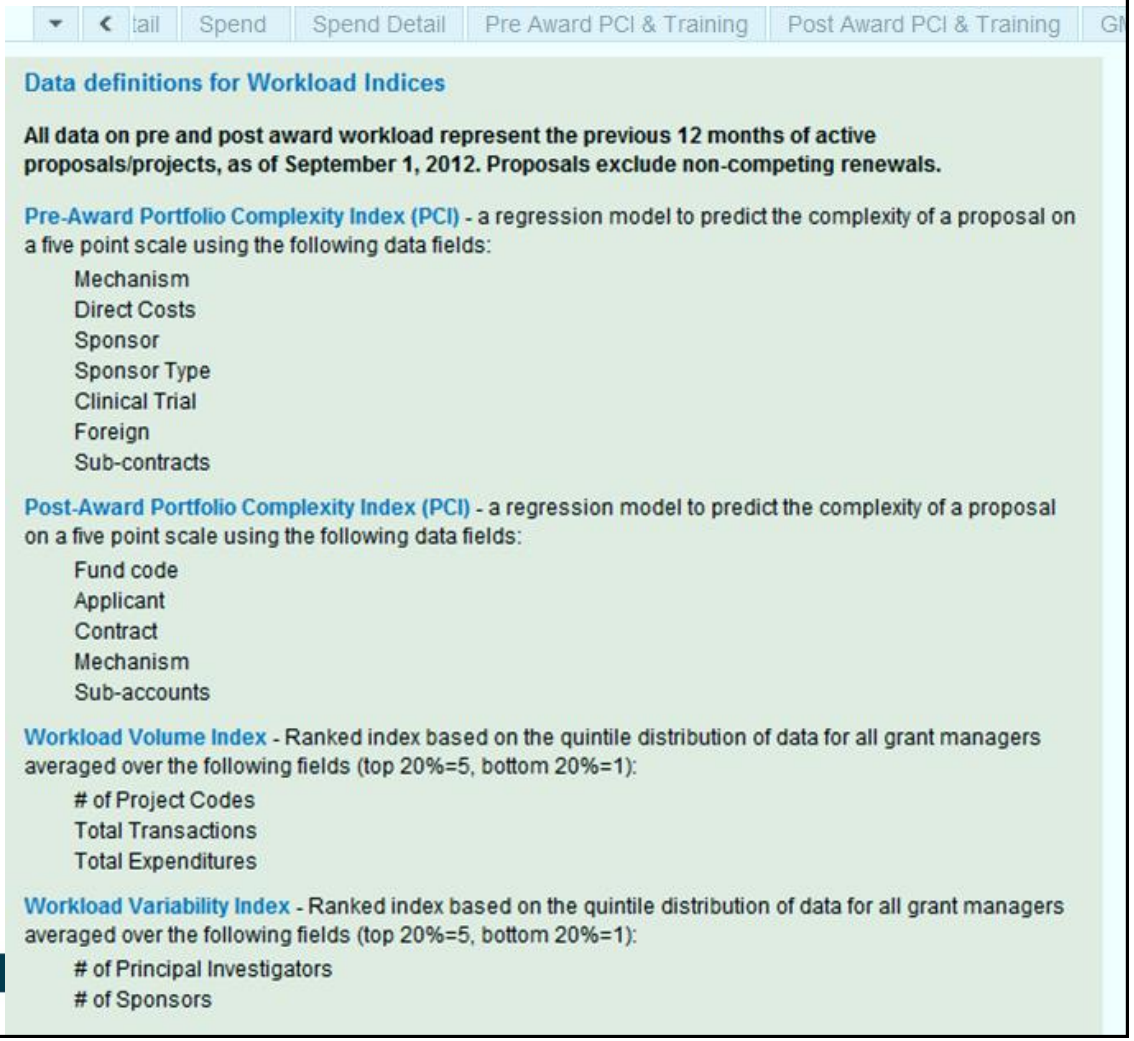
Data Definitions



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PCI Regression Factors

		Variables Predicting Complexity for Post-Awards					PCI Score = sum of (Score*Multiplier) for all 5 variables plus the intercept from the regression equation	
		Fund code	Applicant	Contract	Funding Mechanism	Sub-accounts		
Range of Scores		1-5	1-3	no=2, yes=3	1-5	1-6		
Multiplier from regression equation		0.522	0.918	0.599	0.603	0.082		
Example 3	Data	3080156	DHHS, PHS, NIH, NCI	No	F	0	Intercept	Row Total = PCQ
	Score	1	3	2	1	1		
	Score*Multiplier	0.522	2.754	1.198	0.603	0.082	-4.756	0.40
Example 4	Data	3033246	DHHS, PHS, NIH, NCI	No	P	0		
	Score	5	3	2	5	1		
	Score*Multiplier	2.610	2.754	1.198	3.015	0.082	-4.756	4.90

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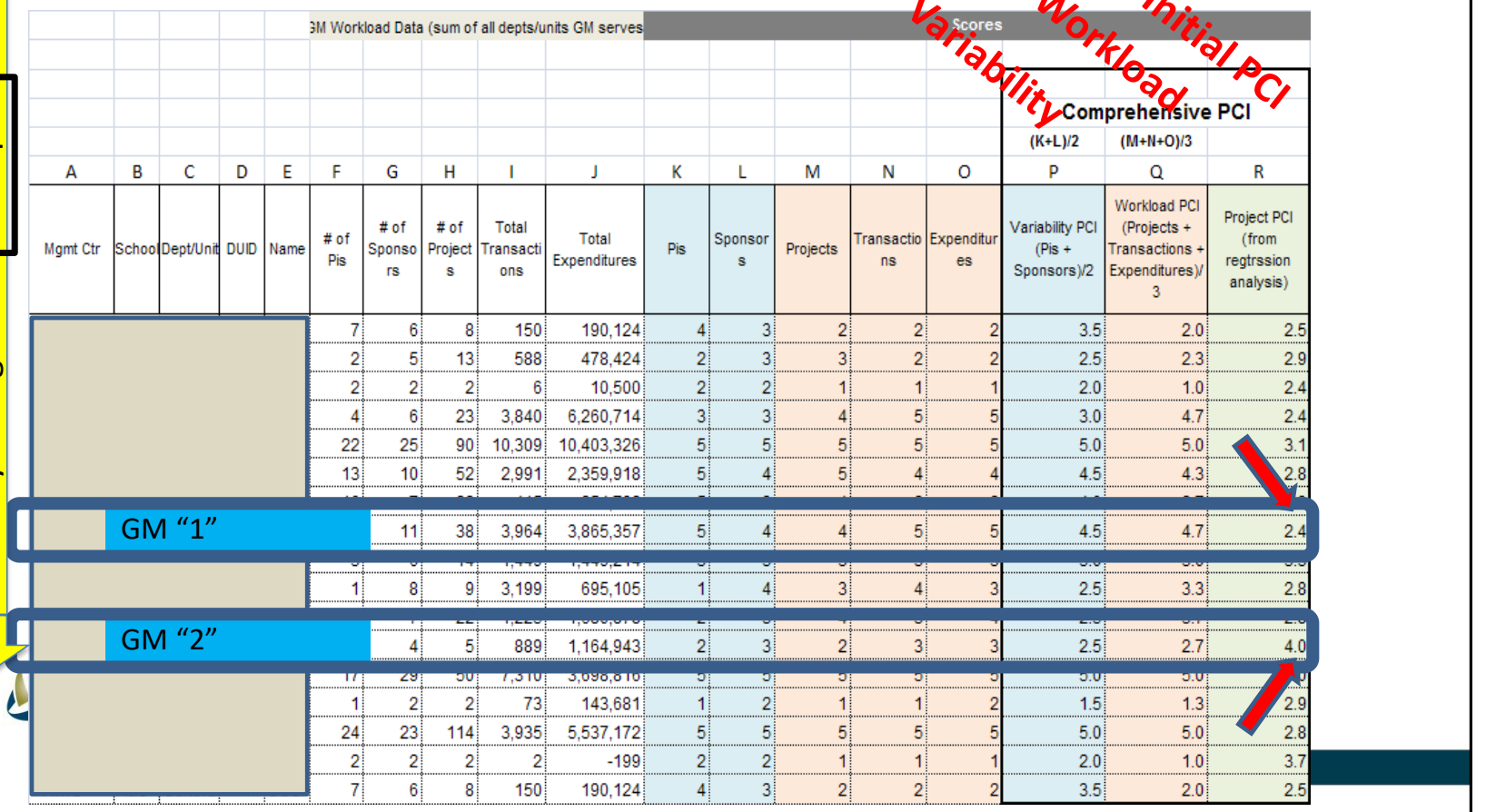
Sample PCI Data (Phase 2)

Structure
Examples
Integration
Summary



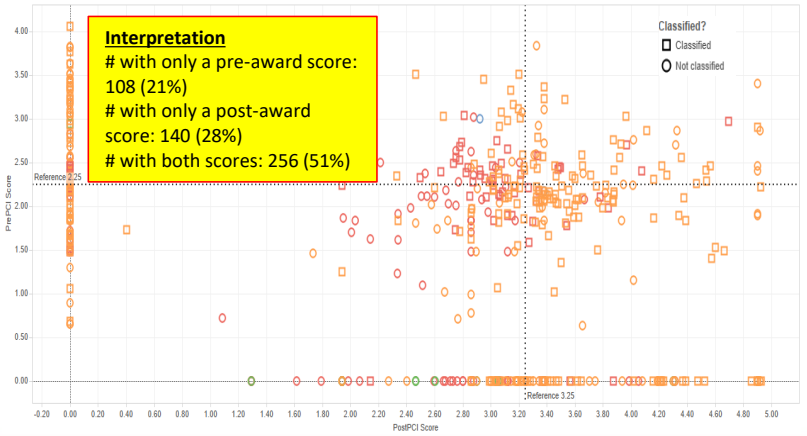
					GM Workload Data (sum of all depts/units GM serves					Scores							
															Comprehensive PCI		
															(K+L)/2	(M+N+O)/3	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Mgmt Ctr	School	Dept/Unit	DUID	Name	# of Pis	# of Sponsors	# of Projects	Total Transactions	Total Expenditures	Pis	Sponsors	Projects	Transactions	Expenditures	Variability PCI (Pis + Sponsors)/2	Workload PCI (Projects + Transactions + Expenditures)/3	Project PCI (from regtrssion analysis)
					7	6	8	150	190,124	4	3	2	2	2	3.5	2.0	2.5
					2	5	13	588	478,424	2	3	3	2	2	2.5	2.3	2.9
					2	2	2	6	10,500	2	2	1	1	1	2.0	1.0	2.4
					4	6	23	3,840	6,260,714	3	3	4	5	5	3.0	4.7	2.4
					22	25	90	10,309	10,403,326	5	5	5	5	5	5.0	5.0	3.1
					13	10	52	2,991	2,359,918	5	4	5	4	4	4.5	4.3	2.8
GM "1"					11	38	3,964	3,865,357		5	4	4	5	5	4.5	4.7	2.4
					1	8	9	3,199	695,105	1	4	3	4	3	2.5	3.3	2.8
GM "2"					4	5	889	1,164,943		2	3	2	3	3	2.5	2.7	4.0
					1	2	2	73	143,681	1	2	1	1	2	1.5	1.3	2.9
					24	23	114	3,935	5,537,172	5	5	5	5	5	5.0	5.0	2.8
					2	2	2	2	-199	2	2	1	1	1	2.0	1.0	3.7
					7	6	8	150	190,124	4	3	2	2	2	3.5	2.0	2.5

Structure
Examples
Integration
Summary

PCI Overview Example

- Metrics
  - Complexity (PCI)
  - Variability
  - Workload
- Report Levels
  - Project
  - Grant Manager
  - Faculty member
  - Department, School

Pre and Post Award



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Structure
Examples
Integration
Summary

PCI Summary

1. Methodology is very complex; primary driver is the regression analysis which takes all of the subjective decision-making out of the process *(e.g. should a DoD contract be weighted higher than a Gates Foundation grant with 10 foreign subcontracts).*
    1. The regression analysis determined which fields should be used and these were vetted with the PCI development team, central offices reps, and then dept'l reps.

2. And most importantly, this is only one element, albeit quantitative, that should be taken into account when being used by HR and department.

Structure
Examples
Integration
Summary

Background

Portfolio Complexity Index (PCI)

- PCI
  - Phase 1: Using **Regression Analysis**, **measures portfolio complexity** based on classification of individual project codes; rolled up by GM, PI, Dept, etc.
    - **Supported >80% Transition to classified positions**
  - Phase 2: Expanded to include
    - **Workload metric**
      - Number of Projects; Number of Transactions; Total Expenditures
    - **Variability Index** (PI and Sponsor)
      - Portfolio complexity is correlated to the number of PIs and the number of Sponsors
  - Phase 3: Inclusion of **Pre-Award PCI data** through assignment of PAL
  - **Phase 4: Integration with Training Data, etc.**
  - Phase 5: Integration with Workflow Transactional Data
  - Phase 6: Electronic Decision Matrix (EDM)

Under Development

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Data Integration ⟷ Performance Metrics

- **Are the right people in the right roles?**
  - Who is in the submitter and approver roles for the various technologies?
  - Are they trained/certified appropriately?
  - Does their individual workload appear reasonable?
  - Does management have a process to monitor and adjust for Workload & Complexity?
  - Do the GM's have adequate time to meet with the PI's? Should their be a workload redistribution?
  - Is the correlation between workload, complexity, training, and metrics reasonable?

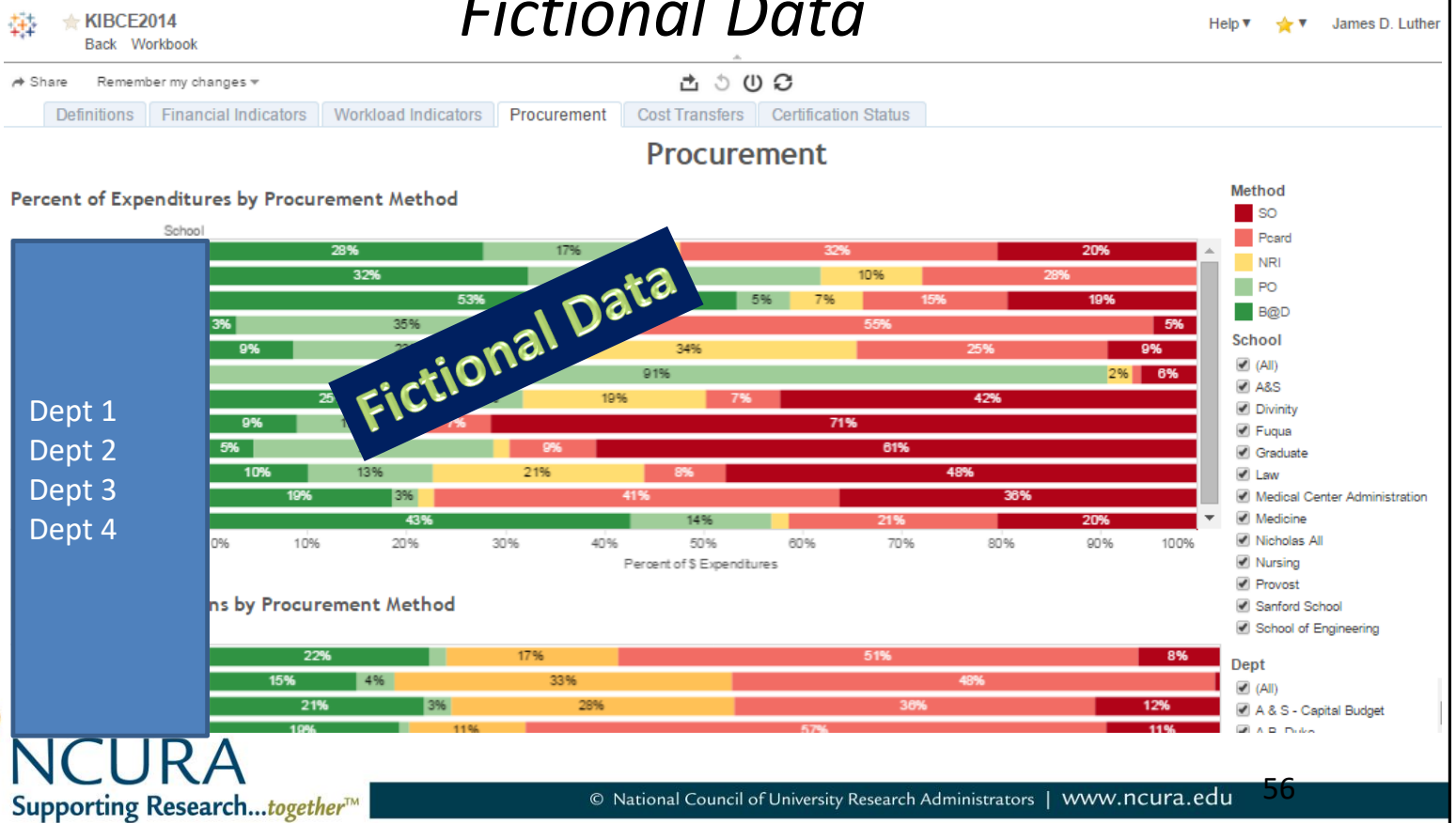
Data Integration ⟺ Performance Metrics

- **Are you utilizing the systems with the most efficient / effective controls?**
  - What are the transaction categories with the largest volumes ($ and #)? Do you have adequate controls?
  - Have you "over" developed a control structure for low risk/count transactions? Have you "under" developed others?
  - What is the absorption rate and utilization of new technologies? Can data be used to drive higher adoption of transactions with stronger internal controls?

Summary Integration Examples Structure

Procurement Methods

Fictional Data



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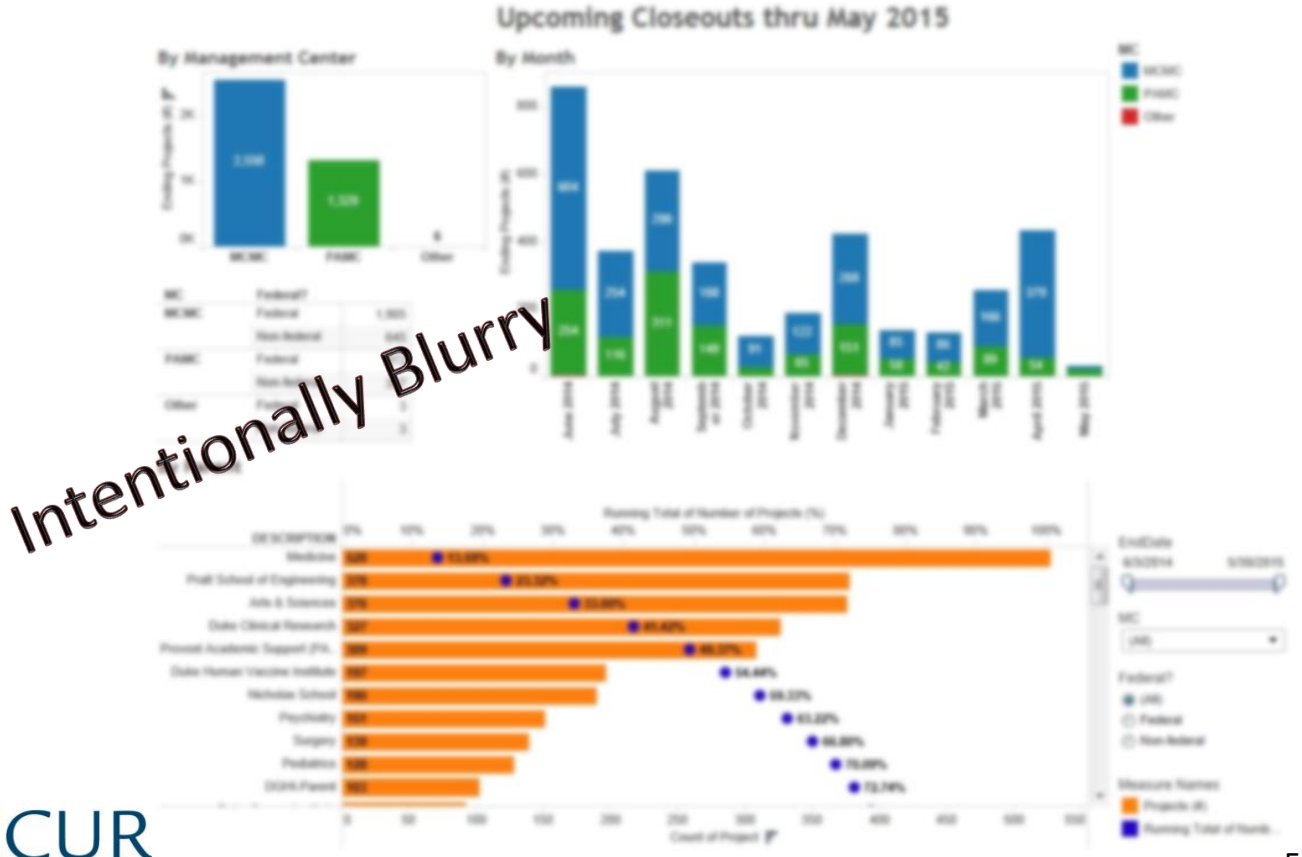
Structure
Examples
Integration
Summary

Dashboard View of Upcoming Closeouts



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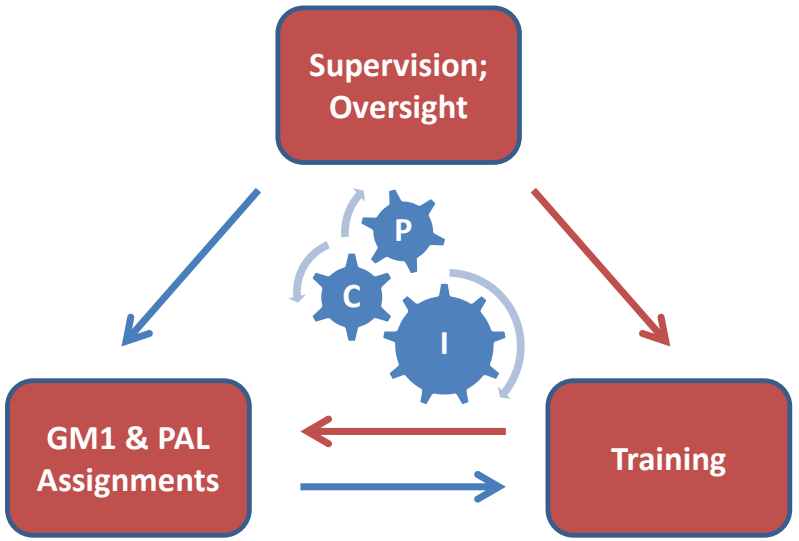
eRA@Duke 2013

Structure
Examples
Integration
Summary

Internal Controls & PCI



- Audit risk mitigation – appropriate assignments & training
- PCI driven process – GM (Grant Manager) and PAL (Pre-award Liaison) fields maintenance is critical

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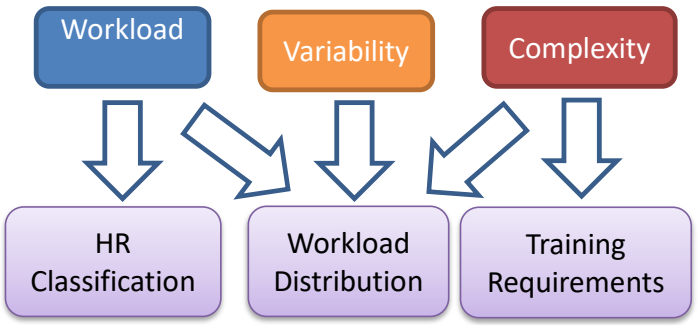
Structure
Examples
Integration
Summary

PCI Utilization

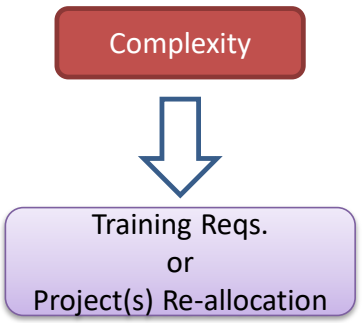
GM PCI Scores

- Set of aggregated measures providing a comprehensive overview of portfolio complexity, portfolio variability and workload



Project PCI Score

- Granular measure of project complexity. Should be a factor in training requirements identification for individuals managing a small set of complex projects, but with average overall scores



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Structure
Examples
Integration
Summary

Discussion and Outcomes

Discussion points:

- Internal controls with respect to the total population performing grant management duties
  - Appropriate assignment, training and oversight of GMs
  - PCI as an Internal Control Tool in Support of Supervisor Oversight

Future Discussion
Automating calculation and frequency of PCI

- PCI, RCC Certification & HR Classification Integration
  - Not classified & not certified grant managers

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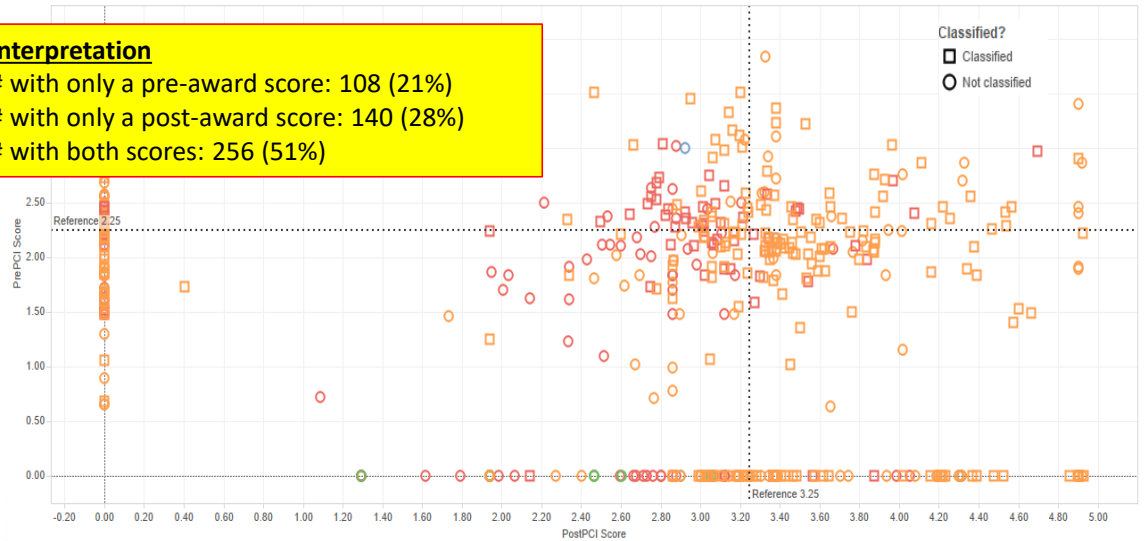
Summary | Integration | Examples | Structure

Pre and Post-Award PCI Integration Tool

- PCI Integration is a composite report that combines both Pre-award and Post-award PCI analyses and provides a comprehensive overview of portfolio complexity, portfolio variability and workload
- Supports departmental decisions regarding workload assessment and assignments and to provide improved availability to PCI related information.

Interpretation
with only a pre-award score: 108 (21%)
with only a post-award score: 140 (28%)
with both scores: 256 (51%)



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Structure | Examples | Integration | Summary

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Under Development

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KIBCE

Key Indicators of the Business Control Environment

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Key Indicators of the Business Control Environment
(Risk Assessment Overview)

- **Indicator Areas**
  - **Personnel** – Integration of Multiple Data Points
    - PCI (Pre and Post-award Comparative Date - Distribution of Complexity)
    - Training Status
    - Workload & Variability
  - **RCC Metrics –** Cost Transfers, Effort Reporting, etc.
  - **Procurement Methods**

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Key Indicators of the Business Control Environment

- Objective
  - Control Document Development and Review
    - Support the Department / School / Management Center's review
  - Provides management tool for department to
    - Manage distribution of grant workload (in conjunction with PCI)
    - Ensure training requirements are being met in conjunction (with Training Tracker)
    - Track the absorption and utilization of new technologies (e.g. Buy@Duke, Travel)

Represents a portion of the quantitative input into the process; not comprehensive and does not include subjective data.
Provides "context" so that management has a frame of reference when determining risk.

Score (Scale 1 - 5 (high risk))

Indicator Area - Dept 1		Average = 4.08
Personnel		
Workload	3	Moderate workload per FTE
PCI (Distribution of Complexity)		
Pre-award	4	Moderate Complexity
Post-award	3	Moderate Complexity
Training Status	5	Minimal certification in key roles
Procurement Methods	5	Minimal Apparent Front-end Controls
RCC Metrics	4.5	Extremely high CT's / Moderate CAS

Indicator Area - Dept 2		Average = 2.14
Personnel		
Workload	2	Low workload per FTE
PCI (Distribution of Complexity)		
Pre-award	2	Very Low Complexity
Post-award	4	High Complexity
Training Status	2	75% GM's certified
Procurement Methods	2	45%: Minimal Front-end Controls
RCC Metrics	1	Low #/% of CT's and CAS

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10/29/2018

Summary Worksheet

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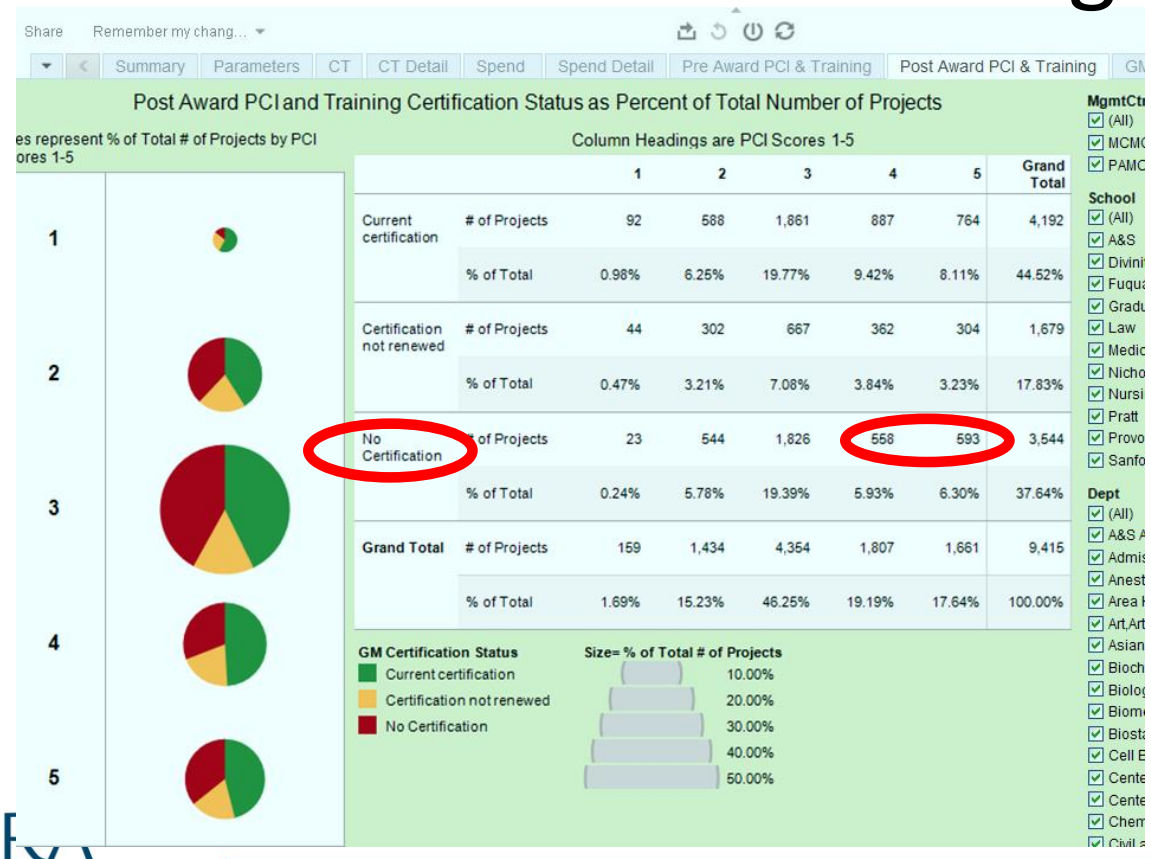
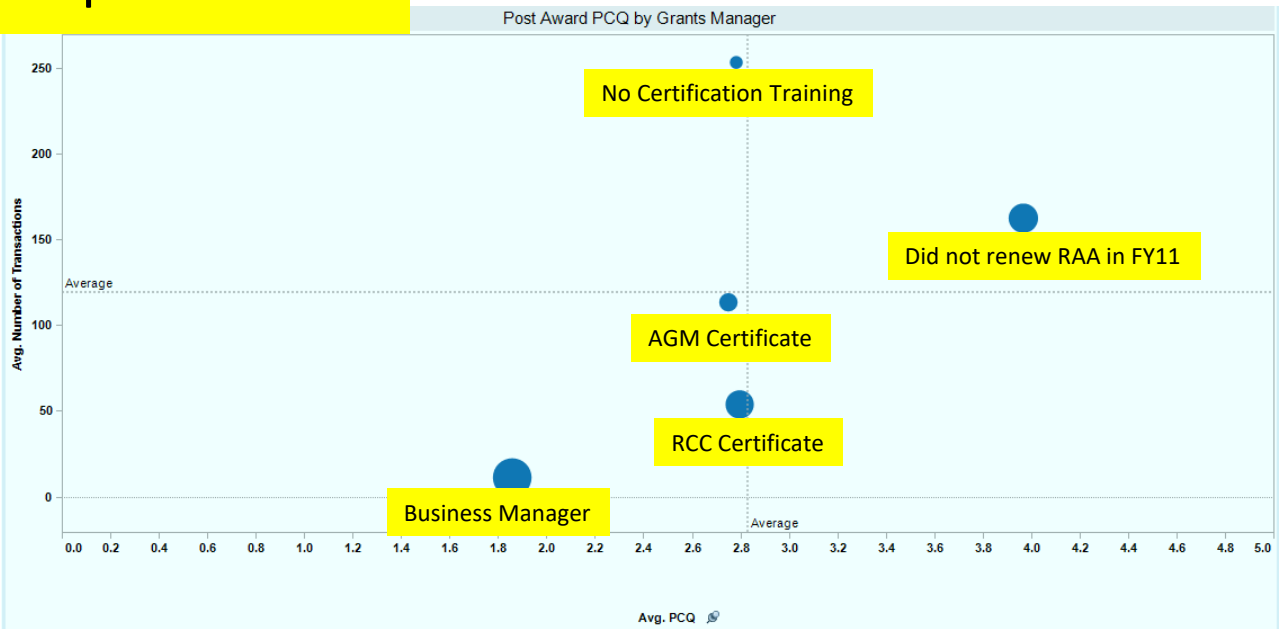
Post-award PCI and Training



	# GMs	Total Proposal Vol	Total Award Volume	Avg Post Grant $'s Managed	Post PCQ	Pre PCQ	# Proposals	# Awards	Avg Transactions
Dept 1	4	$ 25,002,000	$ 7,531,000	$ 1,882,750	2.7	2.24	60	110	105
Dept 2	4	$ 12,999,456	$ 7,966,501	$ 1,991,625	3.8	1.8	24	52	224
A&S	70	$ 189,895,705	$ 90,661,838	$ 1,295,169	2.5	1.3	509	1,319	TBD
SOM/SON	300	$ 1,757,285,534	$ 735,866,698	$ 2,452,889	2.8	1.6	3,542	8,195	TBD
All Univ	700	$ 2,437,916,978	$ 1,084,458,011	$ 1,549,226	2.6	1.5	4,985	TBD	TBD

Department 1



Detail by Grants Manager

Mgmt Ctr	School	Dept	GM Name	PI Name	Number of Projects	Avg. Post Award PCQ	Number of Transactions	Avg. No. of Transactions	Total Expenses	Avg. Total Exp.	Exp. per Transaction
					10	2.8	2,537	254	699,166	69,917	276
					12	2.8	609	51	872,203	72,684	1,432
					10	2.8	582	58	681,251	68,125	1,171
					2	4.3	240	120	299,445	149,722	1,248
					3	3.7	574	191	843,278	281,093	1,469
					2	1.8	25	13	69,069	34,534	2,763
					9	1.8	121	13	291,620	32,402	2,410
					2	2.3	3	2	175	88	58
					1	2.3	1	1	89	89	89
					2	2.6	68	34	2,339	1,169	34
					1	2.5	15	15	47,665	47,665	3,178

No Certification Training
RCC Certificate
Did not renew RAA in FY11
Business Manager
AGM Certificate

Key Success Factors – PCI

- Derivation Issues
  - Post-award
    - Reliability of GM Field: GM field needs to be consistently populated and updated.
    - PI's and GM's have a one-to-many and many-to-many relationship making derivation complex
  - Pre-award
    - Direct supporting relationship of GM to PI is not clear (not specifically identified in master data)
- Other Factors & Subjectivity
  - Regardless of Complexity analysis, there will still be subjectivity applied to the process
    - Years experience, Level of Autonomy, Portfolio variation, Quality of work, Certification/Education, Number of PI's supported, Specific PI requirements, Transaction Volume, Impact of supporting both Post & Pre activities
    - Other Responsibilities

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Structure Examples Integration Summary

Interpretative & Predictive

Algorithms to Drive Interpretation and Actionable Steps through Exception Reporting & Dashboards

1) Dept. Grant manager (GM) with complex award portfolio , high variability in PI & sponsor, high workload and inadequate training

   Interpretation / Action: redistribute work and get staff trained

2) Dept. "approvers" who aren't trained and high Cost Transfer levels = Problem

   Interpretation / Action: Train "approvers" in AAR, Review workload assignments, review internal controls, analyze transfer volume by project and GM

3) Late Closeout Documents, Revised FFR's, Significant postings after close = Potential financial loss and institutional compliance risk

   Interpretation / Action: Review "Upcoming Closeout List" with focus on SubAcct; Enlist School support for backlog.

4) GM's with complex Pre and Post portfolio, lots of proposal waivers and late closeout documents

   Interpretation / Action: separate pre-award from post-award responsibilities; review training

5) High P-card, High CT volume, Late Closeouts, UT CTs

   Use purchasing process with better controls, ensure transaction "creator/approver" have AA training.

Examples

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Structure Examples Integration Summary

DATA INTEGRATION AND METRICS →

- IMPROVED
  - COMPLIANCE
  - BUSINESS OPERATIONS (thru clearer training needs and better transparency), &
  - WORKLOAD MANAGEMENT at the department, school, and institutional levels

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Structure
Examples
Integration
Summary

Summary

- "Not everything that counts can be counted, and not everything that can be counted counts." – *Albert Einstein*
- Building infrastructure and business case will take time
- Proactive → Evolutionary **&** Revolutionary

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QUESTIONS?

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