Facilitating Institutional Improvement Utilizing Faculty Compensation Data for Two-Year Institutions

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Workshop Agenda

- Exploring Challenges to Institutional Improvement
- Utilizing Benchmarking to Facilitate Institutional Improvement
- Survey of Academic Cost Benchmarking Projects
- AAUP Faculty Compensation Survey Overview
- Uses and Benefits of Faculty Compensation Survey Benchmark Data
- Questions, Comments, Demonstration

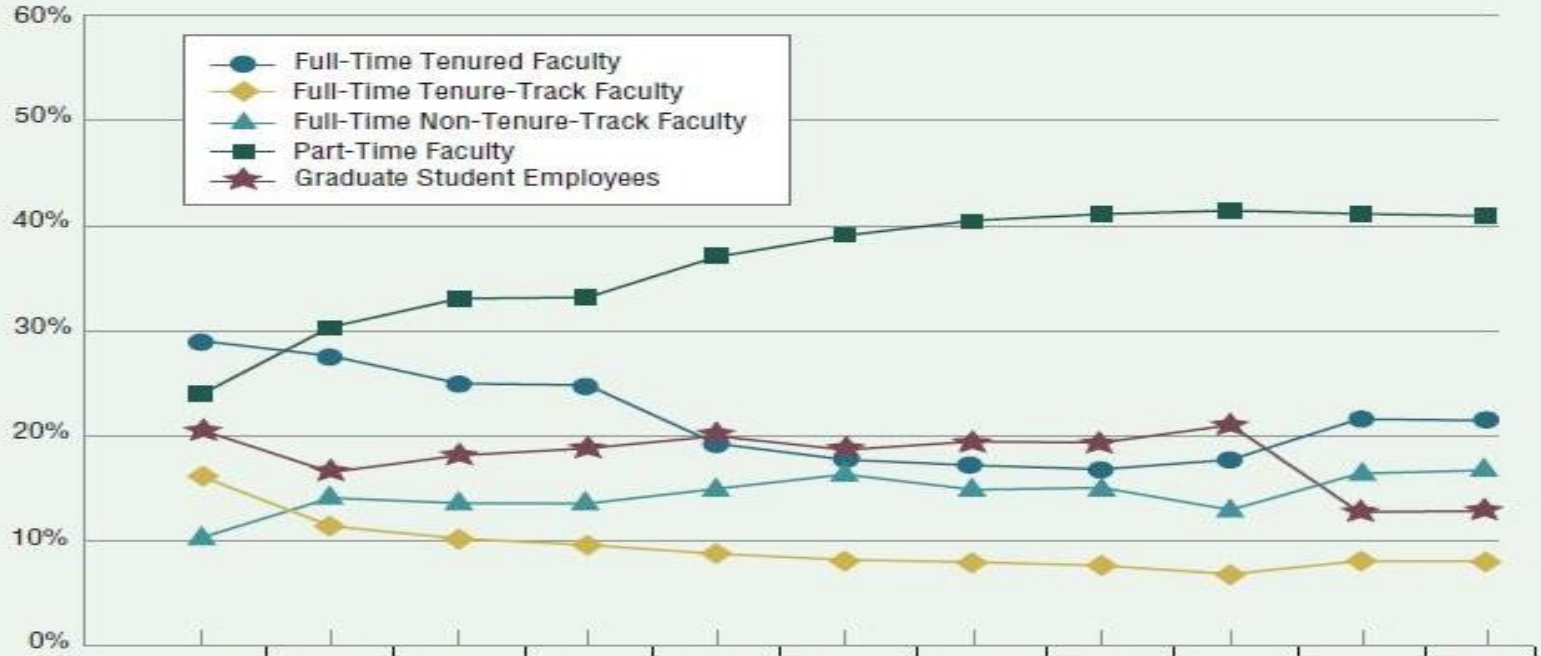
One View to Facilitate Improvement

"They [established institutions] aspire to become excellent in every field of research and instruction and to provide any course of study that any student might want. The beginning of a permanent solution for almost all universities is that they must choose in what area they will be excellent. It is only through focus that these institutions can reduce complexity. And it is only by reducing complexity that they can substantially reduce costs. **Laying off faculty or administrative staff across the board or freezing employee salaries while leaving the basic mission and structure of the institutions unchanged is akin to straightening the deck chairs on the Titanic.** It will not solve the problem of economic viability in the short run or the longer run—and it may very well drive quality faculty out and exacerbate and accelerate the institutions' demise."

- Clayton Christensen, *Disrupting Class: How Disruptive Innovation Can Deliver Quality and Affordability to Postsecondary Education*

The Changing Academic Labor Force, 1975 – 2014

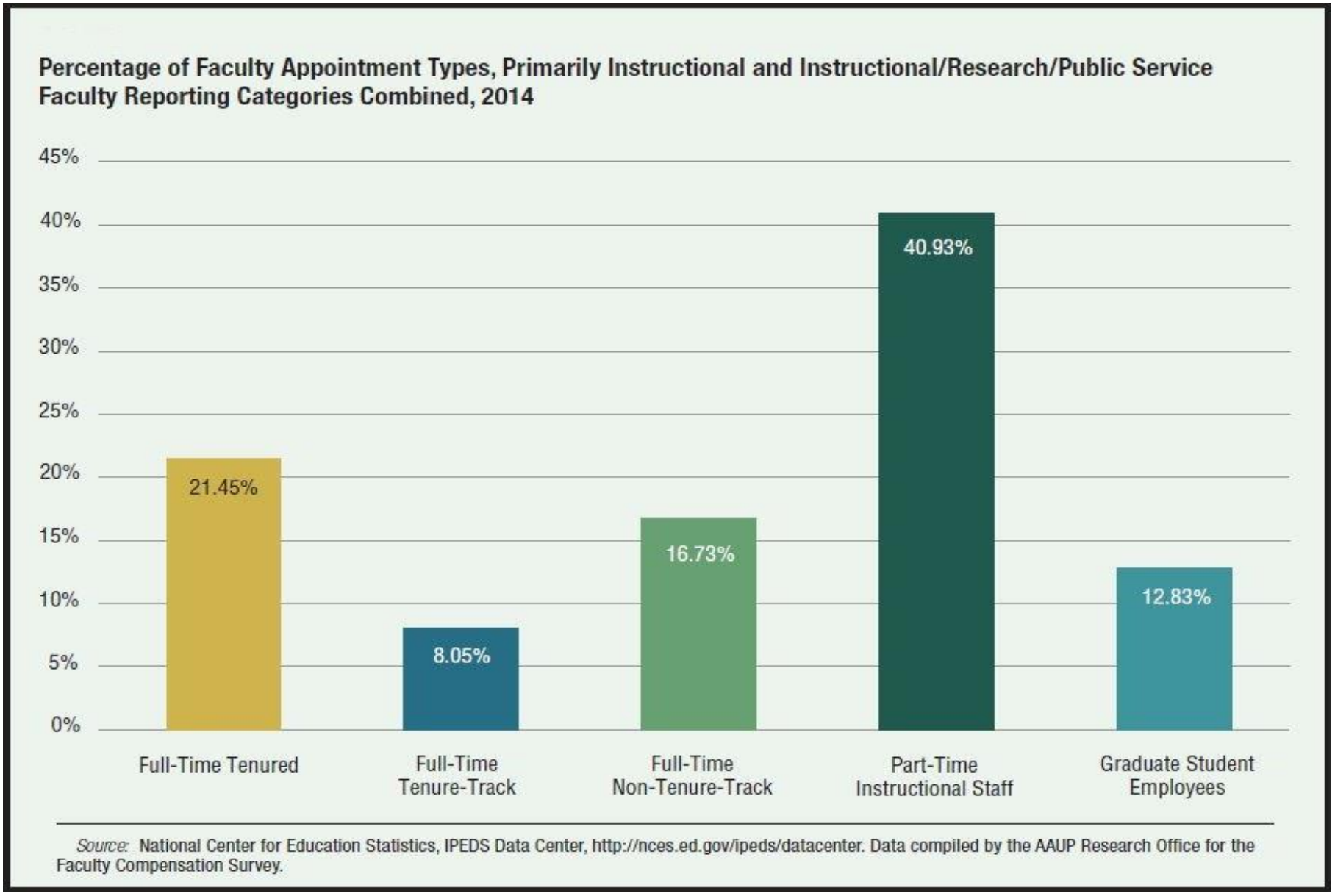
Trends in Academic Labor Force, 1975–2014



	1975	1989	1993	1995	2003	2005	2007	2009	2011	2013	2014
Full-Time Tenured Faculty	29.03%	27.61%	24.99%	24.82%	19.26%	17.73%	17.19%	16.82%	17.73%	21.60%	21.45%
Full-Time Tenure-Track Faculty	16.12%	11.40%	10.22%	9.61%	8.77%	8.20%	7.98%	7.65%	6.84%	8.09%	8.05%
Full-Time Non-Tenure-Track Faculty	10.33%	14.09%	13.59%	13.56%	14.96%	16.33%	14.87%	15.06%	12.95%	16.41%	16.73%
Part-Time Faculty	24.00%	30.36%	33.07%	33.19%	37.04%	39.07%	40.50%	41.11%	41.45%	41.14%	40.93%
Graduate Student Employees	20.53%	16.54%	18.14%	18.81%	19.97%	18.67%	19.46%	19.36%	21.02%	12.76%	12.83%

Source: National Center for Education Statistics, IPEDS Data Center, http://nces.ed.gov/ipeds/datacenter. Data compiled by the AAUP Research Office.

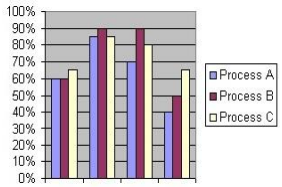
The Academic Labor Force, 2014



Why use benchmarking data?

- The most integrated data system offers only clear insights into your institution (Case Study).

- Highly effective institutions engage in comprehensive benchmarking processes.



- *Internal benchmarking* refers to measuring similar operations, functions, or activities *within* the same unit or organization.

- *External benchmarking* refers to measuring similar operations, functions, or activities *outside* the same unit or organization.

Barriers to Benchmarking in Higher Education

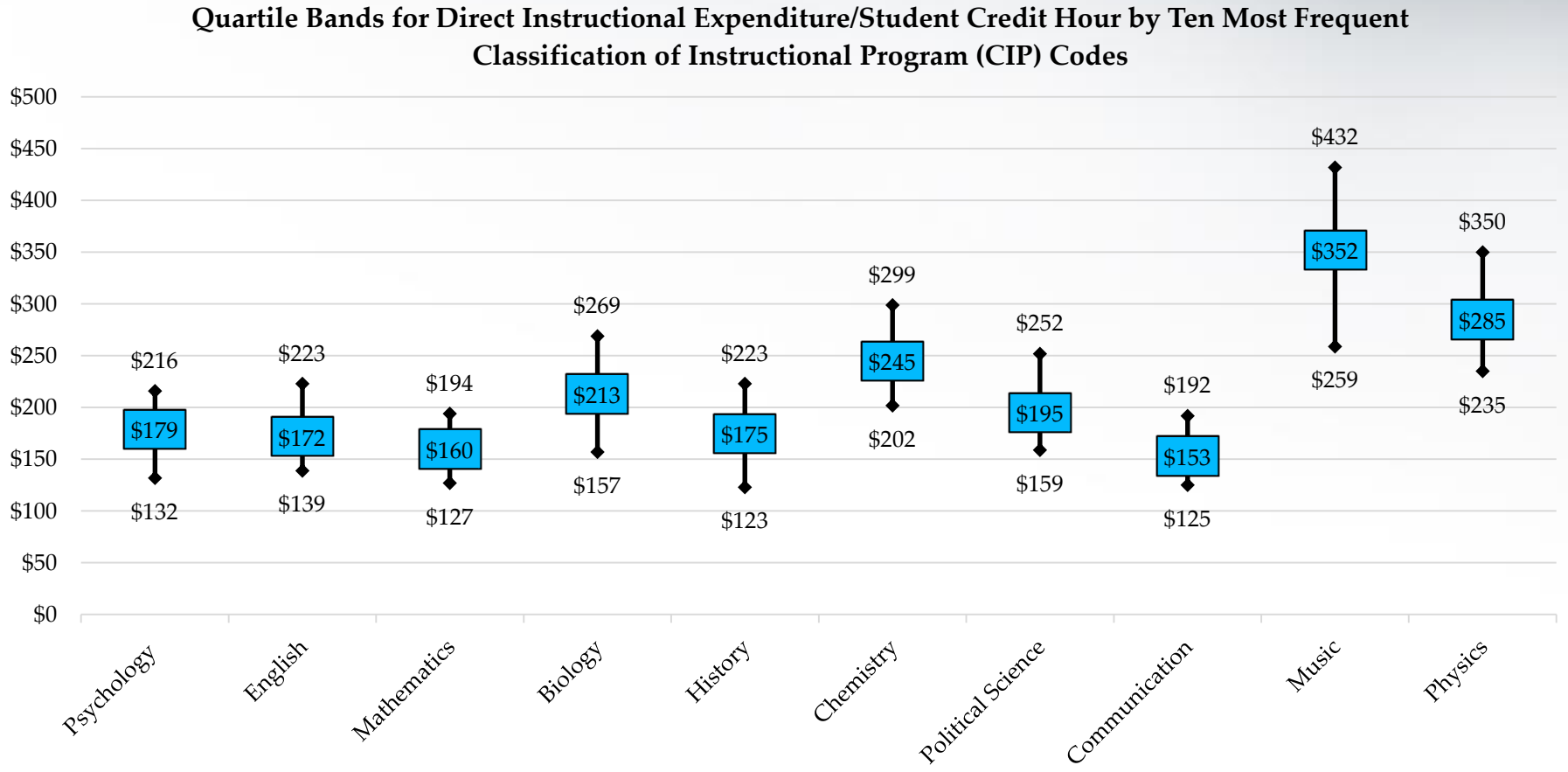
- Benchmarking has been co-opted by benchmarks. Indicators are believed to provide the same insights as benchmarking.
- Uniqueness. "We are very different here."
- Benchmarking is complex, labor intensive. "We don't have the resources."
- No "whole cost" benchmarking tools for expenditure or tuition.
- No perfect 1:1 Program/Department/Academic Budget Unit matches.
- Benchmarking should ***NOT*** be a tool for performance funding.

Academic Cost Benchmarking Projects

Data Source	Access	Cost	Unit of Analysis	Notes
American Association of University Professors Faculty Compensation Survey	Two-Year Four-Year	Free	Institution	Best for Benefits Data, 1000+ Institutions, Only Full-Time Faculty
College and University Professional Association for Human Resources Faculty in Higher Education Salary Survey	Two-Year Four-Year	$400	Discipline	Best for Discipline Data, 1000+ Institutions, Limited Data Coverage
Integrated Postsecondary Educational Data System	Two-Year Four-Year	Free	Institution	Best for Overall Data, 4200+ Institutions, Limited Salary Data
Oklahoma State University Faculty Salary Survey	Four-Year	$100	Discipline	Doctoral Institutions Discipline Data, Exclusive Participation
National Community College Cost and Productivity Project	Two-Year	$1,250	Discipline	Best for Disciplinary Instruction, 200+ Institutions, Limited Peer Coverage
National Study of Instructional Costs and Productivity	Four-Year	$1,250	Discipline	Best for Disciplinary Instruction, 200+ Institutions, Limited Peer Coverage

Does disciplinarity matter?

- According to the National Center for Education Statistics, 76 – 82 percent of the variation in cost is located at the academic disciplinary level.



How Other Institutions Use Benchmark Data

- Academic/Accreditation Program Review
- Faculty Hiring/Disparity
- Chair Key Performance Indicators
- Deans Dashboard
- Senior Budgeting/President/Provost Planning/Projections
- Identifying Cost Distortions in Budgeting Formulas
- Developing New Programs/Departments
- Grants and Research Expenditure Benchmarking
- External Audit/System Review Tool
- Student/Faculty Recruitment/Retention Tool
- General Unit and Institutional Improvement

What is the AAUP Faculty Compensation Survey?

- The *AAUP Faculty Compensation Survey* is a longitudinal benchmarking project among two- year and four-year colleges and universities with over 1,000 institutions participating annually.

- The AAUP Faculty Compensation Survey is among the oldest external data requests and the largest faculty compensation survey in the United States covering more than 385,000 full-time faculty.

- Currently, the AAUP Faculty Compensation Survey is used major data and state agencies including:
  - Association of American Universities Data Exchange (AAUDE)
  - City University of New York (CUNY) System
  - State University of New York (SUNY) System
  - University of California System (UCOP)
  - University of North Carolina (UNC) System

Form Overview

- The AAUP Faculty Compensation Survey consists of six forms:
- *Form 1*: Institutional Information
- *Form 2*: Full-Time Faculty Salary Data
- *Form 3*: Full-Time Major Benefits Data
- *Form 4*: Full-Time Continuing Faculty Data
- *Form 5*: Senior Administration Data
- *Form 6*: Part-Time and Graduate Teaching Assistant Salary Data (New)

Creating Peer Groups with Benchmark Data

- Use Key Metrics (and Align to Quality)
- Engage in Discussions with Units
- Select Peers based upon Data (Not an Eye Test)
- Implement Change (Growth v. Static)
- Know your Bench: Peer v. Aspirational v. Comparator

Benchmarking Utilizing Peer Groups

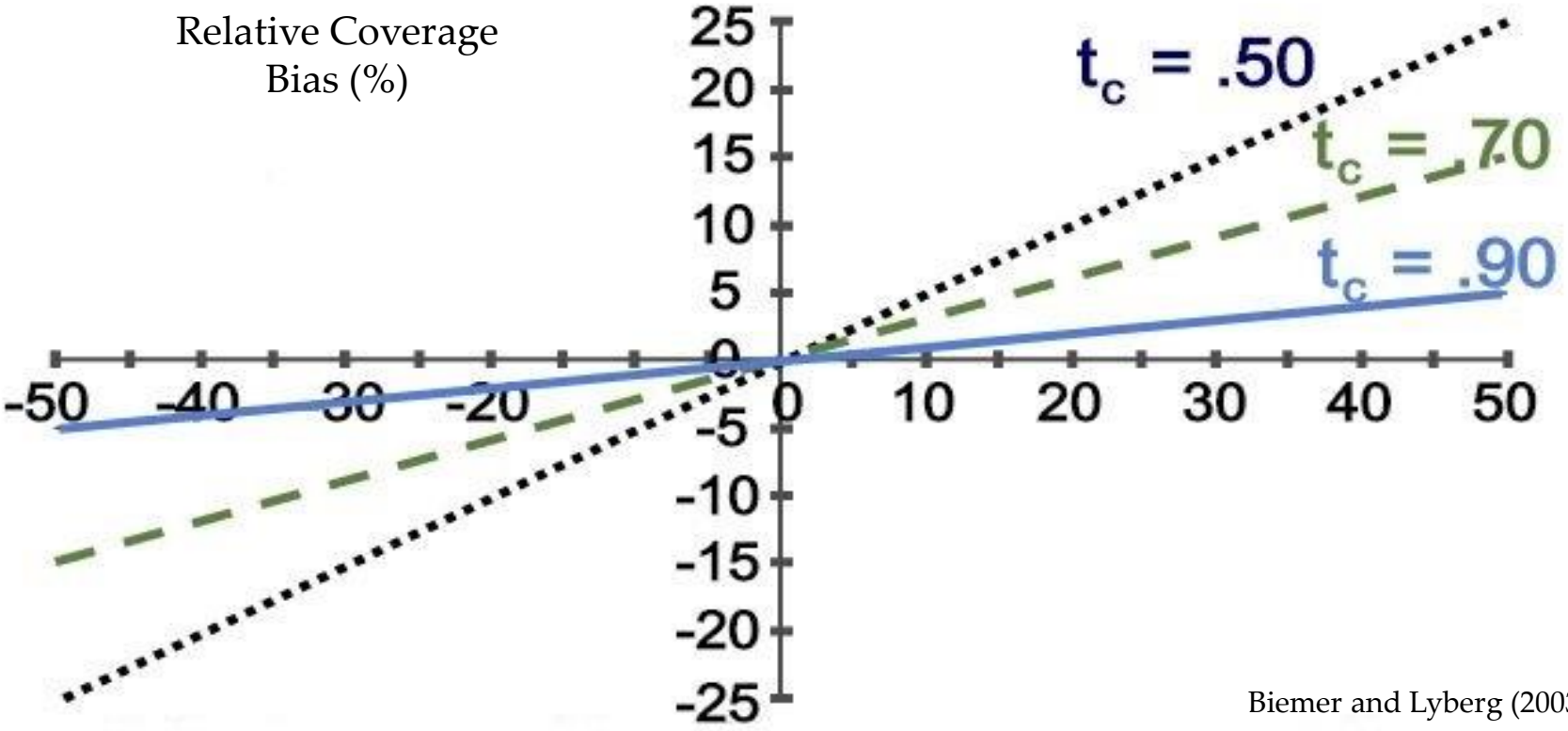
- AAUP Research Office recommends 15 – 30 institutions for peer benchmarking.

- The Association of American Universities is a consortium of 62 institutions in North America comprising 61% of all NSF grants and 36% of all Nobel Prize Laureates.

- 2014 – 2015 AAUP Faculty Compensation Survey data presented covers 58 of 60 eligible institutions (96.7% coverage).

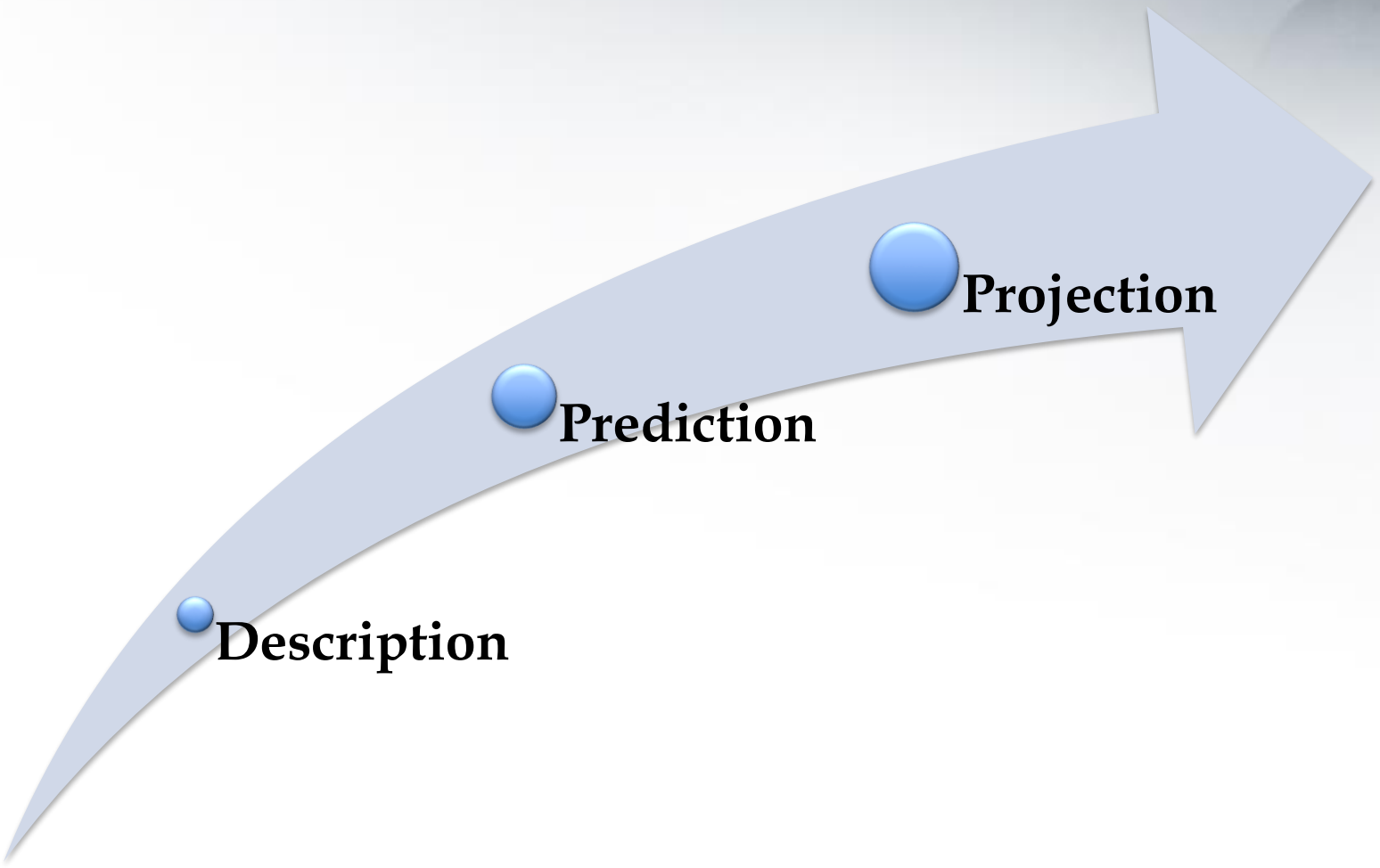
Total Survey Error and Coverage Bias

Coverage Bias as a Function of Total Coverage (t_C) and the Relative Difference between Total Frame Coverage (Y_C) and Total Frame Non-Coverage (Y_{NC})



Biemer and Lyberg (2003)

Getting the Most from Benchmarking Data: From Lagging to Leading Indicators



System Reports for Full-Time Faculty Salaries

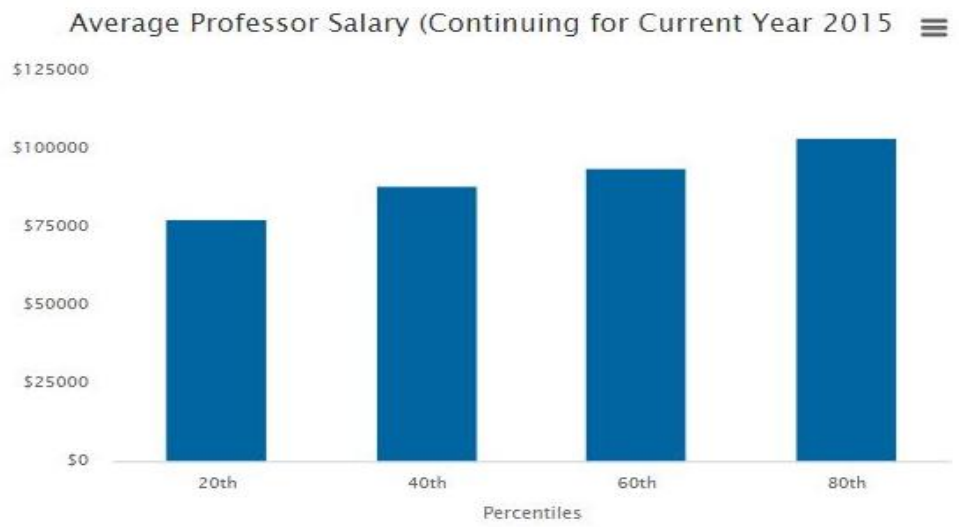
Full-Time Faculty Salary

	YOUR INSTITUTION			SYSTEM PERCENTILES				
	REPORTED VALUE	% RANK	N	20TH	40TH	60TH	80TH	
Average Instructor Salary	$57,375	24%	17	$53,918	$58,230	$60,551	$64,422	
Average Lecturer Salary	$71,278	89%	18	$63,135	$65,158	$67,623	$68,920	
Average No Rank Salary	-	-						
Average All Ranks Salary (Professor, Associate, Assistant)	$109,546	84%	19	$81,911	$83,633	$92,628	$102,020	
Average Male Assistant Professor Salary	$99,898	94%	18	$67,998	$72,427	$74,586	$77,182	
Average Professor Salary	$121,701	84%	19	$103,555	$108,383	$112,429	$121,562	
Average Associate Professor Salary	$101,913	89%	19	$84,017	$86,609	$88,406	$93,444	
Average Assistant Professor Salary	$98,209	94%	18	$69,028	$72,252	$75,348	$76,516	
Average Female Professor Salary	$119,001	84%	19	$103,152	$107,114	$109,502	$116,216	
Average Female Associate Professor Salary	$101,001	84%	19	$83,510	$86,603	$88,154	$93,357	
Average Female Assistant Professor Salary	$96,461	94%	18	$69,588	$71,906	$75,748	$76,518	
Average Female Instructor Salary	$57,375	27%	15	$54,723	$57,962	$59,570	$65,267	
Average Female Lecturer Salary	$70,396	88%	17	$62,725	$65,328	$67,877	$69,061	

Full-Time Continuing Faculty Salaries

Full-Time Continuing Faculty Salaries

	YOUR INSTITUTION			SYSTEM PERCENTILES			
	REPORTED VALUE	% RANK	N	20TH	40TH	60TH	80TH
Average Professor Salary (Continuing for Current Year 2015	-	-	37	$77,842	$88,267	$94,140	$103,920
Number of Continuing Professors (Standard)	-	-	36	21	35	49	78
Average Associate Professor Salary (Continuing for Current Year 2015	-	-	37	$64,811	$69,632	$76,409	$84,402
Average Assistant Professor Salary (Continuing for Current Year 2015	-	-	37	$54,445	$58,757	$62,368	$74,879



Average All Ranks Continuing Faculty Salaries

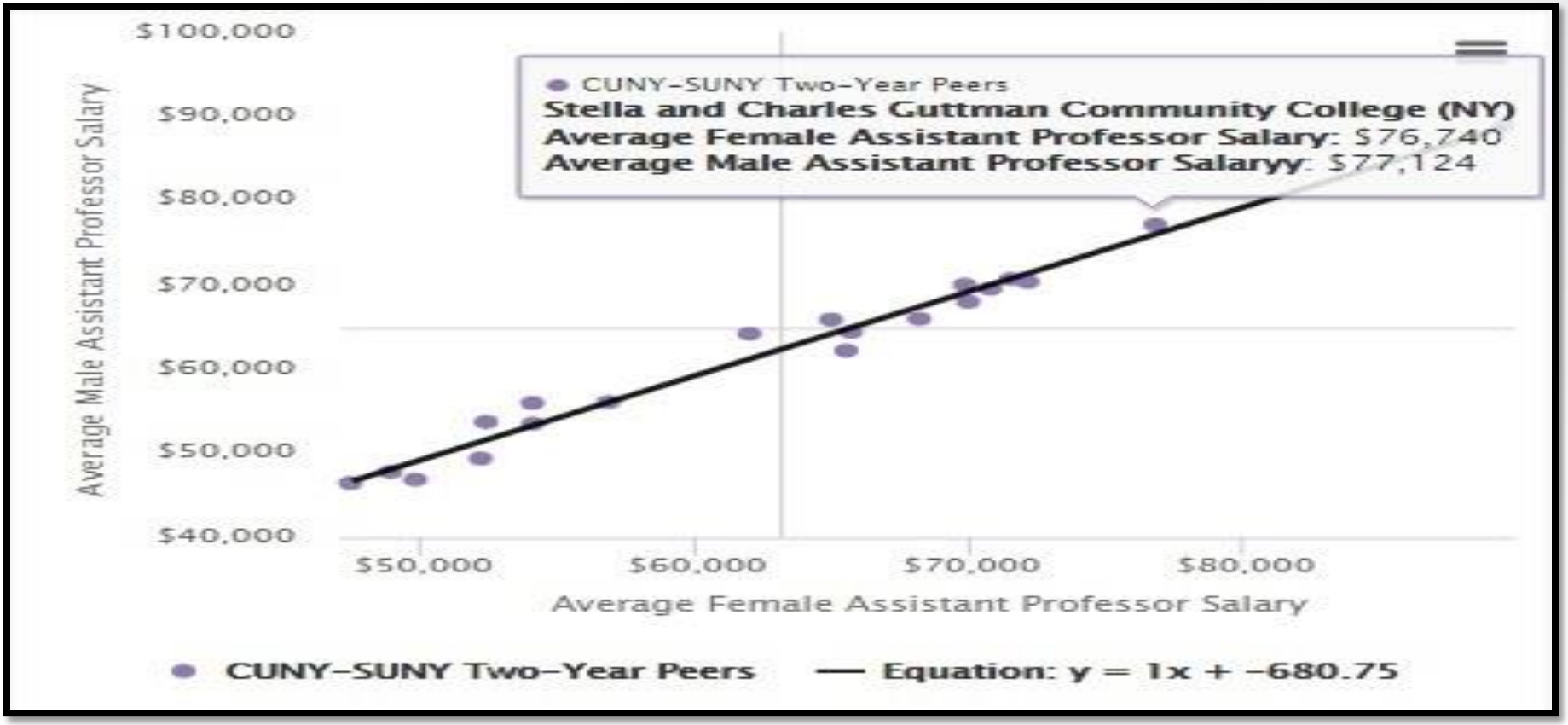
INSTITUTION	BENCHMARK
Mohawk Valley Community College (NY)	5.47%
Finger Lakes Community College (NY)	4.44%
Stella and Charles Guttman Community College (NY)	4.03%
Fulton-Montgomery Community College (NY)	3.92%
Tompkins Cortland Community College (NY)	3.62%
Orange County Community College (NY)	3.54%
Sullivan County Community College (NY)	3.54%
Niagara County Community College (NY)	2.98%
CUNY Bronx Community College (NY)	2.58%
Corning Community College (NY)	2.52%
CUNY LaGuardia Community College (NY)	2.38%
CUNY Kingsborough Community College (NY)	2.38%
Columbia-Greene Community College (NY)	2.21%
CUNY Queensborough Community College (NY)	2.08%
CUNY Borough of Manhattan Community College (NY)	2.03%
CUNY Hostos Community College (NY)	1.93%
SUNY Westchester Community College (NY)	1.52%
Monroe Community College (NY)	1.35%

- "All Ranks" allows for analyses whether your institution have rank faculty or not.
- Continuing faculty constitutes a unique group that generally earn higher salaries.
- Percent salary increases are important to benchmark for recruitment and retention of full-time faculty.

Exploring Gender Differences in Salary

- Assistant Professor salary analyses largely allow for pre-compounding assessment.

- Two-year peer analyses allows for gender disparity analysis by value using regression.



Average Retirement Benefit – All Ranks

INSTITUTION	BENCHMARK
Delaware Technical Community College-Stanton/George (DE)	$18,282
CUNY Bronx Community College (NY)	$16,860
CUNY Hostos Community College (NY)	$16,860
CUNY Borough of Manhattan Community College (NY)	$16,860
CUNY Queensborough Community College (NY)	$16,860
CUNY LaGuardia Community College (NY)	$16,860
CUNY Kingsborough Community College (NY)	$16,860
Delaware Technical Community College-Terry (DE)	$15,584
Kapiolani Community College (HI)	$12,754
Northwest-Shoals Community College (AL)	$12,367
University of Hawaii Maui College (HI)	$12,315
Honolulu Community College (HI)	$12,243
Windward Community College (HI)	$12,190
Kauai Community College (HI)	$12,170
Leeward Community College (HI)	$12,120
Nunez Community College (LA)	$12,103
Hawaii Community College (HI)	$11,933
Louisiana State University-Eunice (LA)	$11,143
University of Cincinnati-Clermont College (OH)	$10,928
SUNY Westchester Community College (NY)	$10,720
University of Cincinnati-Blue Ash College (OH)	$10,417
Monroe Community College (NY)	$10,130

- Retirement benefits account for approximately one-third of benefits and constitute the largest major benefit.
- For the first time, institutions can benchmark average retirement benefits.
- Institutions can use these data to establish competitive match programs relative to peers.
- Competitive matches are a major incentive for retaining full-time faculty long-term.

Average Professor Compensation

INSTITUTION	BENCHMARK
SUNY Westchester Community College (NY)	$194,656
Miami University-Hamilton (OH)	$145,776
CUNY Queensborough Community College (NY)	$142,376
CUNY Borough of Manhattan Community College (NY)	$139,998
CUNY Hostos Community College (NY)	$138,927
CUNY LaGuardia Community College (NY)	$138,104
CUNY Bronx Community College (NY)	$137,655
CUNY Kingsborough Community College (NY)	$135,585
Kent State University at Tuscarawas (OH)	$131,991
Kauai Community College (HI)	$131,612
Niagara County Community College (NY)	$130,829
Miami University-Middletown (OH)	$129,335
Kent State University at Stark (OH)	$129,154
Windward Community College (HI)	$126,954
University of Hawaii Maui College (HI)	$126,498
Montgomery County Community College (PA)	$126,464
Kent State University at Trumbull (OH)	$126,062
Wright State University-Lake Campus (OH)	$125,605
Kent State University at Ashtabula (OH)	$125,206
Leeward Community College (HI)	$124,971
Hawaii Community College (HI)	$124,923
Fulton-Montgomery Community College (NY)	$124,892

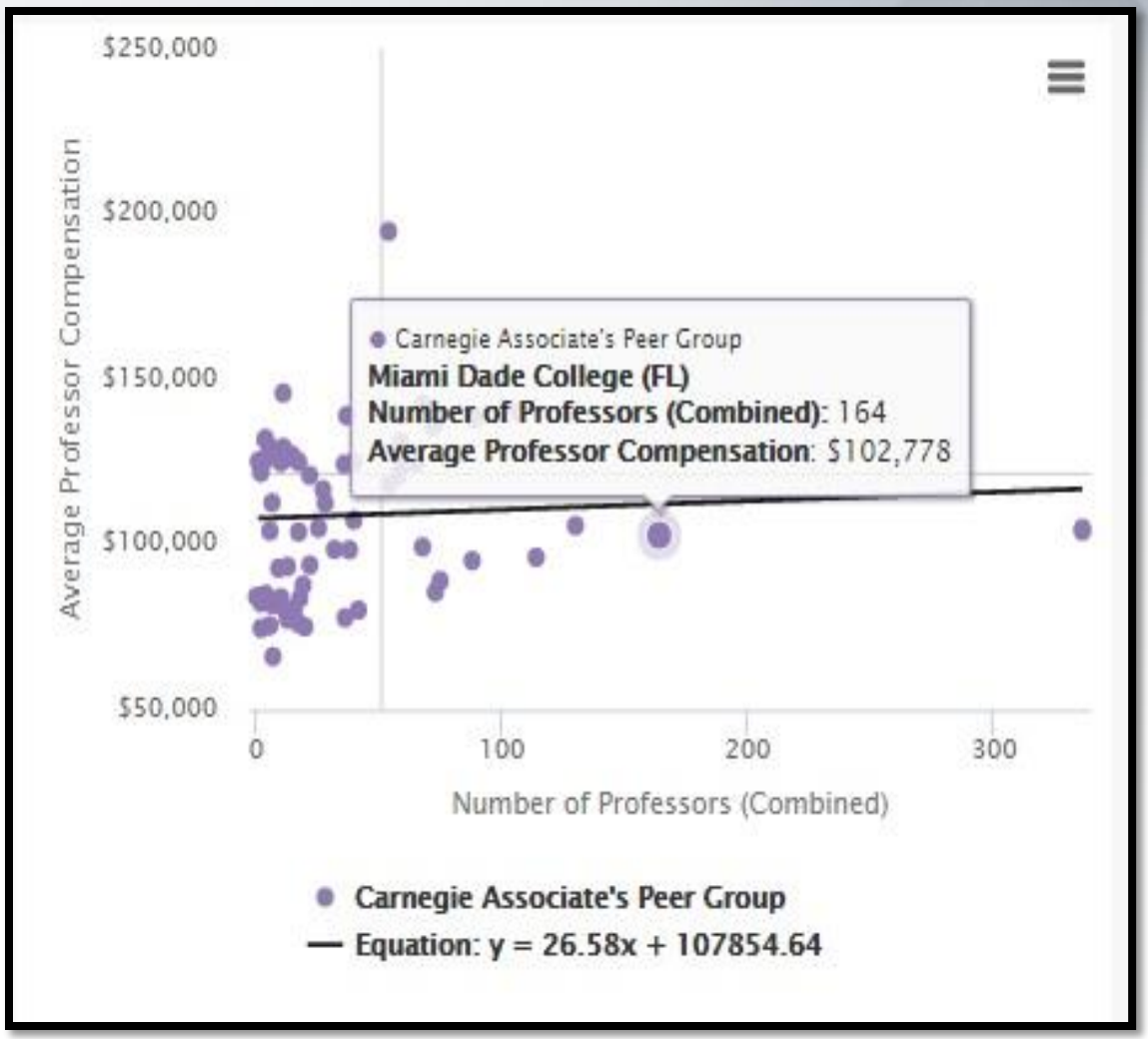
- Retirement plans offer the opportunity to shift institutional expenditures and revitalize disciplines.
- Institutions can use these data to explore Professor compensation relative to peers.
- Retirement plans can generate substantial savings over a five to seven year period for an institution.
- For the first time, institutions can benchmark relative Professor compensation costs.

Average All Ranks Compensation

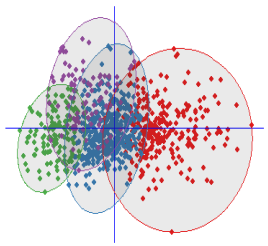
- Comparing "All Ranks" compensation is useful for benchmarking comparable institution.
- Institutions can compare their institution to peers based upon median percentile ranks.
- Total compensation per full-time faculty can comprise 60 – 95 percent of total instructional costs.

Average Professor Compensation by Total Professor Number

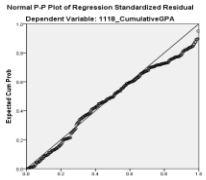
- Total number of Professors may influence the total Professor compensation.
- Comparing number of total Professors relative to total Professor compensation is a strong indicator for understanding peer composition.
- Understanding how much higher or lower Professor compensation is relative to total Professors can be a useful first step in benchmarking.



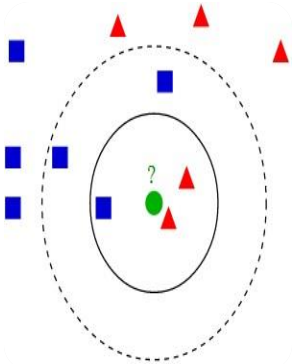
Utilizing Cluster Analysis for Benchmarking



- *Cluster analysis* is a series of statistical techniques designed to identify how similar (or different) some observations are from one another.

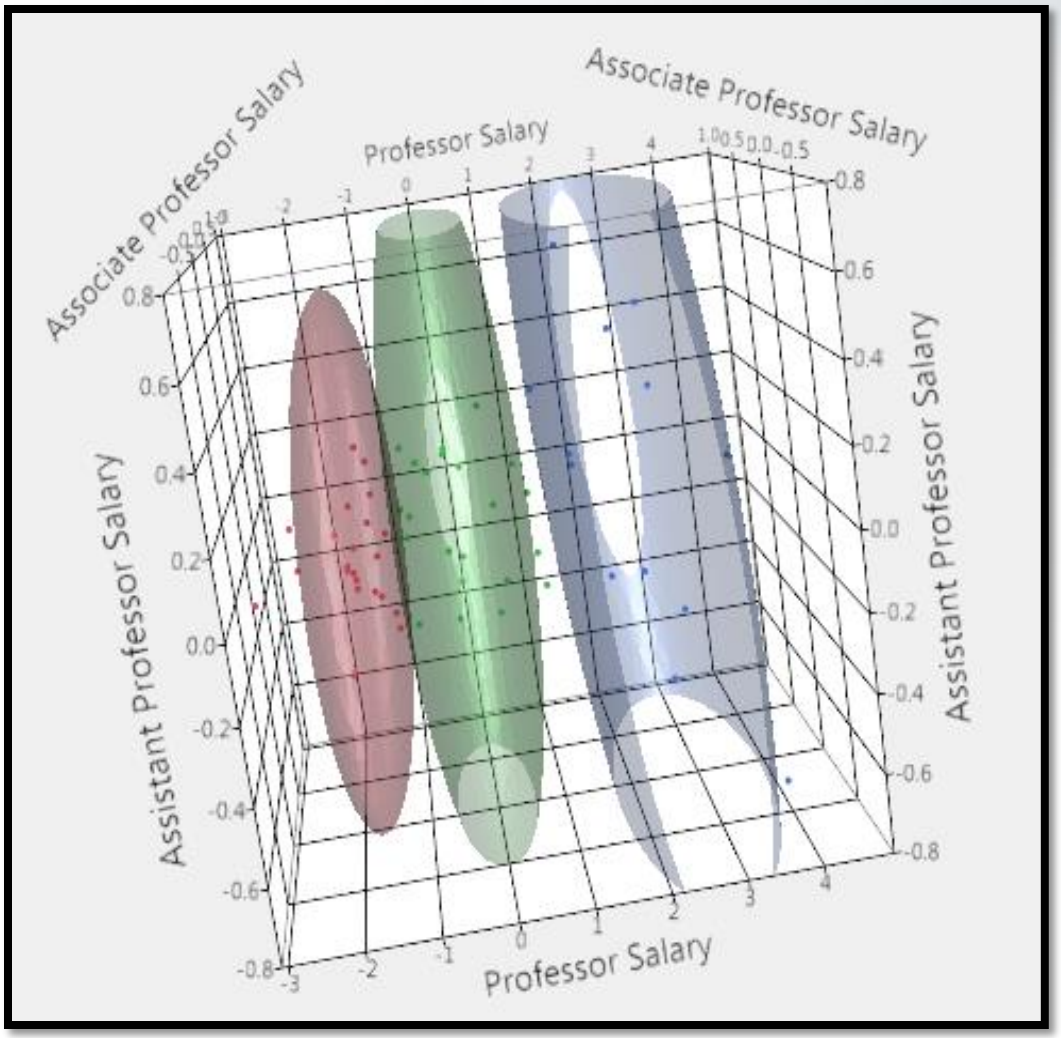


- Cluster analysis is a data classification technique rather than a test for statistical significance.



- The k-means cluster analysis approach is designed to assess how close data points are to a specific point based upon majority. If k=3, red triangle. If k=5, blue square.

Exploring Salary Inversion by Rank



- Assistant Professor salaries are tightly clustered between -0.2 and 0.4 standard deviations.
- Associate Professor salaries are largely clustered between -0.5 and 0.7 standard deviations.
- Professor salaries are clustered between 0.0 and 4.5 standard deviations.
- Variation in faculty salary appears to increase by rank.

Predicting Salary Inversion

Model: (DV) Full-Time Faculty Salary All Ranks - AAU (Adjusted R^2= .635)

Variable Name	Standardized Coefficient	Significance	Lower Bound	Upper Bound	Zero Order	VIF
Variable						
Constant	(*B* = 67.137)	.000***	43.985	90.290	---	---
Institutional Control (2= Private)	.532	.000***	16.470	35.965	.620	1.518
Assistant Professor	-.522	.000***	-.271	-.112	-.518	1.833
All 5 Colleges (Business, Dentistry, Engineering, Law, Nursing)	.124	.146	-.630	4.129	-.005	1.099
Total Number of Professors	.538	.000***	.037	.078	.113	1.394

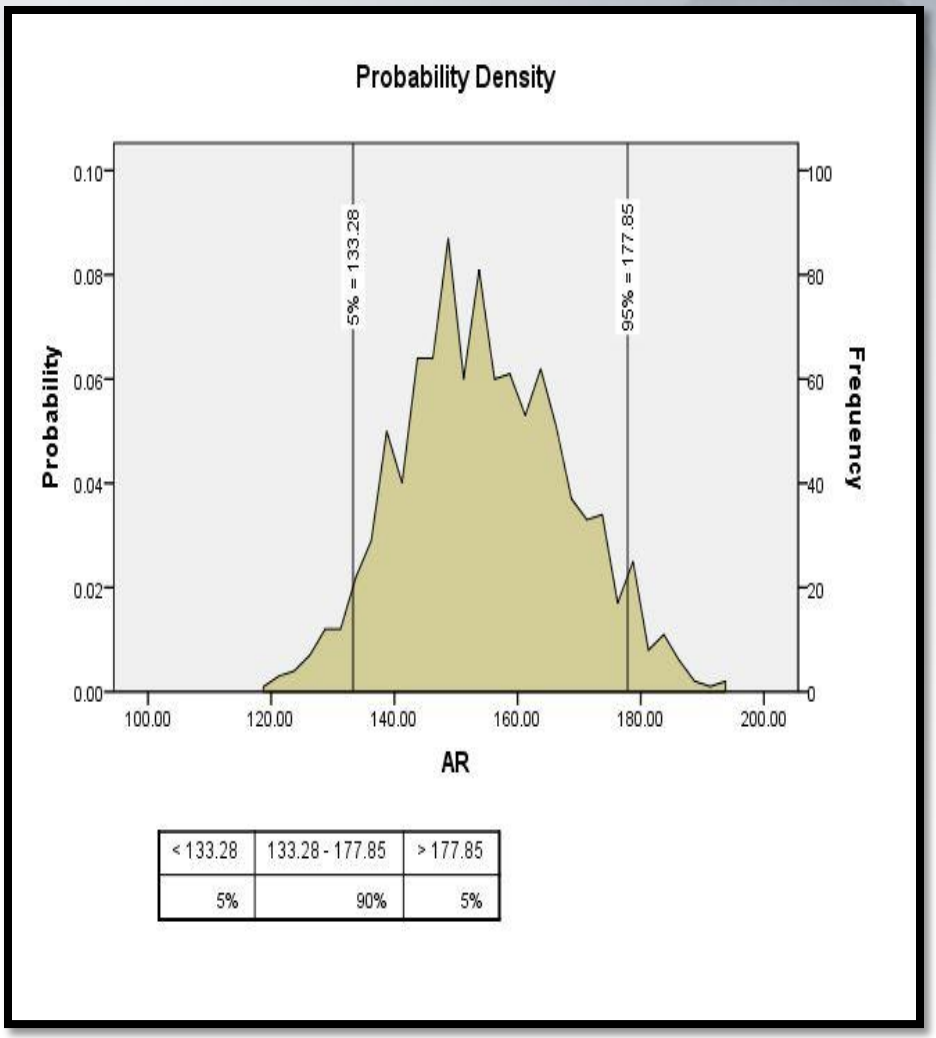
* - $p \leq .05$ ** - $p \leq .01$ *** - $p \leq .001$

What good is perpetually lagging data, even if the modeling is quite good?

- Data for Academic Year 2015 – 2016 were collected and submitted January 29, 2016.
- Data were analyzed, verified, and released April 13, 2016.
- Too short a turnaround for 2016 – 2017.
- Data decisions are implemented for 2017 – 2018 based upon 2015 – 2016 benchmarked data.

Projection Utilizing Faculty Compensation Survey Data

- Monte Carlo methods allow for the simulation of estimated future costs. When simulating the total full-time faculty compensation, 1,000,0000 times, a 90 percent confidence interval can be estimated.
- For all full-time faculty, the average AAU compensation is approximately $149,000.
- For all full-time faculty, there is a 5% chance an AAU institution's compensation cost will be above $177,850. For all full-time faculty,, there is a 5% chance an AAU institution's compensation cost will be below $133,280.
- Monte Carlo sensitivity analyses allow for the researcher to manipulate variables to influence projections.

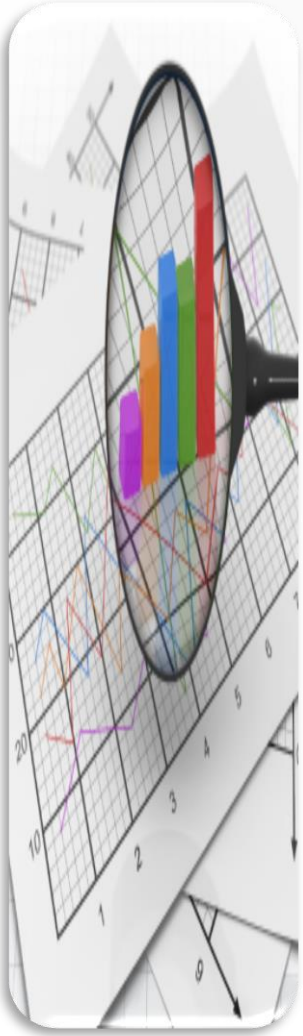


< 133.28	133.28 - 177.85	> 177.85
5%	90%	5%

Benchmarking Value of Faculty Compensation Survey

- Explore Salary Inversion
- Explore Continuing Faculty Salaries
- Explore Gender Differences in Salary
- Explore Retirement Benefits
- Explore System Reports
- Explore Total Compensation
- Predict Compensation Expenditures
- Project Compensation Expenditures

Faculty Compensation Survey Access



- Results portal and a complete dataset are available for institutional planning purposes for $1,000 for non-participating institutions.
- Participating institutions may obtain results portal access and a complete dataset for $750.
- Data for 2015 – 2016 FCS will be accepted until May 15, 2016.

Take Away: Facilitating Institutional Improvement

- Even the best data systems provide only a case study approach. External benchmarking provides unique data for institutional improvement.

- Peer, aspirational, comparator data are different so it is important to think about those differences for peer selection purposes.

- Unit and institutional improvement comes from your ability to know your strengths and limitations as an institution relative to peers.

Questions