

University of Colorado Boulder Use of Academic Analytics Comparative Data In Academic Program Review Fall 2012

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Revised for posting 9/3/13,
<http://www.colorado.edu/pba/peer/acanalytics.htm>



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9/2014 what I'd do differently now

- Focus on individual measures, not indices, with volume measures as important as per capita, or unit choice
- Tailor list of comparison institutions with department input and analysis of discipline associations elsewhere, to maximize dept learning
- Ditto, selection of individuals
- Look at PhD programs as well as departments
- If must have 1 comparable measure, do new index based on volume and per-cap, vs. AAU plus others based on Carnegie classification
- Watch carefully any “single metric for all” use such as that in Academic Prioritization <http://www.colorado.edu/prioritization>

Fall 2012 Comparisons

- This document describes methods and what we'd do differently 9/2014
- The Fall 2012 comparisons are based on the Academic Analytics 2010 database. They are OBSOLETE – the data are old and the methods are outdated.
- The website still exists – access only if you are working with fall 2012/early 2013 program review self-studies, or need sources of research measure in first round of Academic Prioritization.
 - Website is passworded <http://www.colorado.edu/pba/peer/comparisonspw/index.htm>
- AA data are shown for most A&S natural and social sciences units, many A&S arts/humanities units, Engineering units, Business, Education, Journalism, and Law. Institutes, interdisciplinary programs, Music, and several departments/programs without PhD offerings are not included.

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CU-Boulder Program Review

- 7 year cycle
- For units in clusters – e.g., natural sciences and associated research institutes
- Run by Faculty Affairs with data from IR
- Data profiles have included tallies of pubs, books from Faculty Info System for years – no discipline correction



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Starting fall 2012 AA data were for

- Unit use in self-studies
 - If the unit wanted
 - No obligation to use or mention
 - Could use in any way
 - Faculty Affairs decision
- But we did produce tables, graphs comparing units to one another on a summary measure
- Results also available to reviewers



We used custom files from AA

- To separate TTT vs. others for us and comparison institutions
 - TTT = Tenured and tenure-track
 - Boulder has ~900 non-TTT research faculty, some in standard departments and programs
 - Cannot separate in peer ID tool (yet!)
- To learn, and to control



Using custom files meant

- Own website with Excels, graphs, text
- Own non-disclosure agreement
- We ran all departments but publicized only to departments with self-studies due soon -- social sciences due December 2012
 - With emails, open houses, one all-departments meetings



Differences from standard portal

- Departments only, not programs
- AA1 (finest level of discipline) only
- TTT only
- Own summary measure, Index01
 - Fewer inputs – 8 vs. 15 in standard FSP
 - Includes number of faculty as 1 of 8 measures
 - Combined w equal weights on Z's capped at 3.0
 - If doing 2014 would weight volume measures much more heavily (vs. per capita), or have two



We excluded

- Entire disciplines (AA1's) where <60% of the UCB dept's TTT had *any* match
 - E.g., Art and Art History
 - Better to omit entire discipline than misrepresent
- All depts under the 10th percentile on N of faculty for the AA1 – **would not do this again**
- All CUNY, with 7-8 departments per AA1



We showed

- Both index01 and individual measures
- UCB position on distributions of depts within AA1's, not just percentile points
- Every dept, with school and dept name
 - In the 51 UCB AA1's, with all measures
 - In the 122 other AA1's, without measures
 - This was key in letting depts find their peers!



Samples of materials

- Non-disclosure form (p 1 only)
- Website (top of page only)
- Measures matrix
- Index01 distribution over depts in an AA1
- Z-score distributions for all measures for one dept-AA1 combination
- Listings in Excel



Nondisclosure Agreement for Academic Analytics Data Planning, Budget and Analysis, University of Colorado Boulder

Please provide the following information.

First name

Last name

**Non-disclosure form
(p1; Qualtrics)**

Are you a CU-Boulder employee?

Yes

No

Next



[PBA Home](#) > [Institutional Research & Analysis](#) > [Comparing CU-Boulder with Peers](#) > [Academic Analytics at CU-Boulder](#)
UCB dept comparisons using Academic Analytics

Comparisons, CU-Boulder departments to others nation-wide, using Academic Analytics (AA) database

November 2012 UCB release **Website (pw protected)**


[Overview](#) (PDF, 21 pp, text augmented 12-3-12) – **Read this first!!** – contains

- Access conditions and cautions **Data, methods, and website obsolete as of 9/2014. Was Academic Analytics 2010 release.**
- Nov 2012 posting – the basics, methods
- Metrics
- November 2012 posting – Viewing and using the results including caveats on comparability
- Background on UCB's use of AA data
- Displays drawn from posted Excels and PDF's

-- All displays are ALSO in [this PDF](#), for convenience.

Results -- Remember, info about other schools cannot be disclosed by school name

- [Index01 distributions](#) (PDF, 7 pp) - Quick comparison of UCB departments/disciplines on the combination measure



Measures matrix – Red = in Index01

Matrix of measures and construction of Index01

Content of measure -- see time points and definitions in separate table


Shorthand for type of measure	Whose field name	Type of measure	Journal articles, publications	Citations	Books	Conference Proceedings	Awards	Grants	Grant dollars	Books+Conf proceedings
A	AA	Number of faculty checked for matches	NumFac	NumFac	NumFac	NumFac	NumFac	NumFac	NumFac	NumFac
B	AA	Volume: N of items/events	totpubs	totcits	totbooks	totconfproc	totawds	totgno	totgdol	totBooksConf
C	AA	Number of faculty with any matches	hasjpub	hascit	hasbook	hasconfproc	hasawd	hasgrnt		cannot calc
C/A	AA	Pct of faculty with any matches	pfacjp	pfacc	pfacbp	pcthasconfproc	pfacawd	pfacgrnt		cannot calc
B/A	AA	Volume per faculty (denominator includes those with none)	jppfac	cpfac	bppfac	confProcPerFac	awdpfac	gpfac	gdppfac	(no var)
B/A	UCB		JourPubs_Fac	Cites_Fac			Awards_Fac	Grants_Fac	GrantDol_Fac	BooksConfs_Fac
B/C	AA	Volume per faculty who have any	<i>jppauth</i>	(no var, could calc)	(no var, could calc)	ConfProcPerAuthor	(no var, could calc)	(no var, could calc)	(no var, could calc)	cannot calc b/c fac w any could overlap
D	AA	Volume, N of pubs eligible for citations		pubdenom						
B/D	UCB	Citations per pub eligible		Cites_Pub						
	AA	Dollars per grant						<i>dolpgrnt = totgdol/totgno</i>		

Names in *italics* exist in AA data definition list but were not sent in download, but could be calculated from what was sent

Names in tan shading are UCB calcs

Blue shading = input variables from AA matching -- all others are derived from the inputs

Red text: Vars used in UCB index01 through associated Z-scores calculated within AA1 (discipline) over all departments (after trimming very small depts)

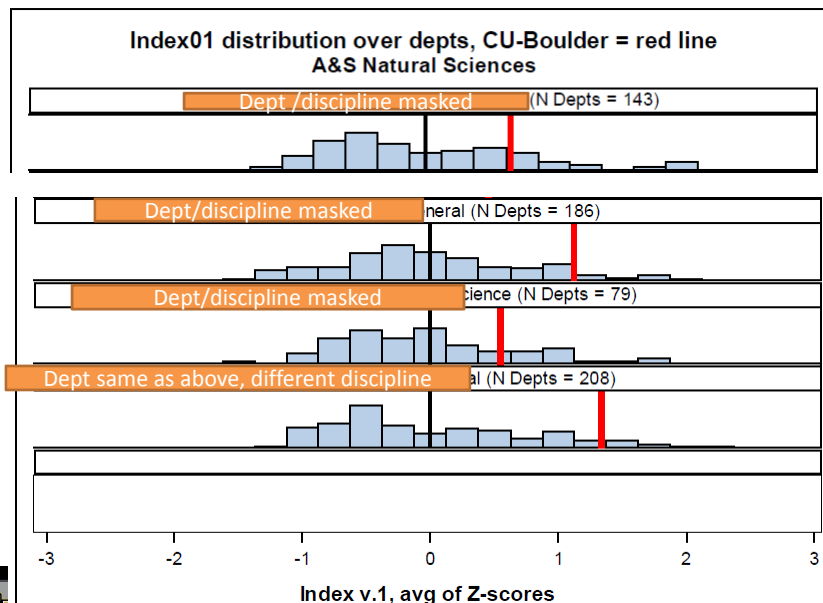


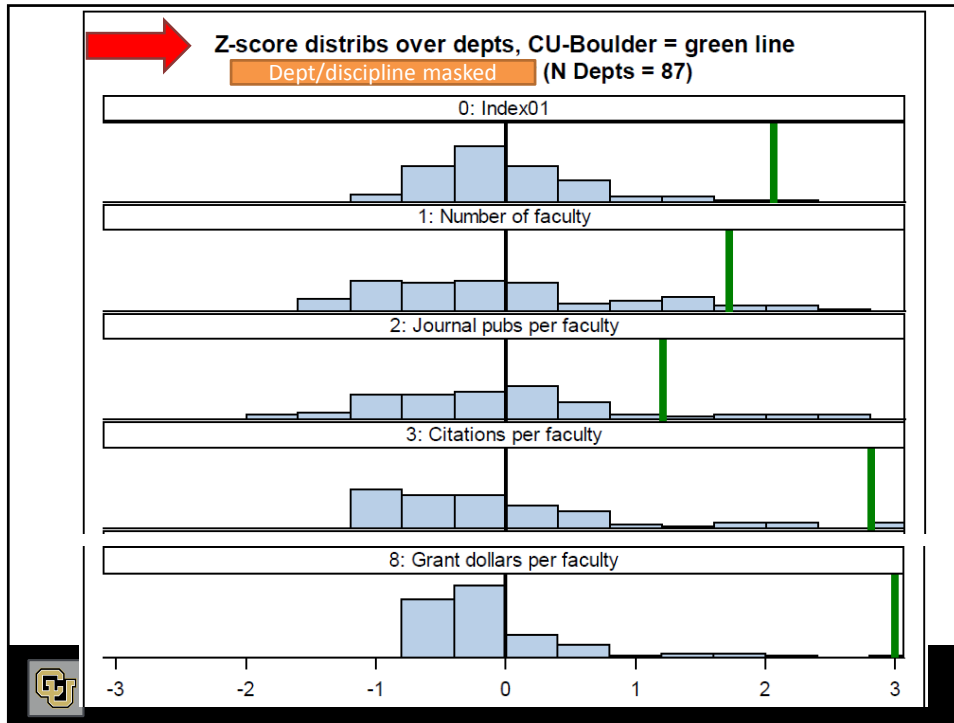
The eight inputs to Index01

- Number of (TTT) faculty checked for matches
- Journal articles/publications per faculty
- Cites per faculty
- **Cites per publication** 9/2014 – Nothing here on volume!!
- **Awards per faculty**
- Grants per faculty
- Grant dollars per faculty
- Books and conference proceedings per faculty



Index01 distribution over depts in an AA1





Listings – UCB departments

5	AAdbYear	UCBDeptCode	DeptCat	NDeptsCompared	NumFac	Index01	Rank01	TopPct01	BestofTopPct	Z_NumFac	Z_Awards_Fac
7											
41	2010	Depts and disciplines masked		162	30	0.1	60	36%	36	0.7	-0.1
42	2010	Depts and disciplines masked		60	9	0.4	16	26%	16	-0.7	0.1

Yellow – based on Index01
Blue – Z-scores
Also measures of volume, per-faculty, and pct of faculty with (pubs, etc.)
Plus means and SD's for the 8 inputs for the AA1

Only measure used in Academic Prioritization

Plus similar listings

- With summary stats for each AA1 over
 - All schools in analysis
 - AAU schools
 - CU-Boulder
 - Non-AAU
- For each school * department * AA1
 - Sufficient info to allow recalculation of Index01 based on selection of peers



Reception

- Short notice (it was)
- Mandate (meeting w Faculty Affairs diffused)
- How stand vs. NRC
- Wrong journals, missing journals
 - But none suggested additions
- Excel tips
- Oh, it's updated annually? That's good
- Some embraced
- *Mostly* limits on comparability



Are the results comparable over schools? Watch out for

- Qualitatively different types of depts
 - 2 psych depts w 75+ faculty each are solely clinical. Can't tell from AA data.
- Differential activity in journals, grant agencies, etc. not covered by AA
 - E.g., you're heavy industry funding, others aren't
 - E.g., you're a subcontractor, others aren't

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- Differential emphasis on creative works
 - Your faculty paint, others' faculty write articles
- Differential activity by non-TTT
 - UCB physics works with/through joint institute with NIST, is poorly represented by TTT only
 - Clinical faculty may contribute or not, may be classified correctly or not
- Differential proportion young faculty, especially when books are key
- Dept – AA1 mismatches
 - Got some surprises – biggest threat to comparability

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Dept – AA1 mismatches -- Examples

- Speech, Language, Hearing Sciences, in AA1
Speech and Hearing Sciences
 - But some peers are in AA1 Communication only
- Psych and Neuroscience, in both AA1's
- UCB Education, in AA1 Education, General
 - But some peers are in several detailed AA1's instead, that cover fields we have, like teaching, and research methods. Business has similar issues.
- Solution requires dept input and more than the custom files we requested from AA



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