

CU-Boulder Recent and Planned Use of Academic Analytics

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AAUDE, Evanston, April 2015

Academic Analytics Implementation Working Group



Also available on AAUDE website
(members only).
Presented April 11 2015

Second annual report

- Background – See 2014
 - AAUDE → Meetings → 2014 → Working Group: Academic Analytics Implementation → Presentation on data use, Lou McClelland
 - <http://aaude.org/system/files/documents/member/admin/groups/aa-implementation/cu-boulder-use-201404.pdf>
- Today
 - Follow up on 2014 plans
 - Recent doings
 - Plans
- Details of today's presentation: March 2015 update
<http://www.colorado.edu/pba/peer/acanalytics.htm> - Note public posting OK'd

2014 plan: Revamp submission

- Four separate files: People, units, units - AA disciplines, people - units
 - Very satisfactory – use internally and in discussion with AA
- Add research institutes as units in the comparative db
 - AA considers as type department
 - Mixed result – good to have there but disruptive in comparisons because
 - People are selected for research and per-capita values are out of line
 - Each institute is associated with several disciplines
 - No method of combining across disciplines works
 - Continuing work with Matt Horvath; have new release w/o institutes
- Insisted that AA match *all* submitted people including excluded-from-comparison database, titles RA (Rsrch Assoc), SrRA (rank=9=other)
 - AA puts only the TTT and adjoint and research-professor lines into comparative db
 - Happy we insisted – see sample use →

Lesson:

The excluded-from-rollup *do* have matches and work

- N 974 – all non-TTT, rank “other” -- ID with “IsExcludedFromRollup”
- 71% have h-indices > 0, ranging to 710 (physics of course), median 9
 - Other 19% could match to pubs/no cites, or no pubs, or no match attempt
 - Downloads/data mart have h-indices and individual matches, but not counts, for people excluded
- Use: Incremental articles, Institute Arctic/Alpine Research (INSTAAR)
 - 31 associated TTT → 1445 articles (4-year period, unduplicated)
 - 32 associated RA/SRA → 360 *additional* articles = 25% increase
 - The 360 had no INSTAAR TTT as co-author

Major activity -- User group

- Current and potential users
- Group formed with meeting in January w several pre meetings
 - Provost, VC research, faculty affairs, deans of A&S and Engineering, 3 research institute directors, IR
- Consider avenues = ways to spend time
 - Infrastructure; characterize ourselves; improve AA collection
 - Characterize/compare individuals, units/PhD programs, whole campus
 - AA data and vizzes to our FIS and VIVO
 - Explore interdisciplinary work
- *Lesson: Good; increased awareness; little eliminated, lots suggested*

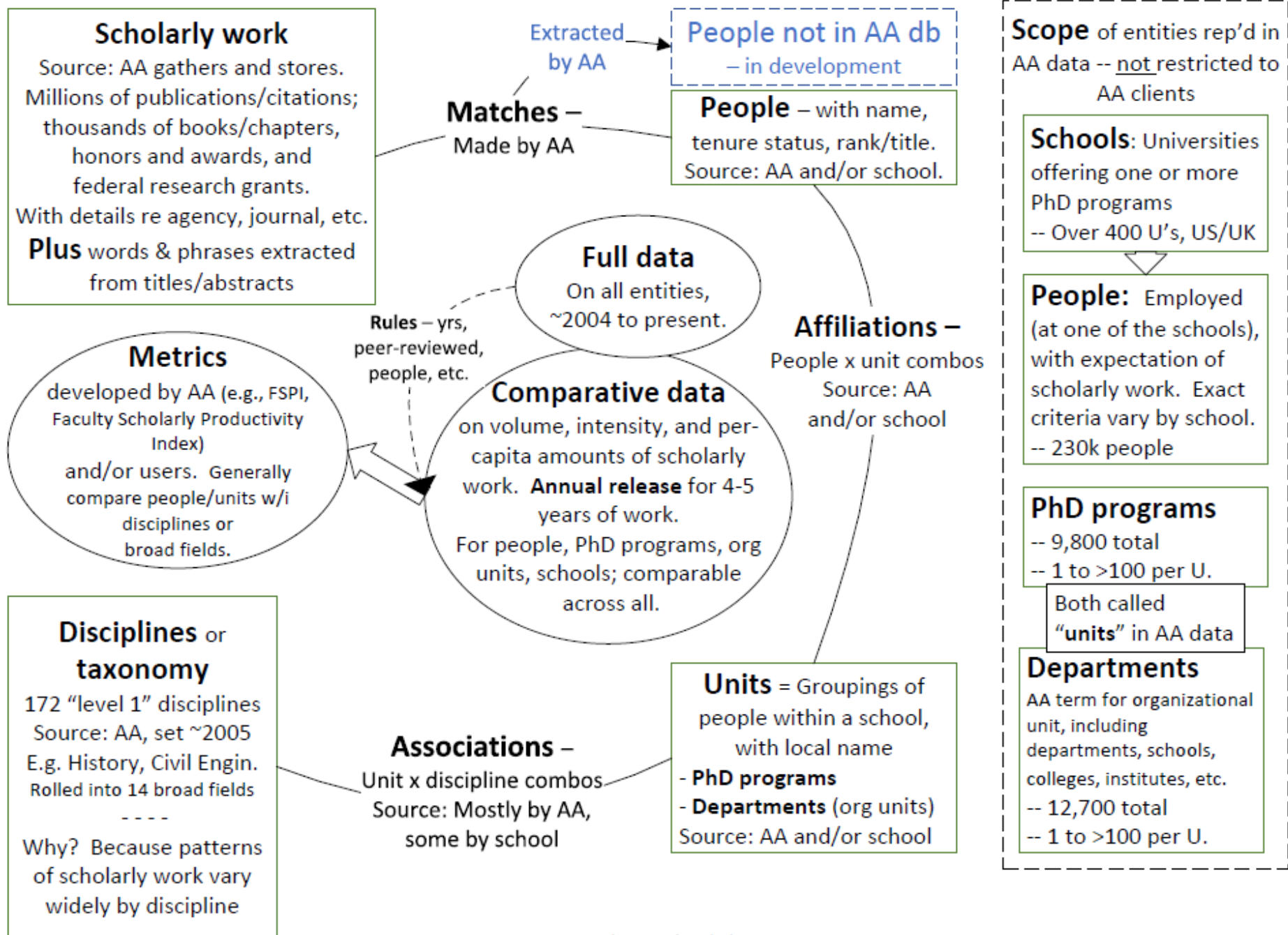
Major activity – AA campus visit

- February 23-24
- Pete, Mike R, Matt H, Matt M
 - (Dave R injured shoveling snow in VA, didn't come)
- 40% time in formal sessions
 - Faculty Info System – very productive
 - Interdisciplinary - brainstorming
 - IR, submission
 - Open house with other users
- Rest of time with Lou
- *Lesson: Some gain, some fun, lots of connection, Lou writes it down*

Major activity – Explaining AA

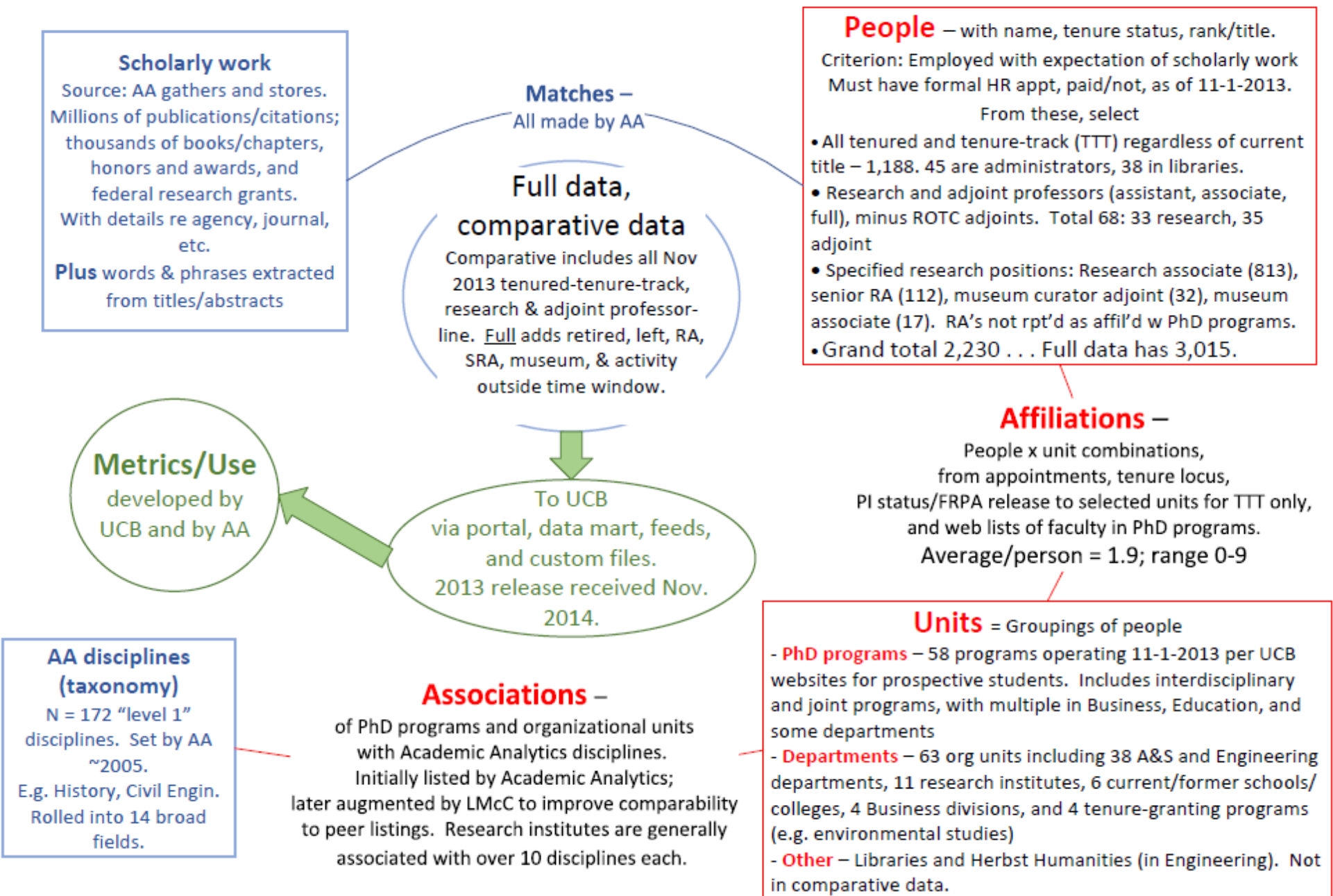
- Diagrams, in Visio – next two slides – to explain
 - What AA does
 - How CU-Boulder submission fits in, including how generate submission
- Diagrams useful –
 - Have used with provost to programmers, people new to AA and not
 - AA says “we’ve always had trouble explaining what we do”
- Also: Measures matrix – have not used much
 - E.g., volume vs. per-capita
 - Available from <http://www.colorado.edu/pba/peer/acanalytics.htm>

Academic Analytics gathers, stores, and links data



CU-Boulder in Academic Analytics, with totals for 2013 release

Key: AA work. CU-Boulder annual submission. Work involving both.



Major activity – Math and applied math

- Two separate depts at Boulder
- Math says – We look low because most comparison math depts actually include applied math activity and ours doesn't
 - Check: 18% of AAU's have an "applied math" dept; all have a math dept
- What I did
 - Established that the two disciplines have different publishing patterns
 - Used dept names, PhD programs, discipline assignments, and websites
 - Created combo discipline from unduplicated people in each (AAU only)
- Finding: A combined CU-Boulder math/applied math dept would stand far higher than either did alone in 2010 or 2012 release
 - *Provost and math chair much appreciated*

Major activity – New department as client

- Chem Engineering – wants own dept vs. others for website
 - E.g. 10th in citations per faculty *Updating 2011*
- Sent 18 files for PhD programs in discipline chem engineering
- Chair reaction: From *exciting, great* to *unuseable* in space of 4 hours
- Why? Dept sizes (N of faculty) did not fit chair expectations
 - Cornell: program >> dept = chair; program includes web list
 - Irvine: program = dept >> chair; AA includes affiliated
 - Northwestern: program ~ = dept = chair = core from web
 - Penn: program = dept << chair. AA is core only.
- *Lessons* →

Lessons -- New department as client

- Client should review demographics of comparison units *first*.
 - Reconcile before doing more
- “Core faculty” are sometimes in AA counts/lists, sometimes not
 - Client sometimes wants, sometimes does not
- At some schools a PhD program and a dept in same discipline may differ substantially
- Users can review far more easily if they can see faculty names elsewhere
- Users should get a URL for a dept or program, from AA

Off-label use – Dollars per grant

- VC research, deans, IR notice across disciplines: UCB consistently has
 - High number of grants per person
 - High grant dollars per person
 - But low grant dollars per grant
- Evidently from many small grants, rather than few big ones
 - Pinning down would take detailed grants data for other schools – not in downloads, portal, or data mart
- Several entities at CU-Boulder are addressing
- *Lesson: AA data can be useful across disciplines*

Off-label use: Women/gender studies org

- April request, provost office: How many AAU peers have
 - A department of Women and Gender Studies? 24
 - Separate units, one in Women's Studies, one in Gender Studies? 0
 - A non-departmental unit of Women's Studies or WGST? 4
 - A unit of WGST combined with something else (e.g. Ethnic Studies)? 2
 - *No unit assoc'd with discipline Gender Studies in the AA database* 30
- Did entirely from aa_fd_allunits_taxonomy
- Sent additional detail too including school/unit names
- Summary already went to Regents
- *Lesson: The AA database of PhD program and department/unit names is a great resource*

Plan: Faculty Information System

- CU-Boulder centralized FIS, long-standing
 - Home-grown Oracle db, interface to HR, annual faculty input of activity
 - Uses Symplectic Elements to gather, store, curate publications (Web of Science, PubMed, others), eventually link to grants, equipment, buildings . . .
 - Publishes some material to VIVO
- AA honors/awards – Build structure and sustainable process
 - Will be live in VIVO 4/15/15
- Then publications – more complex, AA not sole source; want 2-way street
- CU-Boulder Faculty Affairs responsible; IR helps some
- Session at campus visit: Faculty Affairs FIS director and tech staff; Mike, Matt M, but Matt H talkative too. Phone conf 4-9-15, MM and MH
- Summer 2015 visit planned

Plan: Interdisciplinary

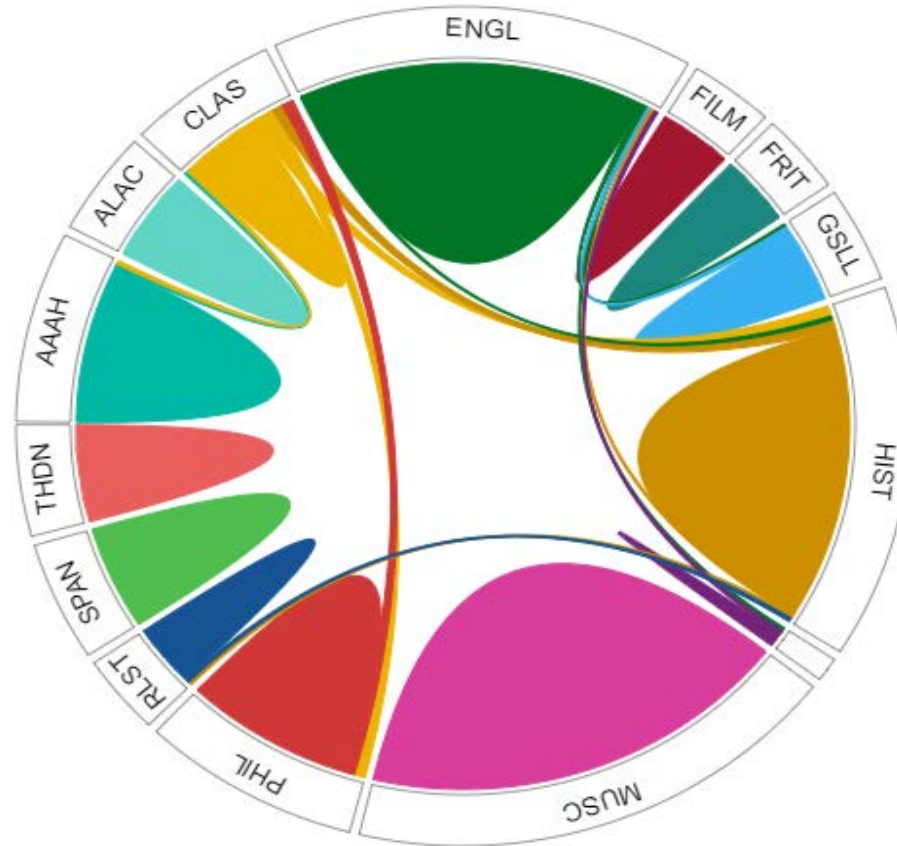
- Major session in campus visit
- Want to ID a set of people, find similar, and characterize their work
- Get people from list, from words/phrases/topics, from org affiliation, etc.
 - E.g. had grant from NASA with 'bio' in title
 - E.g. affiliated with XX research institute
 - E.g. "climate change" → Faculty Profile System → list of people
- Characterize qualitatively as well as quantitative
 - E.g. keywords in abstracts and titles, journals, institutions, degree institutions
 - Collaborations
 - Shares of various markets
 - *And people's names*

Plan: Show us the data! Have asked AA to show

- Discipline demographics
 - Publication etc. patterns – distributions as well as mean/median and SD, compared – *don't keep the facts about physics a secret*
 - Number of schools with both dept and PhD program, with dept only, program only
 - Are those depts/programs/people in them associated with other disciplines as well?
 - Patterns of dept/program names
- Program/dept demographics
 - Number of faculty, pct TTT, pct tenured, years since degree, pct excluded from rollup
 - New segment of the petal graph
 - Where terminal degrees were earned
- Profiles of institutions – what depts. and programs, what disciplines, relationships among all these

Sample: Show CU-Boulder *submitted* data “Characterize ourselves”

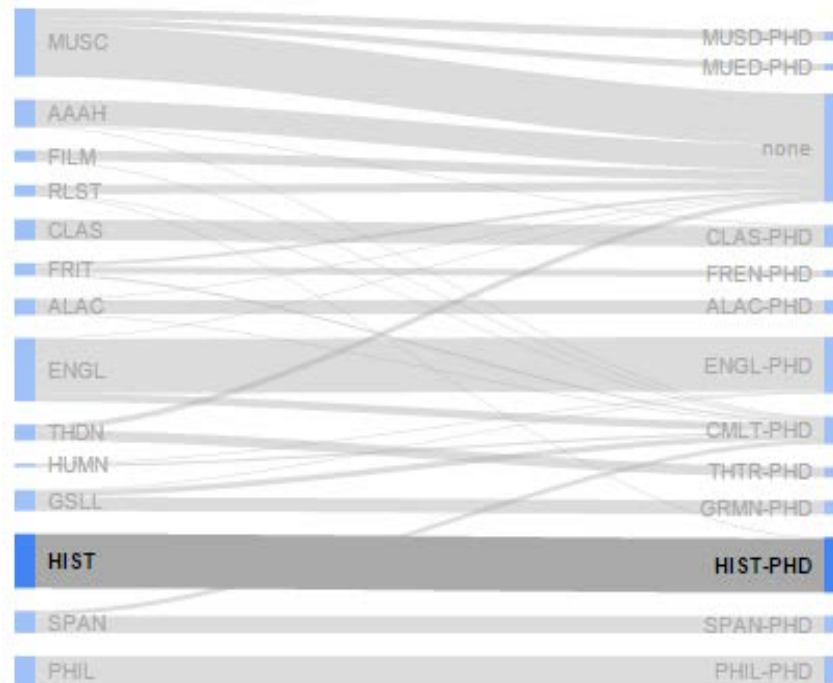
- E.g. – A&S arts/humanities, plus music
 - Relative size of departments and overlap from joint tenure and appts



Arts/humanities and music – con't

- Relationship of depts. to PhD programs
- Quick Sankey flow plot w Google graphics -- well received

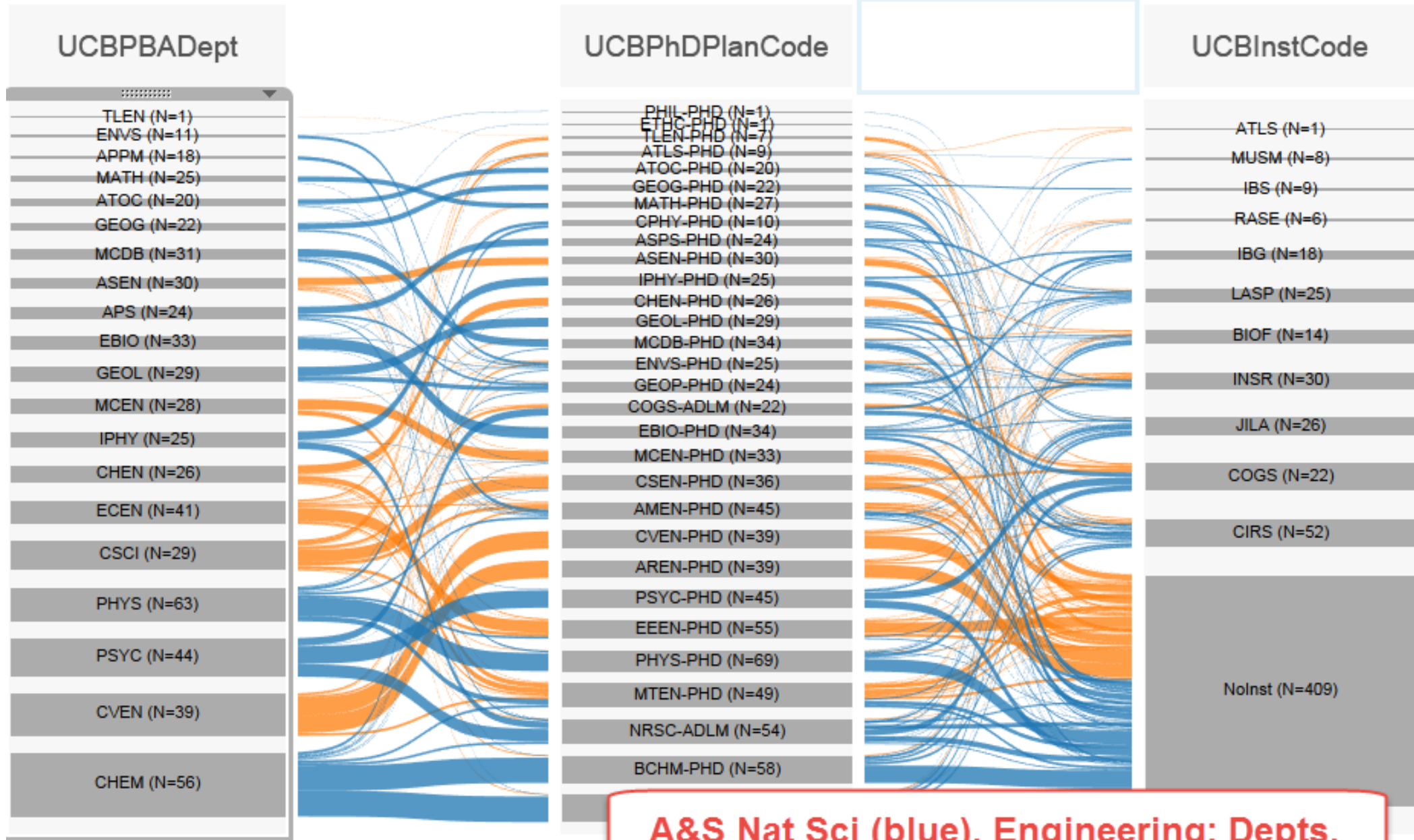
Dept (HIST
Highlighted)



PhD
program

Sample: Sankeys in Tableau v 9.0

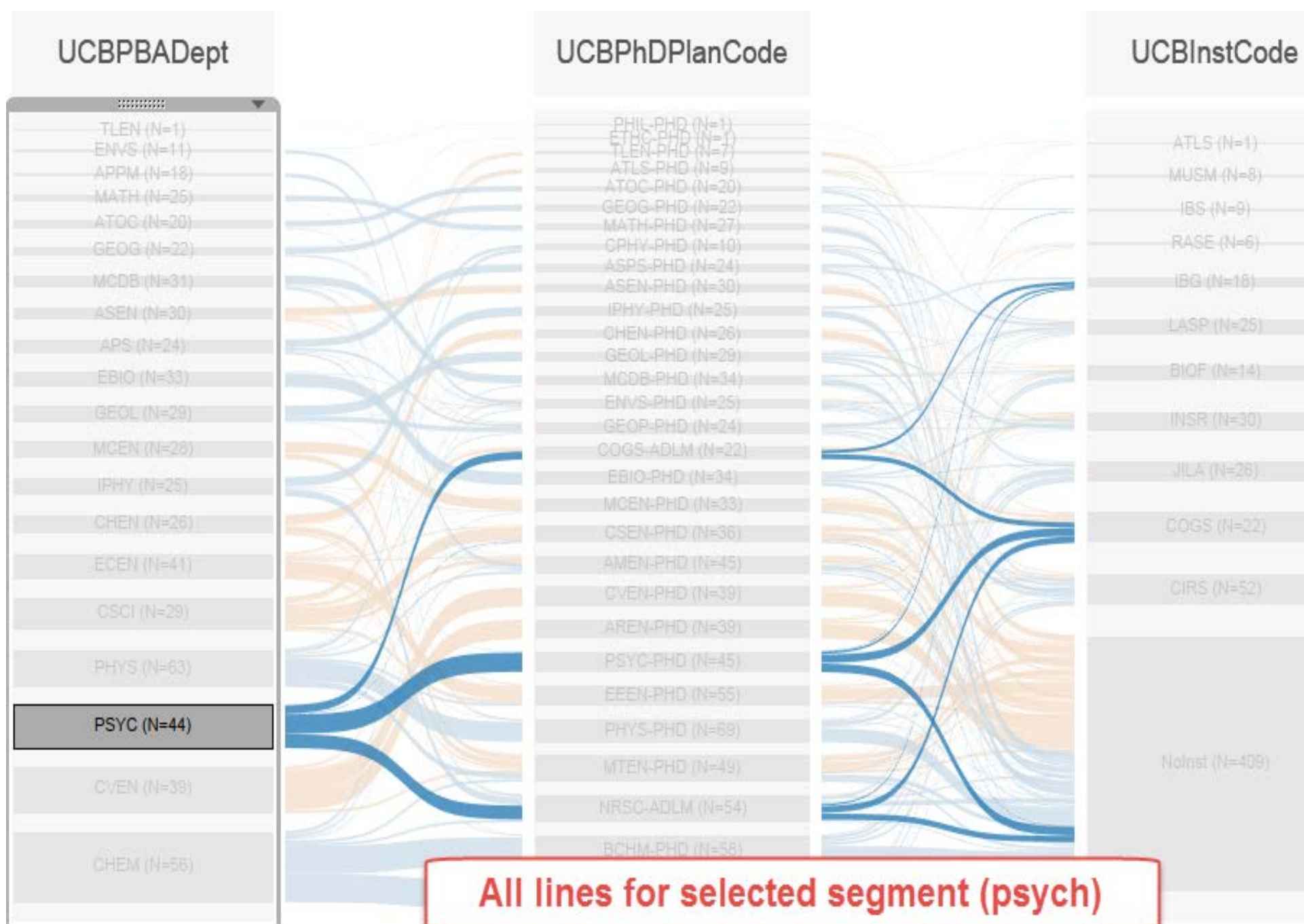
- Draft draft draft!!!! Readded a few days ago
- Row of input data
 - Person x dept x PhD program x research institute combination
 - One person can have one row or many
- Used CU-Boulder 2013 submission
- Set up to show only TTT plus research and adjoint profs
- Combination of AA variables and UCB variables
- Available on Tableau public from <http://www.colorado.edu/pba/peer/acanalytics.htm>



Color legend (UCBPBADeptCollegeDivision):

- A&S-NS
- Engineering

A&S Nat Sci (blue), Engineering: Depts, PhD programs, institutes



All lines for selected segment (psych)

Color legend (UCBPBA Dept College Division):

Employee Summary

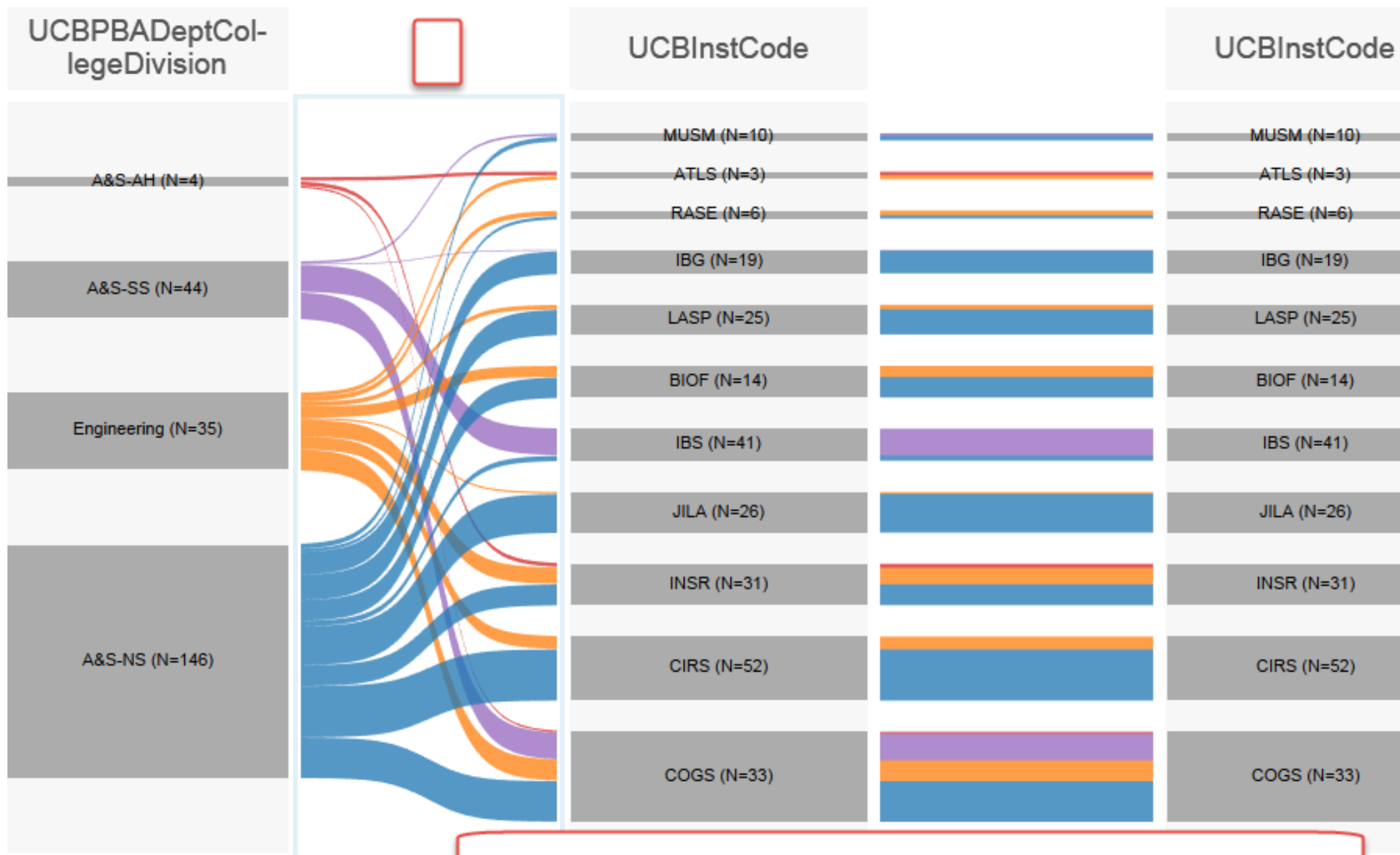
Detail for selected segment

AA Rank / AA Tenure Status

Professor equiv		Assoc prof equiv		Asst prof equiv			Grand Total
Tenured	Total	Tenured	Total	Tenure-track	NotTenureTrack	Total	
22	22	13	13	6	3	9	

Employee Detail

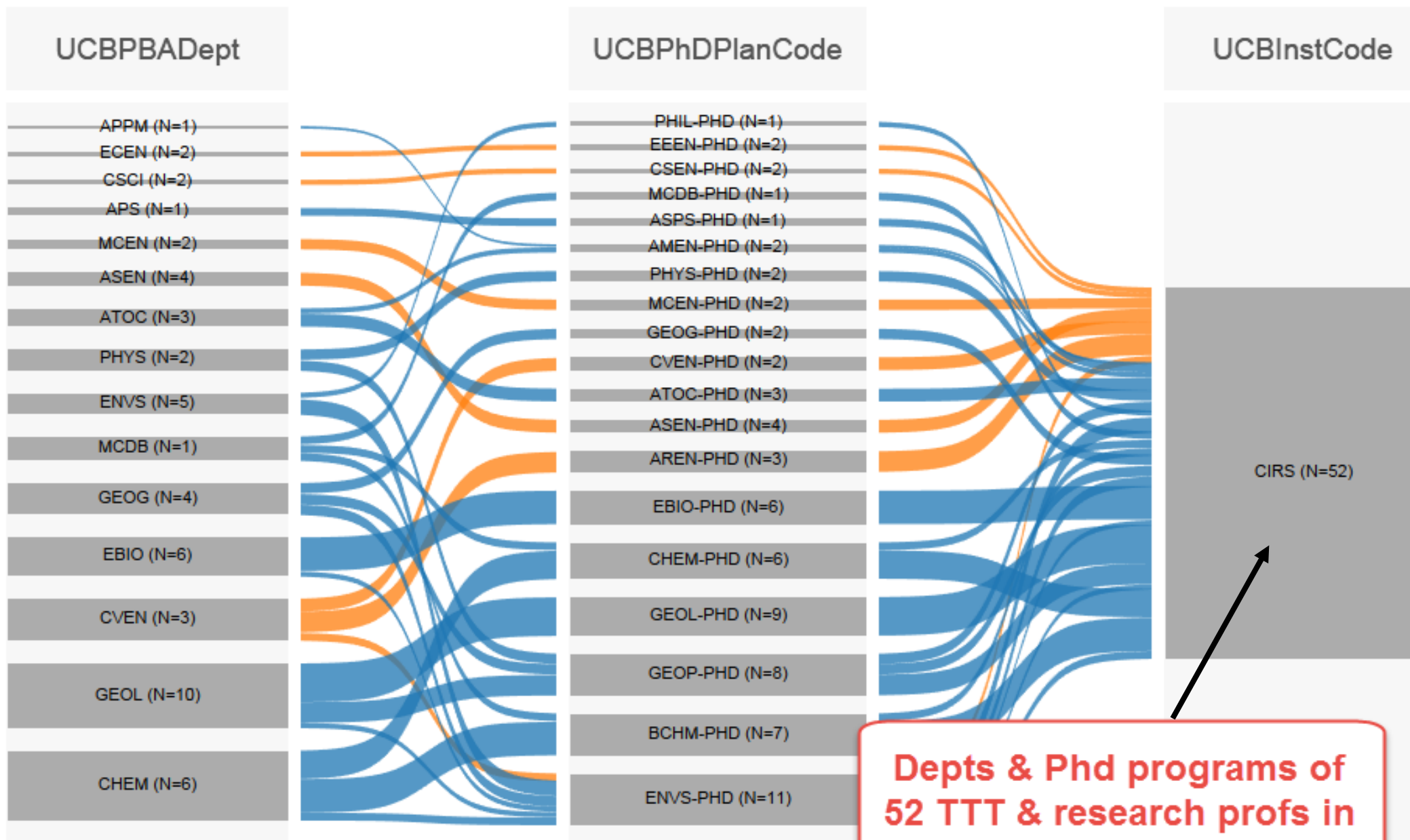
Name	AA Cat	AA Rank	AA Tenure Status	AA Is Admini..	UCBPBA De..	UCBPBA Dept	UCB Ph D Pl..	UCB Inst CcPath	Weight
ARCH, JOANNA JENNIFER	Regular	Asst prof equiv	Tenure-track	NotAdmin	A&S-NS	PSYC	NRSC-ADLM	NoInst	0.50
							PSYC-PHD	NoInst	0.50
BACHTELL, RYAN KARN	Regular	Asst prof equiv	Tenure-track	NotAdmin	A&S-NS	PSYC	NRSC-ADLM	NoInst	0.50
							PSYC-PHD	NoInst	0.50
BANICH, MARIE	Regular	Professor equiv	Tenured	Admin	A&S-NS	PSYC	COGS-ADLM	IBG	0.33
							NRSC-ADLM	COGS	0.33
							PSYC-PHD	COGS	0.33
BARRIENTOS-WOOD, RUTH..	Research	Asst prof equiv	NotTenureTrack	NotAdmin	A&S-NS	PSYC	PSYC-PHD	NoInst	1.00
BARTH, DANIEL	Regular	Professor equiv	Tenured	NotAdmin	A&S-NS	PSYC	COGS-ADLM	COGS	0.33
							NRSC-ADLM	COGS	0.33
							PSYC-PHD	COGS	0.33
BLAIR, IRENE VERNA	Regular	Assoc prof equiv	Tenured	NotAdmin	A&S-NS	PSYC	PSYC-PHD	NoInst	1.00
BRYAN, ANGELA	Regular	Professor equiv	Tenured	NotAdmin	A&S-NS	PSYC	NRSC-ADLM	NoInst	0.50
							PSYC-PHD	NoInst	0.50
CAMPEAU, SERGE	Regular	Assoc prof equiv	Tenured	NotAdmin	A&S-NS	PSYC	NRSC-ADLM	NoInst	0.50
							PSYC-PHD	NoInst	0.50



Color legend (UCBPBA Dept College Division):

- A&S-NS
- Engineering
- A&S-SS
- A&S-AH

Institutes of A&S divisions and Engineering



Color legend (UCBPBADeptCollegeDivision):

- A&S-NS
- Engineering

Color: Blue A&S, orng Engin

Depts & Phd programs of 52 TTT & research profs in CIRS, Institute Environmental Sciences

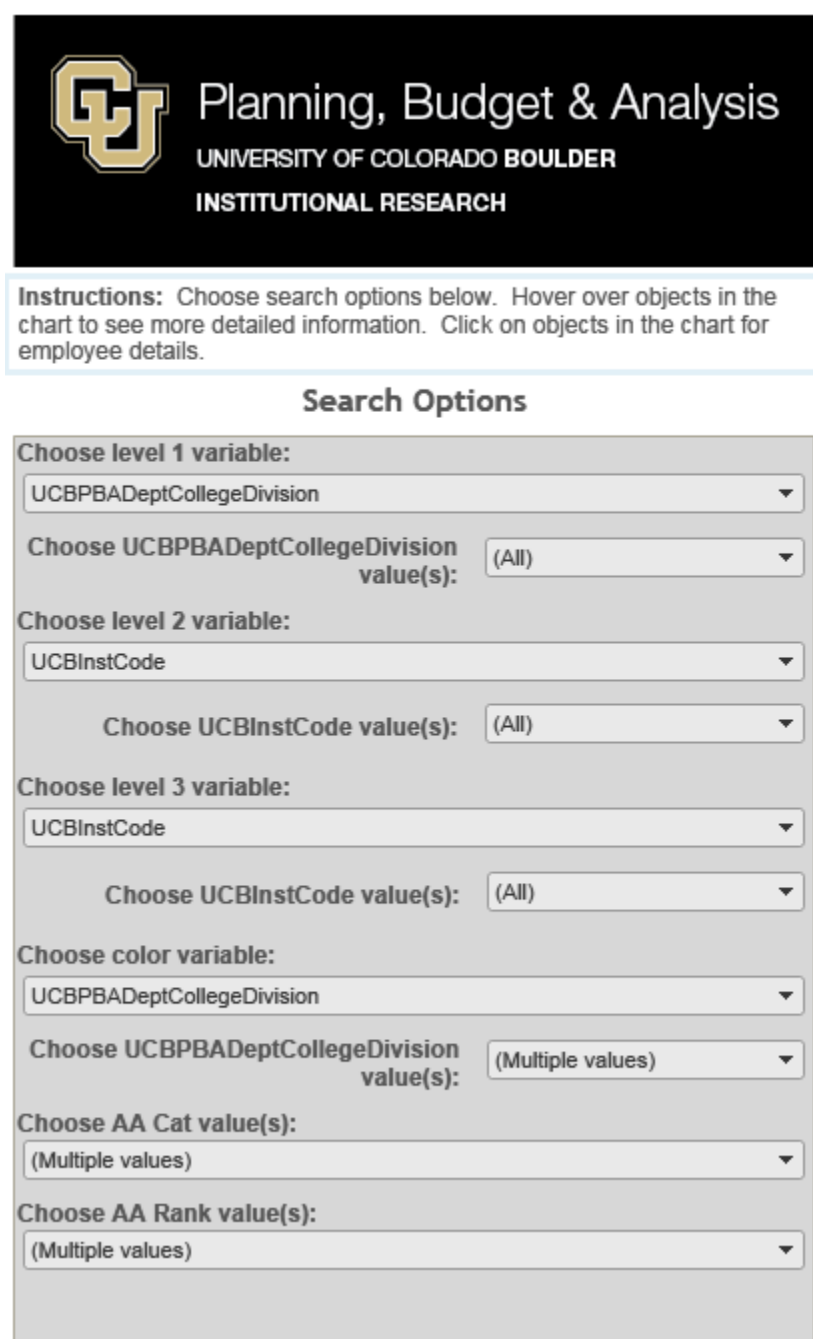
Set up at right


WORK IN PROGRESS

Currently combo of UCB
and AA variables

Tableau 9.0 but also on
Tableau Public

Comments welcome!



 **Planning, Budget & Analysis**
UNIVERSITY OF COLORADO BOULDER
INSTITUTIONAL RESEARCH

Instructions: Choose search options below. Hover over objects in the chart to see more detailed information. Click on objects in the chart for employee details.

Search Options

Choose level 1 variable:
UCBPBAdeptCollegeDivision

Choose UCBPBAdeptCollegeDivision value(s): (All)

Choose level 2 variable:
UCBInstCode

Choose UCBInstCode value(s): (All)

Choose level 3 variable:
UCBInstCode

Choose UCBInstCode value(s): (All)

Choose color variable:
UCBPBAdeptCollegeDivision

Choose UCBPBAdeptCollegeDivision value(s): (Multiple values)

Choose AA Cat value(s): (Multiple values)

Choose AA Rank value(s): (Multiple values)

Plans for coming year

- Do the 2014 submission!
 - AA will help by scraping specified websites
- Continue activities and plans above

- France in June, Germany in September, Kansas in between