

Elements and Problems

- General: student credit hours (grad & undergrad), number of course sections (grad & undergrad), declared majors (grad & undergrad) and faculty FTE
- Supply: average cost of books
- Theoretical problems: heavy on projects for declared but no real measure of use
- Practical problems:
 - Hard to get the multiple places to get data and hard to put
 - Hard to get parts of that data, especially number of course sections which was only available by using the register
 - Data collection was hampered by time lag in available data

Historic MAP Formula - Data Gathered

| Year | Grad | Undergrad | Faculty FTE | Grad Credit Hours | Undergrad Credit Hours | Grad Course Sections | Undergrad Course Sections |
|------|-------|-----------|-------------|-------------------|------------------------|----------------------|---------------------------|
| 2008 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2009 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2010 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2011 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2012 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |

Dividing Up LC

- Remember yellow files? We used a spreadsheet that had originally been designed to divide up the call numbers amongst selectors and which showed the subject assigned to an LC range and which matched the funnel code in our ILS

Internal Data Sources

We needed three types of data for our formula

- Circulation: from our ILS system administrator and Symphony ILS reports
- ILL: from our ILL librarian and ILLnet reports
- Average Price Per Book: from ILS data on average price paid for each fund

LC Sorted Checkout Data

| LC Class | Grad | Undergrad | Total |
|----------|------|-----------|-------|
| 000 | 100 | 100 | 200 |
| 100 | 100 | 100 | 200 |
| 200 | 100 | 100 | 200 |
| 300 | 100 | 100 | 200 |
| 400 | 100 | 100 | 200 |
| 500 | 100 | 100 | 200 |
| 600 | 100 | 100 | 200 |
| 700 | 100 | 100 | 200 |
| 800 | 100 | 100 | 200 |
| 900 | 100 | 100 | 200 |

LC Sorted Checkout Data CLOUSEUP

| LC Class | Grad | Undergrad | Total |
|----------|------|-----------|-------|
| 000 | 100 | 100 | 200 |
| 100 | 100 | 100 | 200 |
| 200 | 100 | 100 | 200 |
| 300 | 100 | 100 | 200 |
| 400 | 100 | 100 | 200 |
| 500 | 100 | 100 | 200 |
| 600 | 100 | 100 | 200 |
| 700 | 100 | 100 | 200 |
| 800 | 100 | 100 | 200 |
| 900 | 100 | 100 | 200 |

Use Factor Formula - In Use CLOUSEUP

| LC Class | Grad | Undergrad | Total |
|----------|------|-----------|-------|
| 000 | 100 | 100 | 200 |
| 100 | 100 | 100 | 200 |
| 200 | 100 | 100 | 200 |
| 300 | 100 | 100 | 200 |
| 400 | 100 | 100 | 200 |
| 500 | 100 | 100 | 200 |
| 600 | 100 | 100 | 200 |
| 700 | 100 | 100 | 200 |
| 800 | 100 | 100 | 200 |
| 900 | 100 | 100 | 200 |

Allocation Comparison

MAP vs. USE FACTOR ALLOCATIONS

MAP Formula History

- Developed in 1980's
- Developed by Service Libraries Committee which evaluated an office membership from Junior Library
- Factor used to determine total price in our use reports for an academic library
- Factor by control to monitor a research factor, but never agreed and then to use in other reports
- Included factors based on supply and personnel demand
- Checked in response to economic conditions and to a change in departmental budget needs

Historic MAP Formula - Data Gathered CLOUSEUP

| Year | Grad | Undergrad | Faculty FTE | Grad Credit Hours | Undergrad Credit Hours | Grad Course Sections | Undergrad Course Sections |
|------|-------|-----------|-------------|-------------------|------------------------|----------------------|---------------------------|
| 2008 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2009 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2010 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2011 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2012 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |

Ratio of ILL Requests to Holdings

- ILL Requests: Holdings
- Borrowings: % divided by Holdings: %
- Way to check Bonn's Use Factor when evaluating the collection

Symphony Data

- Monitored the number of files added in each of 8 fiscal years (08-09, 09-10, 10-11 and 11-12 sorted by LC call number)
- Monitored the size statistics for those files from acquisition department
- Price data was mapped to the call numbers and check data to the corresponding subject on this LC display sheet
- Book size average 3-4 hours a day for 3 weeks
- In the future this data could be pulled by the ILS system administrator and then cleaned up by grad students

Data Manipulation Continued

- Figured out percentage of total holdings for each fund and percentage of total circulations for each fund
- Divided the percentage of circulations by the percentage of holdings for each fund
- This gave Bonn's use factor
- Took a heavier average of Bonn's use factor
- Placed the percentage of price per book
- Added Bonn's use factor and the percentage of price per book
- Reported it as a percentage of overall budget

Calculating Use Factor by Year

| Year | Grad | Undergrad | Total |
|------|------|-----------|-------|
| 2008 | 100 | 100 | 200 |
| 2009 | 100 | 100 | 200 |
| 2010 | 100 | 100 | 200 |
| 2011 | 100 | 100 | 200 |
| 2012 | 100 | 100 | 200 |

Use Factor Formula - In Use

| LC Class | Grad | Undergrad | Total |
|----------|------|-----------|-------|
| 000 | 100 | 100 | 200 |
| 100 | 100 | 100 | 200 |
| 200 | 100 | 100 | 200 |
| 300 | 100 | 100 | 200 |
| 400 | 100 | 100 | 200 |
| 500 | 100 | 100 | 200 |
| 600 | 100 | 100 | 200 |
| 700 | 100 | 100 | 200 |
| 800 | 100 | 100 | 200 |
| 900 | 100 | 100 | 200 |

Caution

What constitutes a circulation? Both research use and research count. Data was checked for current research but we don't keep historical research data

In the case circulation data, we do not have for anything housed in Junior Library. Music Library keeps this data, but we did not use it in the first iteration of the process

Music's funds will need to be increased accordingly

Context

- ISE is a dedicated grant-making degree institution
- Around 2,000 students in total by SE context
- North Carolina State University, Duke and UNC-Chapel Hill are about 2,000 only
- Total research budget for 2012-2013 is 2.2 million, 520,000 of which is divided into 42 subject specific line order (average 12,000)
- Most research from Junior Library and its branches, but Music Library
- Material comes from Lippincott Health Sciences Library with a complete separate materials budget and staff

Historic MAP Formula - In Use

| Year | Grad | Undergrad | Faculty FTE | Grad Credit Hours | Undergrad Credit Hours | Grad Course Sections | Undergrad Course Sections |
|------|-------|-----------|-------------|-------------------|------------------------|----------------------|---------------------------|
| 2008 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2009 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2010 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2011 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2012 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |

Bonn's Use Factor

- Percentage of circulations divided by percentage of holdings
- Subject A provides 30% of all circulations but accounts for only 15% of all holdings
- Therefore: Bonn's Use Factor comes out to 2 and Subject A is oversized
- Goal is close to 1

ILL Data

- Monitored items borrowed (during each of 4 fiscal years 08-09, 09-10, 10-11 and 11-12 sorted by LC call number)
- Took ILL charges about 12 hours to pull the data
- Both items and requests: the ILLnet reports were only pulling between 30% and 50% of actual requests, and we needed something not based on a sample
- Plus, LC call numbers were not sorted by call number. They were sorted alphabetically
- Question: How could the correct list be retrieved from the file and headers, we didn't have all the data
- Give up on using ILL data this time

What We Did with the Data

- We checked it, found a couple errors and corrected them
- We found and grouped all the LC areas into their subject funds (Ps and TRs combined under Art)
- Did this for all four years
- Found total number of circulations and total number of holdings

Calculating Use Factor by Year CLOUSEUP

| Year | Grad | Undergrad | Total |
|------|------|-----------|-------|
| 2008 | 100 | 100 | 200 |
| 2009 | 100 | 100 | 200 |
| 2010 | 100 | 100 | 200 |
| 2011 | 100 | 100 | 200 |
| 2012 | 100 | 100 | 200 |

Use Factor Averaged over Four Years CLOUSEUP

| LC Class | Grad | Undergrad | Total |
|----------|------|-----------|-------|
| 000 | 100 | 100 | 200 |
| 100 | 100 | 100 | 200 |
| 200 | 100 | 100 | 200 |
| 300 | 100 | 100 | 200 |
| 400 | 100 | 100 | 200 |
| 500 | 100 | 100 | 200 |
| 600 | 100 | 100 | 200 |
| 700 | 100 | 100 | 200 |
| 800 | 100 | 100 | 200 |
| 900 | 100 | 100 | 200 |

Next Steps

- Factor in Music in-house use
- Figure out why ILLnet reports didn't pull all of the ILL data from all into OCLC check platform
- Test Service this year
- Take to Service Libraries Committee this fall

Historic MAP Formula - In Use CLOUSEUP

| Year | Grad | Undergrad | Faculty FTE | Grad Credit Hours | Undergrad Credit Hours | Grad Course Sections | Undergrad Course Sections |
|------|-------|-----------|-------------|-------------------|------------------------|----------------------|---------------------------|
| 2008 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2009 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2010 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2011 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |
| 2012 | 1,200 | 15,000 | 100 | 1,200 | 15,000 | 100 | 1,500 |

Our Idea

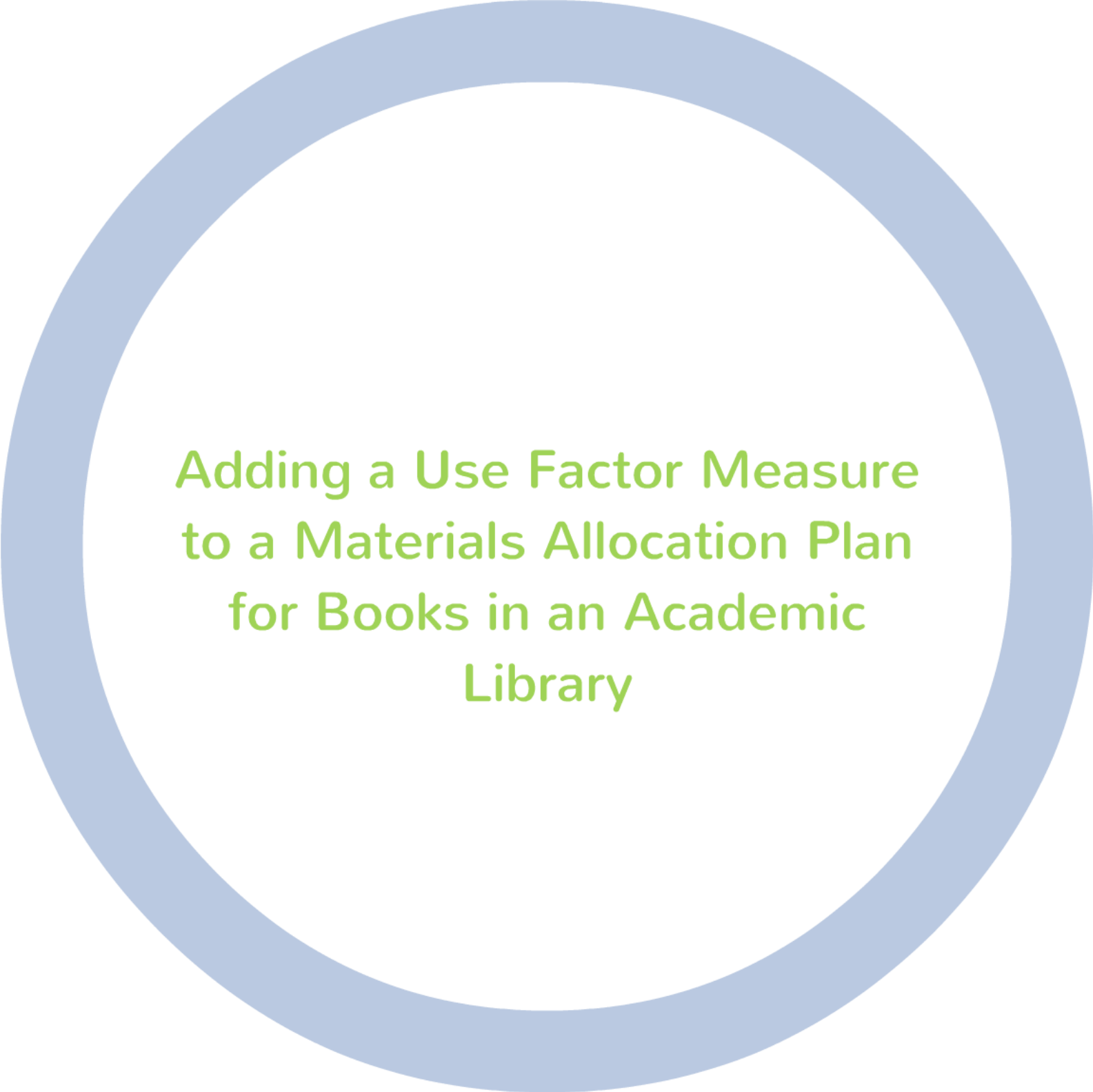
- Why not get rid of the proxies for need and multiply actual usage?
- Bonn's Use Factor
- Ratio of ILL Requests to Holdings

Average Cost per Book

- Used Symphony's average price paid for items per fund
- Includes videos, scores and film orders bought from other sources than YBP - better representation
- Thought about using YBP's lists, but would have had to map subject needs to funds
- Also, YBP's lists is based on purchase prices and not price paid so that would create a big difference

Use Factor Averaged over Four Years

| LC Class | Grad | Undergrad | Total |
|----------|------|-----------|-------|
| 000 | 100 | 100 | 200 |
| 100 | 100 | 100 | 200 |
| 200 | 100 | 100 | 200 |
| 300 | 100 | 100 | 200 |
| 400 | 100 | 100 | 200 |
| 500 | 100 | 100 | 200 |
| 600 | 100 | 100 | 200 |
| 700 | 100 | 100 | 200 |
| 800 | 100 | 100 | 200 |
| 900 | 100 | 100 | 200 |



**Adding a Use Factor Measure
to a Materials Allocation Plan
for Books in an Academic
Library**

Context

- ECU is a doctoral granting degree institution
- About 27,000 students including large DE cohort
- North Carolina State University, Duke and UNC-Chapel Hill are about 2 hours away
- Total materials budget for 2012-2013 of 4.2 million, \$242,400 of which is divided into 42 subject specific firm order monographs funds
- Main campus has Joyner Library and its branch, the Fletcher Music Library
- Medical campus has Laupus Health Sciences Library with a completely separate materials budget and staff

MAP Formula History

- Developed in early-80's
- Developed by Senate Libraries Committee which included ex officio membership from Joyner Library
- Rocky road to adoption, first year in use was supposed to be on a temporary basis
- Faculty wanted to include a research factor, but never figured out how to include after trying twice
- Included factors based on supply and perceived demand
- Created in response to economic circumstances and need to manage significant materials budget cuts

Elements and Problems

- Demand: student credit hours (grad & undergrad), number of course sections (grad & undergrad), declared majors (grad & undergrad) and faculty FTE
- Supply: average cost of books
- Theoretical problems: heavy on proxies for demand but no real measure of use
- Practical problems:
 - Had to go to multiple places to get data and hand enter
 - Hard to get some of this data, especially number of course sections which was only available by asking the registrar
 - Data collection was hampered by time lags in available data

Historic MAP Formula - Data Gathered

| FACTOR | STUDENT CREDIT HOURS | | | | | NUMBER COURSE SECTIONS | | AVE COST OF BOOKS | DECLARED MAJORS | | FACULTY FTE |
|--------------------|----------------------|-----------|------------|---------|---------|------------------------|-----------|-------------------|-----------------|-----------|-------------|
| | YEAR | SU I 2010 | SU II 2010 | FL 2010 | SP 2011 | SUM | 2011-2012 | | 2010-2011 | 2011-2012 | |
| DETAILS | GRAD and UNDG | | | | | UNDG | GRAD | | UNDG | GRAD | |
| ANTHROPOLOGY | 552 | 325 | 4,347 | 3,380 | 8,604 | 138 | 42 | \$ 85.45 | 68 | 21 | 19.0 |
| ART | 903 | 397 | 10,203 | 9,608 | 21,111 | 623 | 346 | \$ 56.96 | 608 | 56 | 51.0 |
| BIOLOGY | 1,905 | 1,600 | 18,994 | 15,696 | 38,195 | 698 | 331 | \$ 99.09 | 503 | 66 | 43.0 |
| BUSINESS | 6,057 | 3,672 | 35,775 | 34,769 | 80,273 | 695 | 298 | \$ 82.46 | 2,895 | 909 | 122.8 |
| CHEMISTRY | 792 | 742 | 10,383 | 8,963 | 20,880 | 188 | 91 | \$ 172.37 | 77 | 17 | 26.0 |
| CHILD DEV | 1,482 | 597 | 7,494 | 7,855 | 17,428 | 162 | 94 | \$ 71.48 | 372 | 89 | 27.8 |
| COMMUNICATION | 2,348 | 771 | 8,140 | 8,664 | 19,923 | 230 | 19 | \$ 73.54 | 841 | 28 | 23.0 |
| COMPUTER SCI | 148 | 58 | 1,740 | 1,641 | 3,587 | 95 | 73 | \$ 89.72 | 251 | 71 | 13.0 |
| CONSTRUCTION MGT | 352 | 114 | 3,898 | 3,151 | 7,515 | 112 | 17 | \$ 84.03 | 386 | 25 | 13.0 |
| CRIMINAL JUSTICE | 501 | 150 | 4,007 | 4,467 | 9,125 | 68 | 20 | \$ 74.81 | 454 | 40 | 9.3 |
| ECONOMICS | 675 | 618 | 6,796 | 6,135 | 14,224 | 107 | 28 | \$ 107.64 | 170 | 10 | 18.8 |
| EDUCATION | 8,013 | 7,004 | 29,260 | 26,925 | 71,202 | 1,334 | 640 | \$ 79.53 | 2,006 | 980 | 144.3 |
| ENGINEERING | 1 | 1 | 1,813 | 1,854 | 3,669 | 104 | | \$ 131.84 | 379 | | 18.0 |
| ENGLISH | 2,337 | 2,481 | 19,809 | 19,121 | 43,748 | 607 | 252 | \$ 48.62 | 178 | 169 | 87.0 |
| FOREIGN LANG | 822 | 603 | 6,698 | 6,349 | 14,472 | 125 | 17 | \$ 49.17 | 94 | | 37.5 |
| GEOGRAPHY | 346 | 310 | 5,280 | 4,513 | 10,449 | 107 | 36 | \$ 98.48 | 80 | 22 | 25.3 |
| GEOLOGY | 201 | | 4,303 | 3,995 | 8,499 | 98 | 93 | \$ 117.84 | 58 | 36 | 17.0 |
| HLTH & HUMAN PERF | 5,272 | 2,096 | 25,418 | 26,810 | 59,596 | 879 | 315 | \$ 84.52 | 1,109 | 294 | 94.8 |
| HISTORY | 602 | 475 | 6,093 | 5,397 | 12,567 | 177 | 145 | \$ 65.36 | 77 | 87 | 32.3 |
| HOSPITALITY MGT | 345 | 333 | 3,914 | 3,709 | 8,301 | 132 | 2 | \$ 79.72 | 308 | | 11.3 |
| INTERIOR DESIGN | 129 | 75 | 2,321 | 2,034 | 4,559 | 67 | | \$ 54.01 | 212 | | 11.3 |
| LIBRARY SCIENCE | 1,468 | 166 | 1,999 | 1,857 | 5,490 | 12 | 64 | \$ 75.58 | | 204 | 11.0 |
| MATH | 1,457 | 1,217 | 18,099 | 12,570 | 33,343 | 318 | 42 | \$ 90.56 | 30 | 24 | 35.5 |
| MUSIC | 1,091 | 154 | 8,446 | 7,239 | 16,930 | 681 | 335 | \$ 58.01 | 277 | 38 | 49.0 |
| NUTRITION | 258 | 432 | 4,579 | 4,361 | 9,630 | 70 | 53 | \$ 87.67 | 55 | 39 | 14.8 |
| PHILOSOPHY | 672 | 543 | 5,581 | 5,722 | 12,518 | 107 | | \$ 81.17 | 17 | | 19.5 |
| PHYSICS | 823 | 515 | 5,034 | 4,783 | 11,155 | 192 | 76 | \$ 119.03 | 15 | 42 | 17.8 |
| POL SCIENCE | 351 | 372 | 4,461 | 3,727 | 8,911 | 121 | 2 | \$ 101.98 | 177 | 54 | 21.0 |
| PSYCHOLOGY | 1778 | 1,461 | 13,463 | 14,553 | 31,255 | 280 | 169 | \$ 72.82 | 421 | 58 | 39.8 |
| SOCIAL WORK | 678 | 642 | 4,398 | 4,395 | 10,113 | 69 | 71 | \$ 74.81 | 154 | 154 | 18.5 |
| SOCIOLOGY | 696 | 738 | 8,508 | 7,059 | 17,001 | 124 | 29 | \$ 91.18 | 83 | 20 | 22.5 |
| TECHNOLOGY SYSTEMS | 1713 | 39 | 7,506 | 6,577 | 15,835 | 314 | 81 | \$ 88.85 | 887 | 141 | 34.0 |
| THEATRE & DANCE | 714 | 681 | 5,585 | 5,169 | 12,149 | 357 | | \$ 53.90 | 244 | | 27.0 |

Historic MAP Formula - Data Gathered CLOSEUP

| FACTOR | STUDENT CREDIT HOURS | | | | | NUMBER COURSE SECTIONS | | AVE COST OF BOOKS | DECLARED MAJORS | | FACULTY FTE |
|---------|----------------------|-----------|------------|---------|---------|------------------------|-----------|-------------------|-----------------|-----------|-------------|
| | YEAR | SU I 2010 | SU II 2010 | FL 2010 | SP 2011 | SUM | 2011-2012 | | 2010-2011 | 2011-2012 | |
| DETAILS | GRAD and UNDG | | | | | UNDG | GRAD | | UNDG | GRAD | |
| ANTHRO | 552 | 325 | 4,347 | 3,380 | 8,604 | 138 | 42 | \$ 85.45 | 68 | 21 | 19.0 |
| ART | 903 | 397 | 10,203 | 9,608 | 21,111 | 623 | 346 | \$ 56.96 | 608 | 56 | 51.0 |

Historic MAP Formula - In Use

| MAP FORMULA TO DIVIDE AVAILABLE FIRM ORDER MONEY AMONG SUBJECT FUNDS | STUDENT CREDIT HOURS | | NUMBER COURSE SECTIONS | | | | | AVE COST OF BOOKS | | | DECLARED MAJORS | | | | | FACULTY FTE | | | FINAL CALCULATIONS | | ALLOCATION AMOUNT | | |
|----------------------------------------------------------------------|----------------------|-------|------------------------|-------|-------|-------|-------|-------------------|--------|-------|-----------------|-------|-------|-------|-------|-------------|-------|-------|--------------------|-----------------------------------|-------------------|----------------|----------------|
| | GRAD and UNDG | | UNDG | | GRAD | | | | | | UNDG | | GRAD | | | | | | TOTAL PTS | ENTITLED TO THIS % of AVAIL MONEY | \$50,000 YEAR | \$150,000 YEAR | \$250,000 YEAR |
| | AMT | PTS | AMT | PTS | AMT | WT. 2 | PTS | AMT | WT. 10 | PTS | AMT | PTS | AMT | WT. 2 | PTS | AMT | WT. 6 | PTS | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| ANTHROPOLOGY | 8,604 | 1.3% | 138 | 1.5% | 42 | 2 | 2.2% | \$ 85.45 | 10 | 30.5% | 68 | 0.5% | 21 | 2 | 1.1% | 19.0 | 6 | 9.9% | 47.0% | 2.04% | \$ 1,021.60 | \$ 3,064.80 | \$ 5,108.01 |
| ART | 21,111 | 3.2% | 623 | 6.6% | 346 | 2 | 18.3% | \$ 56.96 | 10 | 20.3% | 608 | 4.5% | 56 | 2 | 3.0% | 51.0 | 6 | 26.5% | 82.5% | 3.59% | \$ 1,793.12 | \$ 5,379.37 | \$ 8,965.61 |
| BIOLOGY | 38,195 | 5.8% | 698 | 7.4% | 331 | 2 | 17.5% | \$ 99.09 | 10 | 35.4% | 503 | 3.7% | 66 | 2 | 3.6% | 43.0 | 6 | 22.3% | 95.7% | 4.16% | \$ 2,080.66 | \$ 6,241.97 | \$ 10,403.28 |
| BUSINESS | 80,273 | 12.1% | 695 | 7.4% | 298 | 2 | 15.8% | \$ 82.46 | 10 | 29.4% | 2,895 | 21.5% | 909 | 2 | 49.2% | 122.8 | 6 | 63.7% | 199.2% | 8.66% | \$ 4,329.82 | \$ 12,989.46 | \$ 21,649.10 |
| CHEMISTRY | 20,880 | 3.2% | 188 | 2.0% | 91 | 2 | 4.8% | \$ 172.37 | 10 | 61.5% | 77 | 0.6% | 17 | 2 | 0.9% | 26.0 | 6 | 13.5% | 86.5% | 3.76% | \$ 1,879.91 | \$ 5,639.73 | \$ 9,399.55 |
| CHILD DEV | 17,428 | 2.6% | 162 | 1.7% | 94 | 2 | 5.0% | \$ 71.48 | 10 | 25.5% | 372 | 2.8% | 89 | 2 | 4.8% | 27.8 | 6 | 14.4% | 56.8% | 2.47% | \$ 1,235.43 | \$ 3,706.30 | \$ 6,177.17 |
| COMMUNICATION | 19,923 | 3.0% | 230 | 2.4% | 19 | 2 | 1.0% | \$ 73.54 | 10 | 26.2% | 841 | 6.2% | 28 | 2 | 1.5% | 23.0 | 6 | 11.9% | 52.4% | 2.28% | \$ 1,139.38 | \$ 3,418.14 | \$ 5,696.91 |
| COMPUTER SCI | 3,587 | 0.5% | 95 | 1.0% | 73 | 2 | 3.9% | \$ 89.72 | 10 | 32.0% | 251 | 1.9% | 71 | 2 | 3.8% | 13.0 | 6 | 6.8% | 49.9% | 2.17% | \$ 1,084.60 | \$ 3,253.80 | \$ 5,423.00 |
| CONSTRUCTION MGT | 7,515 | 1.1% | 112 | 1.2% | 17 | 2 | 0.9% | \$ 84.03 | 10 | 30.0% | 386 | 2.9% | 25 | 2 | 1.4% | 13.0 | 6 | 6.8% | 44.2% | 1.92% | \$ 960.54 | \$ 2,881.62 | \$ 4,802.70 |
| CRIMINAL JUSTICE | 9,125 | 1.4% | 68 | 0.7% | 20 | 2 | 1.1% | \$ 74.81 | 10 | 26.7% | 454 | 3.4% | 40 | 2 | 2.2% | 9.3 | 6 | 4.8% | 40.2% | 1.75% | \$ 873.86 | \$ 2,621.57 | \$ 4,369.28 |
| ECONOMICS | 14,224 | 2.1% | 107 | 1.1% | 28 | 2 | 1.5% | \$ 107.64 | 10 | 38.4% | 170 | 1.3% | 10 | 2 | 0.5% | 18.8 | 6 | 9.7% | 54.7% | 2.38% | \$ 1,189.62 | \$ 3,568.85 | \$ 5,948.08 |
| EDUCATION | 71,202 | 10.8% | 1,334 | 14.2% | 640 | 2 | 33.9% | \$ 79.53 | 10 | 28.4% | 2,006 | 14.9% | 980 | 2 | 53.1% | 144.3 | 6 | 75.0% | 230.1% | 10.00% | \$ 5,002.22 | \$ 15,006.65 | \$ 25,011.09 |
| ENGINEERING | 3,669 | 0.6% | 104 | 1.1% | | 2 | 0.0% | \$ 131.84 | 10 | 47.0% | 379 | 2.8% | | 2 | 0.0% | 18.0 | 6 | 9.3% | 60.9% | 2.65% | \$ 1,323.32 | \$ 3,969.95 | \$ 6,616.58 |
| ENGLISH | 43,748 | 6.6% | 607 | 6.5% | 252 | 2 | 13.3% | \$ 48.62 | 10 | 17.4% | 178 | 1.3% | 169 | 2 | 9.1% | 87.0 | 6 | 45.2% | 99.4% | 4.32% | \$ 2,160.97 | \$ 6,482.91 | \$ 10,804.86 |
| FOREIGN LANG | 14,472 | 2.2% | 125 | 1.3% | 17 | 2 | 0.9% | \$ 49.17 | 10 | 17.5% | 94 | 0.7% | | 2 | 0.0% | 37.5 | 6 | 19.5% | 42.1% | 1.83% | \$ 916.00 | \$ 2,747.99 | \$ 4,579.99 |
| GEOGRAPHY | 10,449 | 1.6% | 107 | 1.1% | 36 | 2 | 1.9% | \$ 98.48 | 10 | 35.1% | 80 | 0.6% | 22 | 2 | 1.2% | 25.3 | 6 | 13.1% | 54.7% | 2.38% | \$ 1,188.34 | \$ 3,565.03 | \$ 5,941.72 |
| GEOLOGY | 8,499 | 1.3% | 98 | 1.0% | 93 | 2 | 4.9% | \$ 117.84 | 10 | 42.1% | 58 | 0.4% | 36 | 2 | 1.9% | 17.0 | 6 | 8.8% | 60.5% | 2.63% | \$ 1,315.38 | \$ 3,946.14 | \$ 6,576.91 |
| HLTH & HUMAN PERF | 59,596 | 9.0% | 879 | 9.4% | 315 | 2 | 16.7% | \$ 84.52 | 10 | 30.2% | 1,109 | 8.2% | 294 | 2 | 15.9% | 94.8 | 6 | 49.2% | 138.5% | 6.02% | \$ 3,011.81 | \$ 9,035.43 | \$ 15,059.05 |
| HISTORY | 12,567 | 1.9% | 177 | 1.9% | 145 | 2 | 7.7% | \$ 65.36 | 10 | 23.3% | 77 | 0.6% | 87 | 2 | 4.7% | 32.3 | 6 | 16.7% | 56.8% | 2.47% | \$ 1,234.95 | \$ 3,704.86 | \$ 6,174.76 |
| HOSPITALITY MGT | 8,301 | 1.3% | 132 | 1.4% | 2 | 2 | 0.1% | \$ 79.72 | 10 | 28.4% | 308 | 2.3% | | 2 | 0.0% | 11.3 | 6 | 5.8% | 39.3% | 1.71% | \$ 855.29 | \$ 2,565.88 | \$ 4,276.46 |
| INTERIOR DESIGN | 4,559 | 0.7% | 67 | 0.7% | | 2 | 0.0% | \$ 54.01 | 10 | 19.3% | 212 | 1.6% | | 2 | 0.0% | 11.3 | 6 | 5.8% | 28.1% | 1.22% | \$ 610.71 | \$ 1,832.13 | \$ 3,053.56 |
| LIBRARY SCIENCE | 5,490 | 0.8% | 12 | 0.1% | 64 | 2 | 3.4% | \$ 75.58 | 10 | 27.0% | | 0.0% | 204 | 2 | 11.0% | 11.0 | 6 | 5.7% | 48.1% | 2.09% | \$ 1,045.03 | \$ 3,135.10 | \$ 5,225.16 |
| MATH | 33,343 | 5.0% | 318 | 3.4% | 42 | 2 | 2.2% | \$ 90.56 | 10 | 32.3% | 30 | 0.2% | 24 | 2 | 1.3% | 35.5 | 6 | 18.4% | 62.9% | 2.74% | \$ 1,367.80 | \$ 4,103.41 | \$ 6,839.02 |
| MUSIC | 16,930 | 2.6% | 681 | 7.3% | 335 | 2 | 17.7% | \$ 58.01 | 10 | 20.7% | 277 | 2.1% | 38 | 2 | 2.1% | 49.0 | 6 | 25.4% | 77.8% | 3.38% | \$ 1,691.13 | \$ 5,073.38 | \$ 8,455.64 |
| NUTRITION | 9,630 | 1.5% | 70 | 0.7% | 53 | 2 | 2.8% | \$ 87.67 | 10 | 31.3% | 55 | 0.4% | 39 | 2 | 2.1% | 14.8 | 6 | 7.7% | 46.5% | 2.02% | \$ 1,010.20 | \$ 3,030.61 | \$ 5,051.02 |
| PHILOSOPHY | 12,518 | 1.9% | 107 | 1.1% | | 2 | 0.0% | \$ 81.17 | 10 | 29.0% | 17 | 0.1% | | 2 | 0.0% | 19.5 | 6 | 10.1% | 42.2% | 1.84% | \$ 918.47 | \$ 2,755.41 | \$ 4,592.35 |
| PHYSICS | 11,155 | 1.7% | 192 | 2.0% | 76 | 2 | 4.0% | \$ 119.03 | 10 | 42.5% | 15 | 0.1% | 42 | 2 | 2.3% | 17.8 | 6 | 9.2% | 61.8% | 2.69% | \$ 1,344.13 | \$ 4,032.40 | \$ 6,720.66 |
| POL SCIENCE | 8,911 | 1.3% | 121 | 1.3% | 2 | 2 | 0.1% | \$ 101.98 | 10 | 36.4% | 177 | 1.3% | 54 | 2 | 2.9% | 21.0 | 6 | 10.9% | 54.3% | 2.36% | \$ 1,179.93 | \$ 3,539.79 | \$ 5,899.65 |
| PSYCHOLOGY | 31,255 | 4.7% | 280 | 3.0% | 169 | 2 | 8.9% | \$ 72.82 | 10 | 26.0% | 421 | 3.1% | 58 | 2 | 3.1% | 39.8 | 6 | 20.6% | 69.5% | 3.02% | \$ 1,511.79 | \$ 4,535.38 | \$ 7,558.97 |
| SOCIAL WORK | 10,113 | 1.5% | 69 | 0.7% | 71 | 2 | 3.8% | \$ 74.81 | 10 | 26.7% | 154 | 1.1% | 154 | 2 | 8.3% | 18.5 | 6 | 9.6% | 51.8% | 2.25% | \$ 1,126.16 | \$ 3,378.49 | \$ 5,630.81 |
| SOCIOLOGY | 17,001 | 2.6% | 124 | 1.3% | 29 | 2 | 1.5% | \$ 91.18 | 10 | 32.5% | 83 | 0.6% | 20 | 2 | 1.1% | 22.5 | 6 | 11.7% | 51.3% | 2.23% | \$ 1,116.19 | \$ 3,348.56 | \$ 5,580.94 |
| TECHNOLOGY SYSTEMS | 15,835 | 2.4% | 314 | 3.3% | 81 | 2 | 4.3% | \$ 88.85 | 10 | 31.7% | 887 | 6.6% | 141 | 2 | 7.6% | 34.0 | 6 | 17.7% | 73.6% | 3.20% | \$ 1,600.09 | \$ 4,800.28 | \$ 8,000.46 |
| THEATRE & DANCE | 12,149 | 1.8% | 357 | 3.8% | | 2 | 0.0% | \$ 53.90 | 10 | 19.2% | 244 | 1.8% | | 2 | 0.0% | 27.0 | 6 | 14.0% | 40.7% | 1.77% | \$ 884.89 | \$ 2,654.67 | \$ 4,424.45 |
| TOTALS | 662,257 | 100% | 9,391 | 100% | 3,781 | 2 | 200% | \$ 2,802.20 | 10 | 1000% | 13,486 | 100% | 3,694 | 2 | 200% | 1,155.3 | 6 | 600% | 2300% | 100% | \$ 50,000 | \$ 150,000 | \$ 250,000 |

Historic MAP Formula - In Use

CLOSEUP

| MAP FORMULA TO DIVIDE AVAILABLE FIRM ORDER MONEY AMONG SUBJECT FUNDS | STUDENT CREDIT HOURS | | NUMBER COURSE SECTIONS | | | | | AVE COST OF BOOKS | | |
|----------------------------------------------------------------------|----------------------|------|------------------------|------|------|-------|-------|-------------------|--------|-------|
| | UNDG and GRAD | | UNDG | | GRAD | | | AMT | WT. 10 | PTS |
| | AMT | PTS | AMT | PTS | AMT | WT. 2 | PTS | | | |
| ANTHRO | 8,604 | 1.3% | 138 | 1.5% | 42 | 2 | 2.2% | \$85.45 | 10 | 30.5% |
| ART | 21,111 | 3.2% | 623 | 6.6% | 346 | 2 | 18.3% | \$56.96 | 10 | 20.3% |

| Continued | DECLARED MAJORS | | | | | FACULTY FTE | | | FINAL CALCULATIONS | | ALLOCATION AMOUNT | | |
|-----------|-----------------|------|------|-------|------|-------------|-------|-------|--------------------|-----------------------------------|-------------------|----------------|----------------|
| | UNDG | | GRAD | | | AMT | WT. 6 | PTS | TOTAL PTS | ENTITLED TO THIS % of AVAIL MONEY | \$50,000 YEAR | \$150,000 YEAR | \$250,000 YEAR |
| | AMT | PTS | AMT | WT. 2 | PTS | | | | | | | | |
| ANTHRO | 68 | 0.5% | 21 | 2 | 1.1% | 19 | 6 | 9.9% | 47.0% | 2.04% | \$1,021.60 | \$3,064.80 | \$5,108.01 |
| ART | 608 | 4.5% | 56 | 2 | 3.0% | 51 | 6 | 26.5% | 82.5% | 3.59% | \$1,793.12 | \$5,379.37 | \$8,965.61 |

Our Idea

Why not get rid of the proxies for need and employ actual usage?

- Bonn's Use Factor
- Ratio of ILL Requests to Holdings

Bonn's Use Factor

- Percentage of circulations divided by percentage of holdings
- Subject A provides 30% of all circulations but accounts for only 15% of holdings
- Therefore: Bonn's Use Factor comes out to 2 and Subject A is overused
- Ideal is close to 1

Ratio of ILL Requests to Holdings

- ILL Requests : Holdings
 - Borrowings % divided by Holdings %
- Way to check Bonn's Use Factor when evaluating the collection

Dividing Up LC

- Remember yellow slips? We used a spreadsheet that had originally been designed to divvy up the call numbers amongst selectors and which showed the subject assigned to an LC range and which matched the fund code in our ILS

Internal Data Sources

We needed three types of data for our formula

- **Circulation:** from our ILS system administrator and Symphony ILS reports
- **ILL:** from our ILL librarian and ILLiad reports
- **Average Price Per Book:** from ILS data on average price paid for each fund

Symphony Data

- Needed the number of titles added in each of 4 fiscal years 08-09, 09-10, 10-11 and 11-12 sorted by LC call number
- Needed the circ statistics for those titles from acquisition to present
- From there we mapped the call numbers and check outs to the corresponding subject on the LC divvy up sheet
- Took one person 3-4 hours a day for 3 weeks
- In the future this data could be pulled by the ILS system administrator and then cleaned up by grad students

ILL Data

- Needed items borrowed during each of 4 fiscal years 08-09, 09-10, 10-11 and 11-12 sorted by LC call number
- Took ILL librarian about 12 hours to pull the data
- But there was a problem: the ILLiad reports were only pulling between 30% and 50% of actual requests and we needed everything, not just a sample
- Plus, LC call numbers were not sorted by call number, they were sorted numerically
 - Given time this could be corrected, but we did not have the time and besides, we didn't have all the data
- Gave up on using ILL data this time

Average Cost per Book

- Used Symphony's average price paid for item per fund
- Includes videos, scores and firm orders bought from other sources than YBP - better representation
- Thought about using YBP's table, but would have had to map subject areas to funds
- Also, YBP's table is based on hardcover prices and we prefer paper so that would make a big difference

What We Did with the Data

- We checked it, found a couple errors and corrected them
- We found and grouped all the LC areas into their subject funds (Ns and TRs combined under Art)
- Did this for all four years
- Found total number of circulations and total number of holdings

Data Manipulation Continued

- Figured out percentage of total holdings for each fund and percentage of total circulations for each fund
- Divided the percentage of circs by the percentage of holdings for each fund
- That gave us Bonn's use factor
- Took a four-year average of Bonn's use factor
- Found the percentage of price per book
- Added Bonn's use factor and the percentage of price per book
- Expressed it as a percentage of overall budget

LC Sorted Checkout Data

| 2009-2010 FISCAL YEAR PURCHASES AND CHECKOUT DATA | | | | | |
|---------------------------------------------------|---------------------------------------|-----------|-------------------|----------|--------|
| CALL NUMBER RANGE | LC DESCRIPTION | FUND CODE | DEPT NAME | # TITLES | # CKOS |
| AC | Collections | JHIS | History | 0 | 0 |
| AE | Encyclopedias | JREF | Reference | 1 | 0 |
| AG | Dictionaries | JREF | Reference | 0 | 0 |
| AI | Indexes | JREF | Reference | 0 | 0 |
| AM | Museums | JHIS | History | 6 | 18 |
| AN | Newspapers | JENG | English | 0 | 0 |
| AP | Periodicals | JENG | English | 2 | 0 |
| AS | Academies | JEDU | Education | 2 | 0 |
| AY | Yearbooks | JHIS | History | 0 | 0 |
| AZ | History of Scholarship | JEDU | Education | 1 | 0 |
| B | Philosophy, General | JPHI | Philosophy | 109 | 0 |
| BC | Logic | JPHI | Philosophy | 2 | 0 |
| BD | Speculative Philosophy | JPHI | Philosophy | 23 | 13 |
| BF | Psychology | JPSY | Psychology | 219 | 321 |
| BH | Aesthetics | JPHI | Philosophy | 6 | 2 |
| BJ | Ethics | JPHI | Philosophy | 28 | 23 |
| BL | Religions | JREL | Religious Studies | 52 | 92 |
| BM | Judaism | JREL | Religious Studies | 4 | 5 |
| BP | Islam. Bahaism. Theosophy | JREL | Religious Studies | 13 | 9 |
| BQ | Buddhism | JREL | Religious Studies | 6 | 11 |
| BR | Christianity | JREL | Religious Studies | 33 | 28 |
| BS | Bible | JREL | Religious Studies | 23 | 39 |
| BT | Doctrinal Theology | JREL | Religious Studies | 11 | 18 |
| BV | Practical Theology | JREL | Religious Studies | 12 | 8 |
| BX | Christian Doctrines | JREL | Religious Studies | 22 | 24 |
| C | Auxiliary Sciences of History | JHIS | History | 0 | 0 |
| CB | History of Civilization & Archaeology | JANT | Anthropology | 8 | 3 |
| CC | Archaeology | JANT | Anthropology | 37 | 72 |
| CD | Diplomatics. Archives. Seals | JHIS | History | 1 | 0 |

| | | | | | |
|------------------------------------------------------------------------|---------------------------------------------|------|---------------------------------|-----|------|
| HQ1075-HQ2044 | Women, Feminism, Life Style | JWST | Women's Studies | 60 | 100 |
| HS | Social Groups | JSOC | Sociology | 1 | 6 |
| T51-HT65; HT401-HT1595 | Communities, Classes, Races | JSOC | Sociology | 13 | 8 |
| HT101-HT395 | Urban Groups, The City | JGEG | Geography | 21 | 12 |
| HV1-HV5840 | Social Pathology, Social and Public Welfare | JSWK | Social Work | 155 | 153 |
| HV6001-HV9960 | Criminology, Criminal Justice | JCRJ | Criminal Justice | 81 | 132 |
| HX | Socialism, Communism | JHIS | History | 22 | 16 |
| J | Political Science | JPOS | Political Science | 209 | 167 |
| K-KZD | Law | JPOS | Political Science | 96 | 65 |
| L-LT | Education | JEDU | Education | 676 | 1105 |
| M-MT | Music | JMUS | Music | | |
| N | Visual Arts | JART | Art | 132 | 211 |
| NA1-NA8480 | Architecture | JART | Art | 62 | 102 |
| NA9000-NA9428 | City Planning | JGEG | Geography | 1 | 3 |
| NB-NK | (multiple) | JART | Art | 174 | 189 |
| iK1160-NK1590; NK1700-K3496.3; NK4700-NK4890 | Design, Interior Design, Costume | JIDM | Interior Design & Merchandising | 22 | 47 |
| NX | Arts in General | JART | Art | 16 | 21 |
| P1-P85; P98-P1091 | Philology, Linguistics | JENG | English | 24 | 51 |
| P87-P96 | Communication | JCOM | Communication | 23 | 20 |
| PA | Classical Studies | JCLS | Classics | 43 | 12 |
| PB-PM | Literatures (multiple) | JFOL | Foreign Languages | 113 | 163 |
| PN1-PN1389; PN1600-PN1988; PN1993-PN1999; PN3311-PN4500; PN6010-PN6790 | Literature History and Collections | JENG | English | 90 | 65 |
| PN1530-PN1599 | Performing Arts, Drama | JTHA | Theatre Arts | 1 | 0 |
| PN1990-PN1992 | Broadcasting | JCOM | Communication | 6 | 4 |
| PN2000-PN3307 | Dramatic Representation, Theatre | JTHA | Theatre Arts | 20 | 23 |
| PN4699-PN6009 | Journalism | JCOM | Communication | 23 | 30 |
| PQ | Literatures (multiple) | JFOL | Foreign Languages | 136 | 91 |
| PR-PS | Literatures (multiple) | JENG | English | 549 | 662 |
| PT | Literatures (multiple) | JFOL | Foreign Languages | 17 | 6 |

LC Sorted Checkout Data CLOSEUP

| 2009-2010 FISCAL YEAR PURCHASES AND CHECKOUT DATA | | | | | |
|----------------------------------------------------------|----------------------------------|------------------|---------------------------------|-----------------|---------------|
| CALL NUMBER RANGE | LC DESCRIPTION | FUND CODE | DEPT NAME | # TITLES | # CKOS |
| BF | Psychology | JPSY | Psychology | 219 | 321 |
| BJ | Ethics | JPHI | Philosophy | 28 | 23 |
| BL | Religions | JREL | Religious Studies | 52 | 92 |
| NA1-NA8480 | Architecture | JART | Art | 62 | 102 |
| NA9000-NA9428 | City Planning | JGEG | Geography | 1 | 3 |
| NK1160-NK1590; NK1700-NK3496.3; NK4700-NK4890 | Design, Interior Design, Costume | JIDM | Interior Design & Merchandising | 22 | 47 |

Calculating Use Factor by Year

| 2009-2010 CALCULATED USE FACTOR | | | | | | |
|---------------------------------|--------------------------------------|--------------|--------------|-------------|-------------|--------------------------------|
| FUND CODE | DEPT NAME | # TITLES | # CKOS | % of Titles | % of CKOS | % CKO divided by % Title |
| JANT | Anthropology | 181 | 217 | 1.70% | 0.85% | 0.498 |
| JART | Art | 423 | 600 | 3.97% | 2.34% | 0.589 |
| JBIO | Biology | 359 | 542 | 3.37% | 2.11% | 0.627 |
| JBUS | Business | 403 | 629 | 3.78% | 2.45% | 0.649 |
| JCDE | Child Development & Family Relations | 55 | 104 | 0.52% | 0.41% | 0.786 |
| JCHE | Chemistry | 104 | 72 | 0.98% | 0.28% | 0.288 |
| JCLS | Classics | 45 | 12 | 0.42% | 0.05% | 0.111 |
| JCMG | Construction Management | 24 | 72 | 0.23% | 0.28% | 1.246 |
| JCML | Curriculum | 3034 | 12069 | 28.48% | 47.07% | 1.653 |
| JCOM | Communication | 68 | 353 | 0.64% | 1.38% | 2.157 |
| JCRJ | Criminal Justice | 85 | 175 | 0.80% | 0.68% | 0.855 |
| JCRM | Coastal Resources Management | 10 | 9 | 0.09% | 0.04% | 0.374 |
| JCSC | Computer Science | 33 | 76 | 0.31% | 0.30% | 0.957 |
| JECO | Economics | 130 | 108 | 1.22% | 0.42% | 0.345 |
| JEDU | Education | 689 | 1249 | 6.47% | 4.87% | 0.753 |
| JEGR | Engineering | 282 | 329 | 2.65% | 1.28% | 0.485 |
| JENG | English | 923 | 4105 | 8.66% | 16.01% | 1.848 |
| JFOL | Foreign Languages | 273 | 288 | 2.56% | 1.12% | 0.438 |
| JGEG | Geography | 163 | 258 | 1.53% | 1.01% | 0.658 |
| JGEL | Geology | 45 | 37 | 0.42% | 0.14% | 0.342 |
| JHIS | History | 605 | 953 | 5.68% | 3.72% | 0.654 |
| JHPR | Health & Human Performance | 10 | 22 | 0.09% | 0.09% | 0.914 |
| JHSM | Hospitality Management | 31 | 57 | 0.29% | 0.22% | 0.764 |
| JIDM | Interior Design & Merchandising | 45 | 102 | 0.42% | 0.40% | 0.942 |
| JLIB | Library Science | 195 | 263 | 1.83% | 1.03% | 0.560 |
| JMAH | Maritime History | 64 | 76 | 0.60% | 0.30% | 0.493 |
| JMAT | Math | 243 | 178 | 2.28% | 0.69% | 0.304 |
| JMSC | Military Science | 43 | 49 | 0.40% | 0.19% | 0.473 |
| JMUS | Music | 586 | 551 | 5.50% | 2.15% | 0.391 |
| JNTD | Nutrition | 26 | 67 | 0.24% | 0.26% | 1.071 |
| JPHI | Philosophy | 169 | 45 | 1.59% | 0.18% | 0.111 |
| JPHY | Physics | 73 | 72 | 0.69% | 0.28% | 0.410 |
| JPOS | Political Science | 309 | 256 | 2.90% | 1.00% | 0.344 |
| JPSY | Psychology | 267 | 448 | 2.51% | 1.75% | 0.697 |
| JREF | Reference | 11 | 73 | 0.10% | 0.28% | 2.757 |
| JREL | Religious Studies | 181 | 238 | 1.70% | 0.93% | 0.546 |
| JSOC | Sociology | 122 | 224 | 1.15% | 0.87% | 0.763 |
| JSWK | Social Work | 159 | 172 | 1.49% | 0.67% | 0.449 |
| JTHA | Theatre Arts | 59 | 158 | 0.55% | 0.62% | 1.113 |
| JWST | Women's Studies | 126 | 331 | 1.18% | 1.29% | 1.092 |
| TOTALS | | 10653 | 25639 | 100% | 100% | 30.508 |

Calculating Use Factor by Year

CLOSEUP

| 2009-2010 CALCULATED USE FACTOR | | | | | | |
|---------------------------------|-----------|----------|--------|-------------|-----------|--------------------------|
| FUND CODE | DEPT NAME | # TITLES | # CKOS | % of Titles | % of CKOS | % CKO divided by % Title |
| JANT | Anthro | 181 | 217 | 1.70% | 0.85% | 0.498 |
| JART | Art | 423 | 600 | 3.97% | 2.34% | 0.589 |

Use Factor Averaged over Four Years

| FUND CODE | 2008-2009 USE FACTOR | 2009-2010 USE FACTOR | 2010-2011 USE FACTOR | 2011-2012 USE FACTOR | USE FACTOR AVERAGE |
|-----------|----------------------|----------------------|----------------------|----------------------|--------------------|
| JANT | 0.633 | 0.498 | 0.853 | 0.442 | 0.607 |
| JART | 0.785 | 0.589 | 0.975 | 0.660 | 0.752 |
| JBIO | 0.630 | 0.627 | 1.040 | 0.868 | 0.791 |
| JBUS | 0.460 | 0.649 | 1.237 | 0.605 | 0.738 |
| JCDE | 0.804 | 0.786 | 0.771 | 0.712 | 0.768 |
| JCHE | 0.496 | 0.288 | 2.048 | 3.554 | 1.596 |
| JCLS | 0.497 | 0.111 | 0.695 | 0.329 | 0.408 |
| JCMG | 1.226 | 1.246 | 0.958 | 0.877 | 1.077 |
| JCML | 2.246 | 1.653 | 1.001 | 1.897 | 1.699 |
| JCOM | 0.509 | 2.157 | 2.261 | 0.735 | 1.416 |
| JCRJ | 0.812 | 0.855 | 1.017 | 0.498 | 0.796 |
| JCRM | 0.470 | 0.374 | 0.655 | 2.223 | 0.931 |
| JCSC | 0.312 | 0.957 | 0.697 | 0.790 | 0.689 |
| JECO | 0.363 | 0.345 | 0.596 | 0.589 | 0.473 |
| JEDU | 0.859 | 0.753 | 1.087 | 0.672 | 0.843 |
| JEGR | 0.720 | 0.485 | 0.760 | 0.456 | 0.605 |
| JENG | 1.402 | 1.848 | 1.589 | 1.418 | 1.564 |
| JFOL | 0.587 | 0.438 | 0.528 | 0.760 | 0.578 |
| JGEG | 0.684 | 0.658 | 0.942 | 0.754 | 0.759 |
| JGEL | 0.274 | 0.342 | 0.609 | 0.458 | 0.421 |
| JHIS | 0.593 | 0.654 | 0.720 | 0.561 | 0.632 |
| JHPR | 1.093 | 0.914 | 1.400 | 0.937 | 1.086 |
| JHSM | 0.393 | 0.764 | 1.821 | 0.599 | 0.894 |
| JIDM | 1.004 | 0.942 | 0.842 | 0.801 | 0.897 |
| JLIB | 1.058 | 0.560 | 1.307 | 0.913 | 0.960 |
| JMAH | 0.918 | 0.493 | 1.049 | 0.770 | 0.808 |
| JMAT | 0.275 | 0.304 | 0.457 | 0.527 | 0.391 |
| JMSC | 0.421 | 0.473 | 0.908 | 0.371 | 0.543 |
| JMUS | 0.761 | 0.391 | 0.761 | 0.961 | 0.719 |
| JNTD | 0.805 | 1.071 | 1.866 | 2.635 | 1.594 |
| JPHI | 0.297 | 0.111 | 0.712 | 0.299 | 0.355 |
| JPHY | 0.451 | 0.410 | 0.583 | 1.077 | 0.630 |
| JPOS | 0.383 | 0.344 | 0.776 | 0.435 | 0.485 |
| JPSY | 0.733 | 0.697 | 1.311 | 0.754 | 0.874 |
| JREF | 0.194 | 2.757 | 0.218 | 0.000 | 0.793 |
| JREL | 0.686 | 0.546 | 1.129 | 0.499 | 0.715 |
| JSOC | 0.574 | 0.763 | 1.275 | 0.748 | 0.840 |
| JSWK | 0.809 | 0.449 | 0.636 | 0.464 | 0.590 |
| JTHA | 0.798 | 1.113 | 0.733 | 0.727 | 0.843 |
| JWST | 0.940 | 1.092 | 1.417 | 0.906 | 1.089 |

Use Factor Averaged over Four Years

CLOSEUP

| FUND CODE | 2008-2009 USE FACTOR | 2009-2010 USE FACTOR | 2010-2011 USE FACTOR | 2011-2012 USE FACTOR | USE FACTOR AVERAGE |
|----------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------|
| JANT | 0.633 | 0.498 | 0.853 | 0.442 | 0.607 |
| JART | 0.785 | 0.589 | 0.975 | 0.660 | 0.752 |

Use Factor Formula - In Use

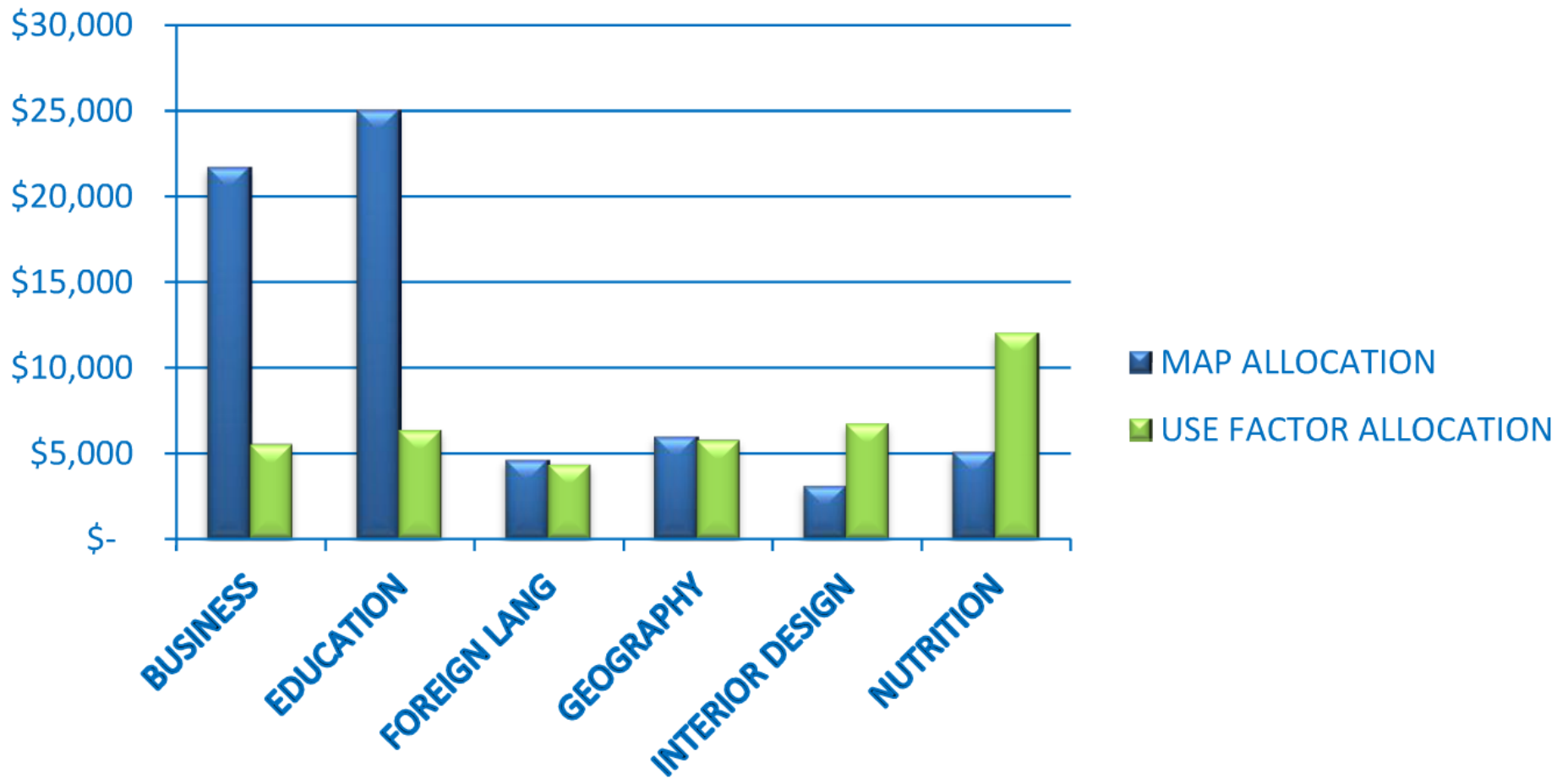
| USE FACTOR FORMULA TO DIVIDE AVAILABLE FIRM ORDER MONEY AMONG SUBJECT FUNDS | FOUR YEAR USE FACTOR AVERAGE | AVERAGE PRICE PAID | | FINAL CALCULATIONS | | ALLOCATION AMOUNT | | |
|-----------------------------------------------------------------------------|------------------------------|--------------------|--------|-----------------------|---------------------------------------|-------------------|----------------|----------------|
| | | AMT | PTS | USE FACTOR PLUS PRICE | ENTITLED TO THIS % OF AVAILABLE MONEY | \$50,000 YEAR | \$150,000 YEAR | \$250,000 YEAR |
| JANT | 0.607 | \$ 49.93 | 1.99% | 0.626 | 1.83% | \$ 914.60 | \$ 2,743.81 | \$ 4,573.02 |
| JART | 0.752 | \$ 56.81 | 2.26% | 0.775 | 2.26% | \$ 1,131.36 | \$ 3,394.08 | \$ 5,656.80 |
| JBIO | 0.791 | \$ 79.51 | 3.17% | 0.823 | 2.40% | \$ 1,201.32 | \$ 3,603.95 | \$ 6,006.58 |
| JBUS | 0.738 | \$ 35.23 | 1.40% | 0.752 | 2.19% | \$ 1,097.48 | \$ 3,292.43 | \$ 5,487.38 |
| JCDE | 0.768 | \$ 32.43 | 1.29% | 0.781 | 2.28% | \$ 1,140.40 | \$ 3,421.21 | \$ 5,702.02 |
| JCHE | 1.596 | \$ 96.69 | 3.85% | 1.635 | 4.77% | \$ 2,387.09 | \$ 7,161.26 | \$ 11,935.43 |
| JCLS | 0.408 | \$ 77.97 | 3.11% | 0.439 | 1.28% | \$ 640.81 | \$ 1,922.42 | \$ 3,204.04 |
| JCMG | 1.077 | \$ 85.05 | 3.39% | 1.111 | 3.24% | \$ 1,621.89 | \$ 4,865.68 | \$ 8,109.47 |
| JCML | 1.699 | \$ 17.66 | 0.70% | 1.706 | 4.98% | \$ 2,490.82 | \$ 7,472.46 | \$ 12,454.10 |
| JCOM | 1.416 | \$ 39.29 | 1.57% | 1.431 | 4.18% | \$ 2,089.81 | \$ 6,269.44 | \$ 10,449.06 |
| JCRJ | 0.796 | \$ 50.24 | 2.00% | 0.816 | 2.38% | \$ 1,191.25 | \$ 3,573.76 | \$ 5,956.26 |
| JCRM | 0.931 | \$ 94.86 | 3.78% | 0.969 | 2.83% | \$ 1,414.07 | \$ 4,242.20 | \$ 7,070.34 |
| JCSC | 0.689 | \$ 66.02 | 2.63% | 0.715 | 2.09% | \$ 1,044.48 | \$ 3,133.44 | \$ 5,222.40 |
| JECO | 0.473 | \$ 45.02 | 1.79% | 0.491 | 1.43% | \$ 717.19 | \$ 2,151.58 | \$ 3,585.97 |
| JEDU | 0.843 | \$ 42.77 | 1.71% | 0.860 | 2.51% | \$ 1,255.17 | \$ 3,765.52 | \$ 6,275.87 |
| JEGR | 0.605 | \$ 122.05 | 4.87% | 0.654 | 1.91% | \$ 954.65 | \$ 2,863.96 | \$ 4,773.26 |
| JENG | 1.564 | \$ 46.28 | 1.84% | 1.583 | 4.62% | \$ 2,310.79 | \$ 6,932.36 | \$ 11,553.93 |
| JFOL | 0.578 | \$ 30.28 | 1.21% | 0.590 | 1.72% | \$ 861.94 | \$ 2,585.82 | \$ 4,309.71 |
| JGEG | 0.759 | \$ 60.69 | 2.42% | 0.784 | 2.29% | \$ 1,143.95 | \$ 3,431.86 | \$ 5,719.77 |
| JGEL | 0.421 | \$ 95.02 | 3.79% | 0.459 | 1.34% | \$ 669.57 | \$ 2,008.70 | \$ 3,347.83 |
| JHIS | 0.632 | \$ 38.14 | 1.52% | 0.648 | 1.89% | \$ 945.37 | \$ 2,836.12 | \$ 4,726.87 |
| JHPR | 1.086 | \$ 59.79 | 2.38% | 1.110 | 3.24% | \$ 1,620.21 | \$ 4,860.63 | \$ 8,101.05 |
| JHSM | 0.894 | \$ 60.05 | 2.39% | 0.918 | 2.68% | \$ 1,340.19 | \$ 4,020.57 | \$ 6,700.95 |
| JIDM | 0.897 | \$ 46.30 | 1.85% | 0.916 | 2.67% | \$ 1,336.86 | \$ 4,010.58 | \$ 6,684.30 |
| JLIB | 0.960 | \$ 58.55 | 2.33% | 0.983 | 2.87% | \$ 1,435.28 | \$ 4,305.83 | \$ 7,176.38 |
| JMAH | 0.808 | \$ 54.19 | 2.16% | 0.829 | 2.42% | \$ 1,210.62 | \$ 3,631.85 | \$ 6,053.08 |
| JMAT | 0.391 | \$ 62.17 | 2.48% | 0.416 | 1.21% | \$ 606.77 | \$ 1,820.32 | \$ 3,033.87 |
| JMSC | 0.543 | \$ 37.38 | 1.49% | 0.558 | 1.63% | \$ 815.00 | \$ 2,445.01 | \$ 4,075.02 |
| JMUS | 0.719 | \$ 39.37 | 1.57% | 0.734 | 2.14% | \$ 1,071.97 | \$ 3,215.92 | \$ 5,359.87 |
| JNTD | 1.594 | \$ 109.52 | 4.37% | 1.638 | 4.78% | \$ 2,391.44 | \$ 7,174.33 | \$ 11,957.22 |
| JPHI | 0.355 | \$ 43.25 | 1.72% | 0.372 | 1.09% | \$ 542.82 | \$ 1,628.47 | \$ 2,714.12 |
| JPHY | 0.630 | \$ 71.47 | 2.85% | 0.659 | 1.92% | \$ 961.51 | \$ 2,884.54 | \$ 4,807.57 |
| JPOS | 0.485 | \$ 31.88 | 1.27% | 0.497 | 1.45% | \$ 726.12 | \$ 2,178.37 | \$ 3,630.62 |
| JPSY | 0.874 | \$ 49.41 | 1.97% | 0.893 | 2.61% | \$ 1,304.29 | \$ 3,912.88 | \$ 6,521.47 |
| JREF | 0.793 | \$ 294.95 | 11.76% | 0.910 | 2.66% | \$ 1,328.77 | \$ 3,986.30 | \$ 6,643.84 |
| JREL | 0.715 | \$ 47.07 | 1.88% | 0.734 | 2.14% | \$ 1,071.17 | \$ 3,213.50 | \$ 5,355.84 |
| JSOC | 0.840 | \$ 45.00 | 1.79% | 0.858 | 2.51% | \$ 1,252.87 | \$ 3,758.62 | \$ 6,264.37 |
| JSWK | 0.590 | \$ 57.21 | 2.28% | 0.612 | 1.79% | \$ 894.13 | \$ 2,682.38 | \$ 4,470.63 |
| JTHA | 0.843 | \$ 28.20 | 1.12% | 0.854 | 2.49% | \$ 1,246.79 | \$ 3,740.38 | \$ 6,233.96 |
| JWST | 1.089 | \$ 50.79 | 2.02% | 1.109 | 3.24% | \$ 1,619.15 | \$ 4,857.45 | \$ 8,095.75 |
| Totals | 33.247 | \$ 2,508.49 | 100% | 34.247 | 100.00% | \$ 50,000.00 | \$ 150,000.00 | \$ 250,000.00 |

Use Factor Formula - In Use CLOSEUP

| USE FACTOR FORMULA TO DIVIDE AVAILABLE FIRM ORDER MONEY AMONG SUBJECT FUNDS | FOUR YEAR USE FACTOR AVERAGE | AVERAGE PRICE PAID | | FINAL CALCULATIONS | | ALLOCATION AMOUNT | | |
|-----------------------------------------------------------------------------------------------|---------------------------------------|--------------------|-------|-----------------------------|---------------------------------------------------|-------------------|-------------------|-------------------|
| | | AMT | PTS | USE FACTOR PLUS PRICE | ENTITLED TO THIS % OF AVAILABLE MONEY | \$50,000 YEAR | \$150,000 YEAR | \$250,000 YEAR |
| JANT | 0.607 | \$ 49.93 | 1.99% | 0.626 | 1.83% | \$ 914.60 | \$ 2,743.81 | \$ 4,573.02 |
| JART | 0.752 | \$ 56.81 | 2.26% | 0.775 | 2.26% | \$ 1,131.36 | \$ 3,394.08 | \$ 5,656.80 |

Allocation Comparison

MAP vs. USE FACTOR ALLOCATIONS



Caveats

- What constitutes a circulation? Both reserves use and renewals count. Data was checked for current reserves but we don't keep historical reserve lists
- In-House circulation data: We do not have for anything housed in Joyner Library. Music Library keeps this data, but we did not use it in this first iteration of the process
- Music's funds will need to be increased accordingly

Next Steps

- Factor in Music in-house use
- Figure out why ILLiad reports didn't pull all of the ILL data (have call into OCLC about problem)
- Test formula this year
- Take to Senate Libraries Committee this fall