
A Novel Approach to Relating Resource Expenditures to Academic Units

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NCSU Libraries
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The Questions

- How do the NCSU Libraries' expenditures on resources support the research and teaching needs of diverse colleges and departments at NCSU?

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- How do the NCSU Libraries' expenditures on resources support the research and teaching needs of diverse colleges and departments at NCSU?
- What data exist that might help us understand how our resource expenditures look in terms of the departments we serve?

NCSU Context

NCSU Context

- ~31,000 students
- ~8,000 faculty
- \$8.5 - \$10 million collection budget
- 4 million volumes
- 1 main library, 4 branch libraries
- Engineering, Agriculture, Science, Technology, Veterinary Medicine

Outline

- Data & Sources
- Structuring the Data
- Data Storage
- Exploring the Data
- Other Considerations
- Future Plans

Data & Sources

Library Expenditures

Expenditures Data

Material Type:

Expenditures Data

Material Type:

- Monographs
(Quantity & Cost)

Expenditures Data

Material Type:

- Monographs
(Quantity & Cost)
 - Firm Order

Expenditures Data

Material Type:

- Monographs
(Quantity & Cost)
 - Firm Order
 - Approval Plan

Expenditures Data

Material Type:

- Monographs
(Quantity & Cost)
 - Firm Order
 - Approval Plan
- Serials (Cost)

Expenditures Data

Material Type:

- Monographs
(Quantity & Cost)
 - Firm Order
 - Approval Plan
- Serials (Cost)
- Databases (Cost)

Expenditures Data

Material Type:

- Monographs
(Quantity & Cost)
 - Firm Order
 - Approval Plan
- Serials (Cost)
- Databases (Cost)

Subject:

Expenditures Data

Material Type:

- Monographs
(Quantity & Cost)
 - Firm Order
 - Approval Plan
- Serials (Cost)
- Databases (Cost)

Subject:

- Subject Identifier

Subject Identifiers

- Four Letters
- ~129 Codes
- Broad & Narrow
- NCSU Specific
- Assigned at purchase

Subject Identifiers

Examples:

- ENTO – Entomology
- GTEC – General Technology
- NATM – Atmospheric Sciences NRL*
- TDES – Textiles Design

* NRL: Natural Resources Library

Data Sources

- Our ILS (Sirsi)
- Book Vendor (YBP)

Academic Department Data

Academic Department Data

- Faculty Headcount

Academic Department Data

- Faculty Headcount
- Enrolled Student Headcount

Academic Department Data

- Faculty Headcount
- Enrolled Student Headcount
 - Graduate Students

Academic Department Data

- Faculty Headcount
- Enrolled Student Headcount
 - Graduate Students
 - Undergraduate Students

Academic Department Data

- Faculty Headcount
- Enrolled Student Headcount
 - Graduate Students
 - Undergraduate Students
- PhD Degrees Awarded

Academic Department Data

- Faculty Headcount
- Enrolled Student Headcount
 - Graduate Students
 - Undergraduate Students
- PhD Degrees Awarded
- Research Grant Income

Data Sources

- NCSU Office of University Planning and Analysis
 - Requested Spreadsheet of Data
- NCSU's Sponsored Programs & Regulatory Compliance Services
 - Scraped HTML from web query

Structuring the Data

Method

- To connect library expenditures and data about departments we developed a mapping between subject identifiers and departments.

Why Do This?

- We've never had a good way of looking at data about expenditures and data about departments next to each other.
- Make connections between library expenditures and department demographics.

Challenges

- It's a judgment call whether a particular subject applies to a department.

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- It's a judgment call whether a particular subject applies to a department.
- There is no one correct way to do this.

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- It's a judgment call whether a particular subject applies to a department.
- There is no one correct way to do this.
- We did our best.

Rules We Followed

- A Subject Identifier can be applied to more than one department.

Rules We Followed

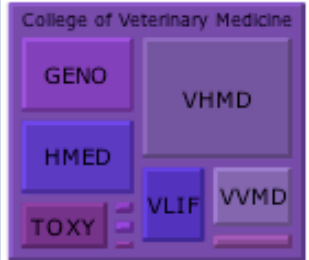
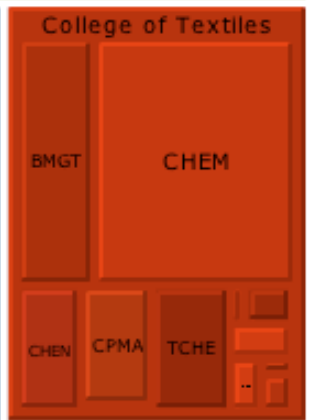
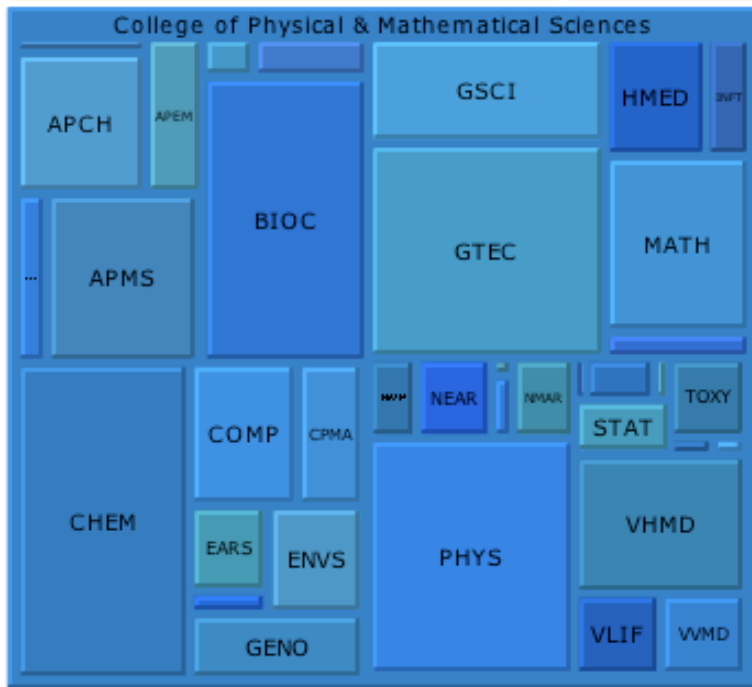
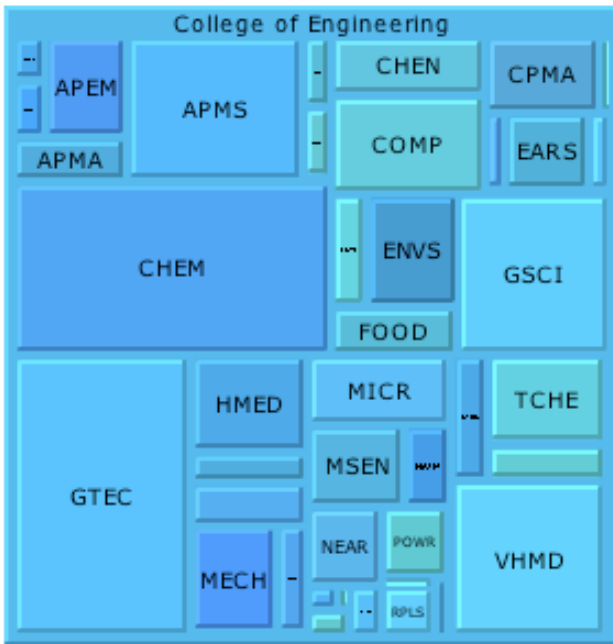
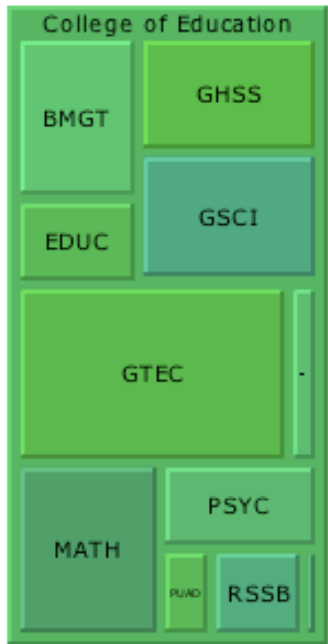
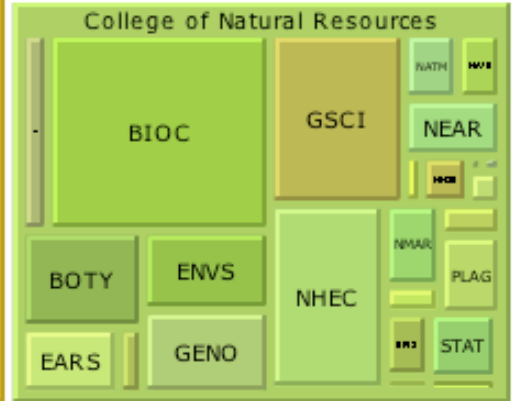
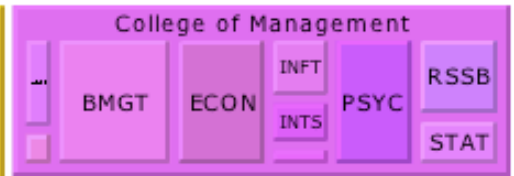
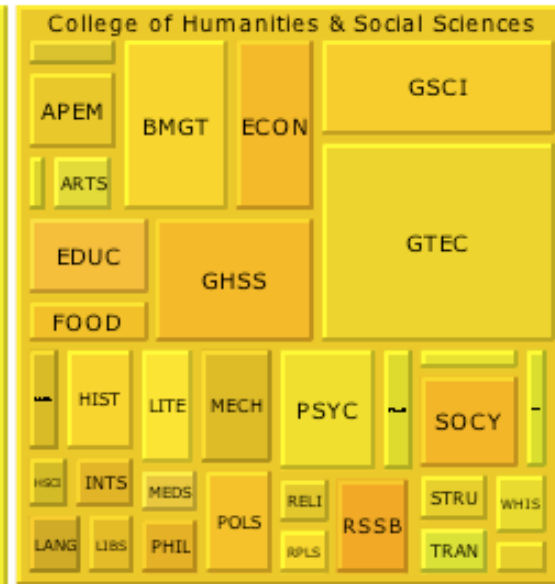
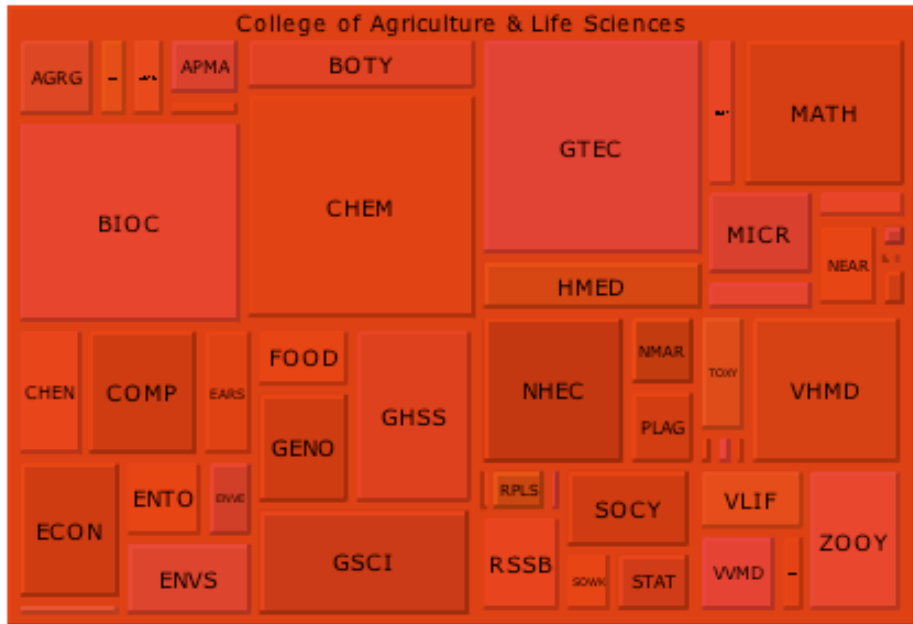
- A Subject Identifier can be applied to more than one department.
- The expenditure amount associated with the Subject Identifier applies to departments in full (no weighting).

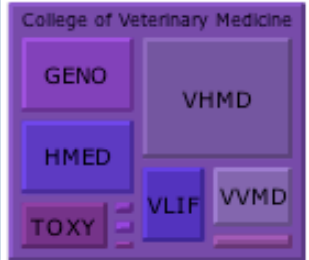
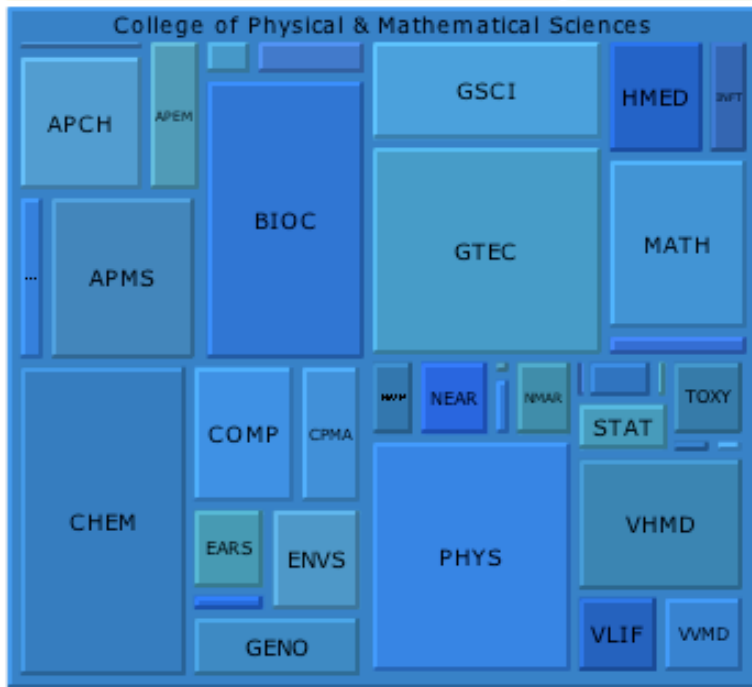
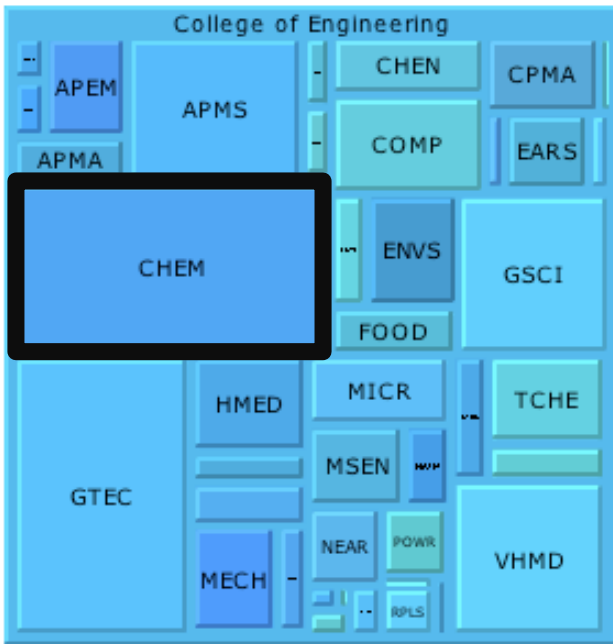
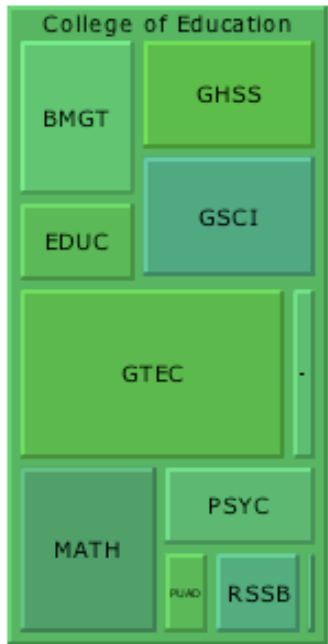
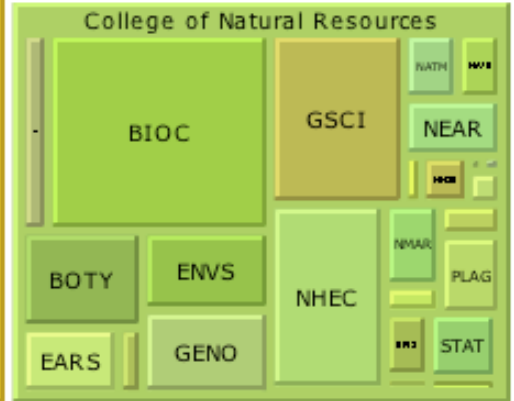
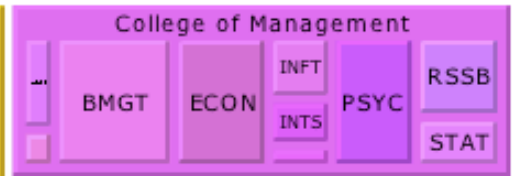
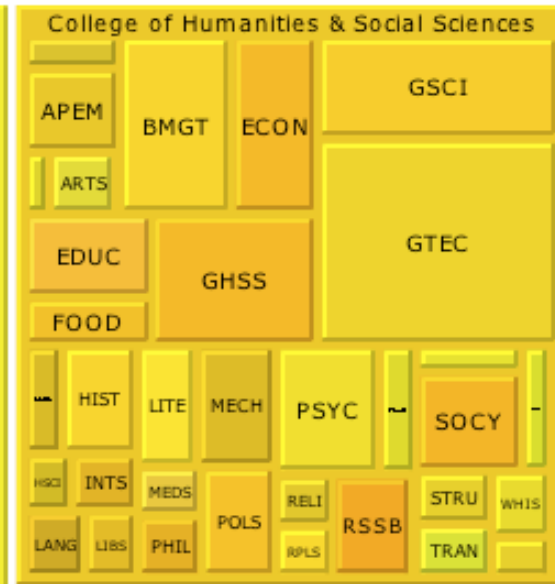
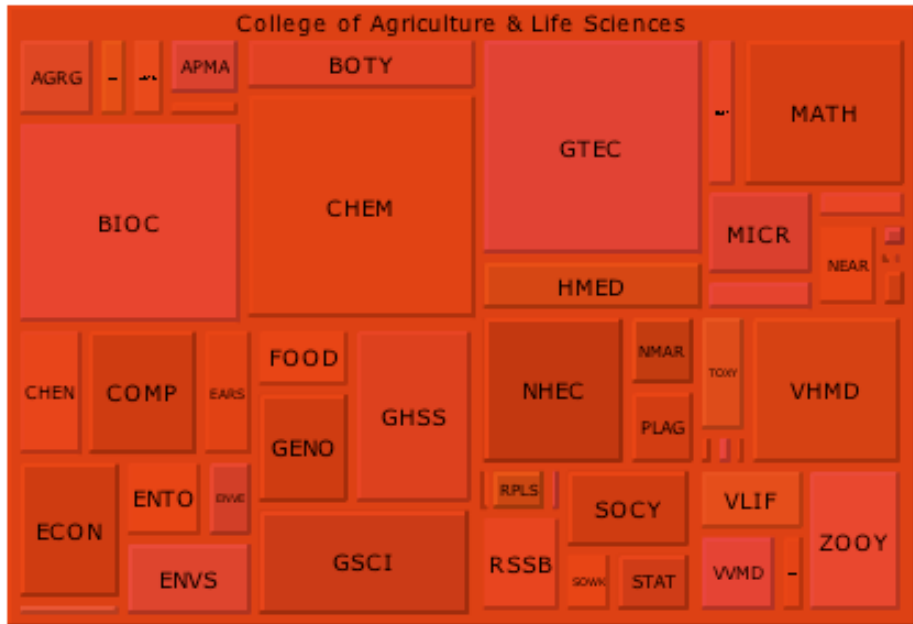
Rules We Followed

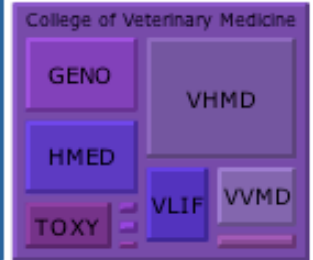
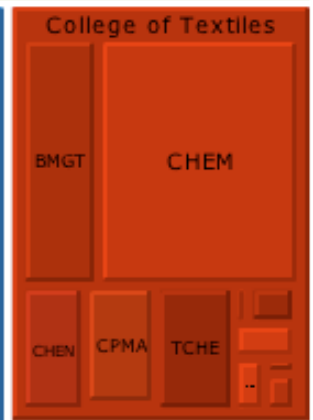
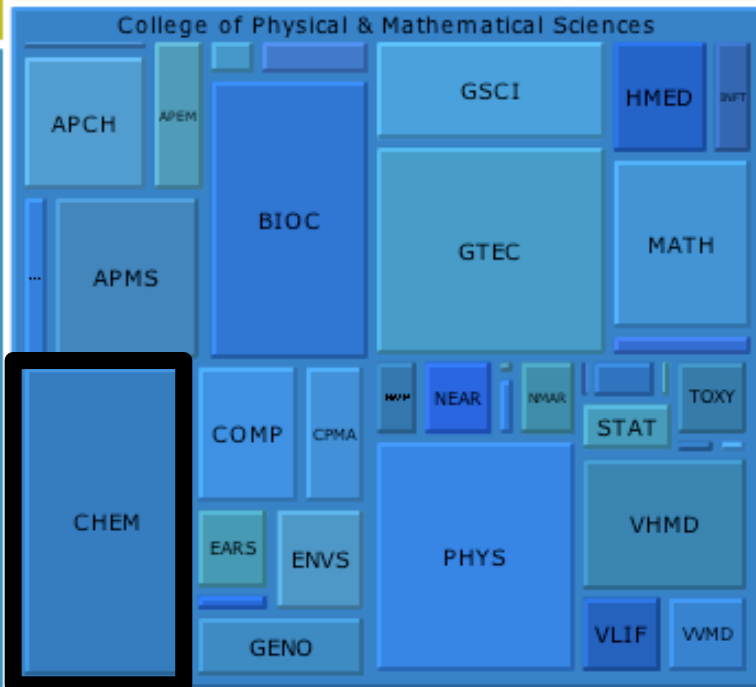
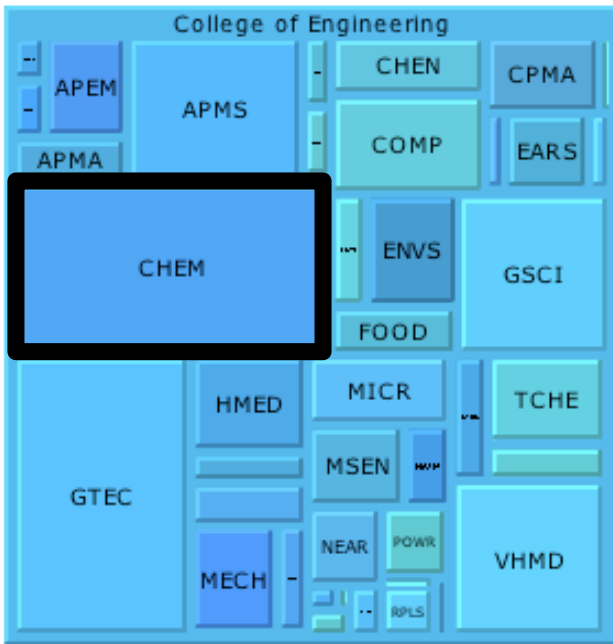
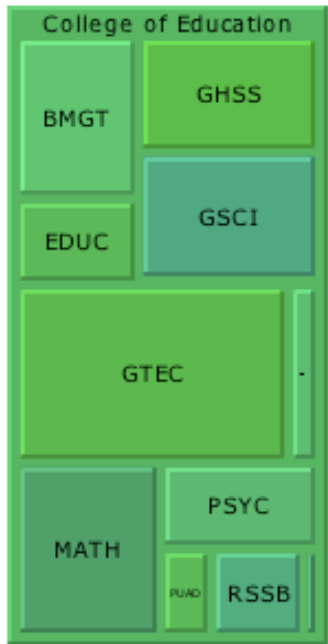
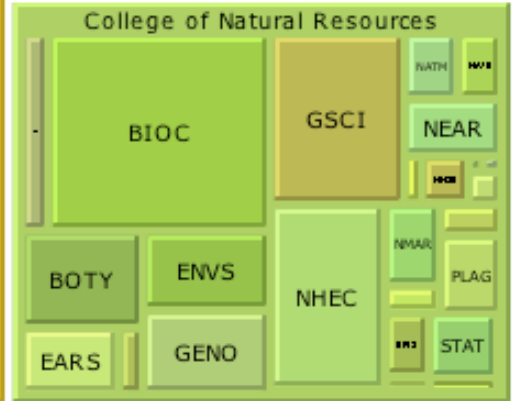
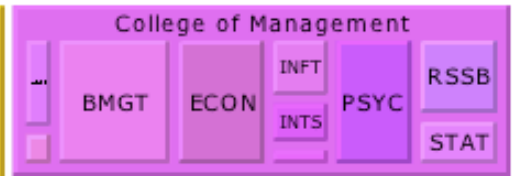
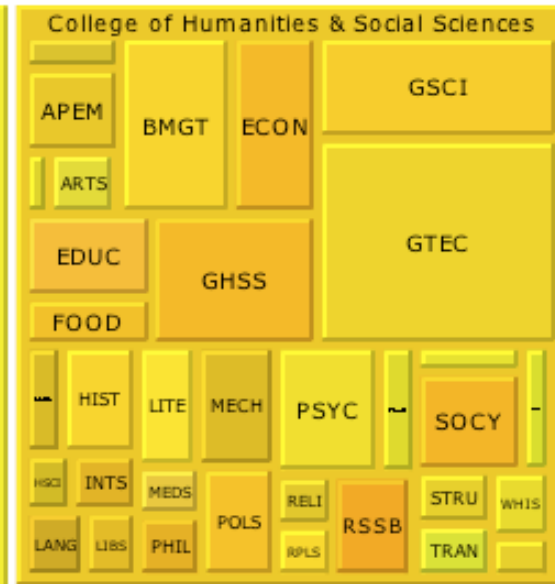
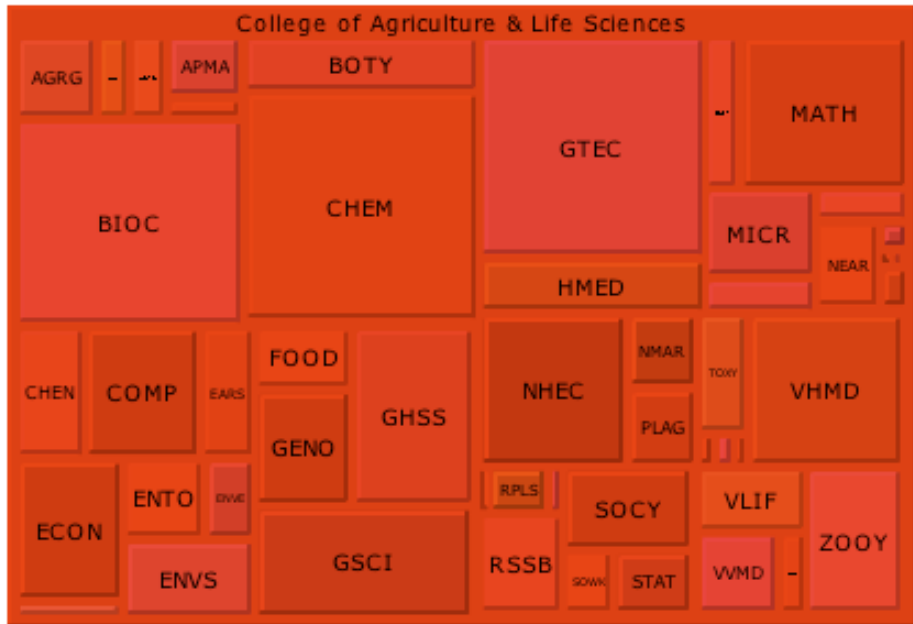
- A Subject Identifier can be applied to more than one department.
- The expenditure amount associated with the Subject Identifier applies to departments in full (no weighting).
- Tried to find a balanced approach – not too liberal and not too conservative.

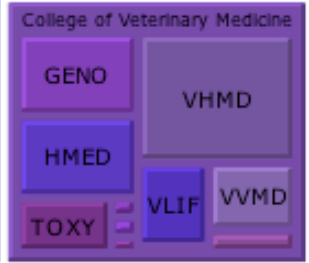
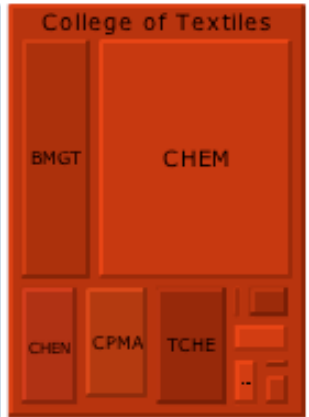
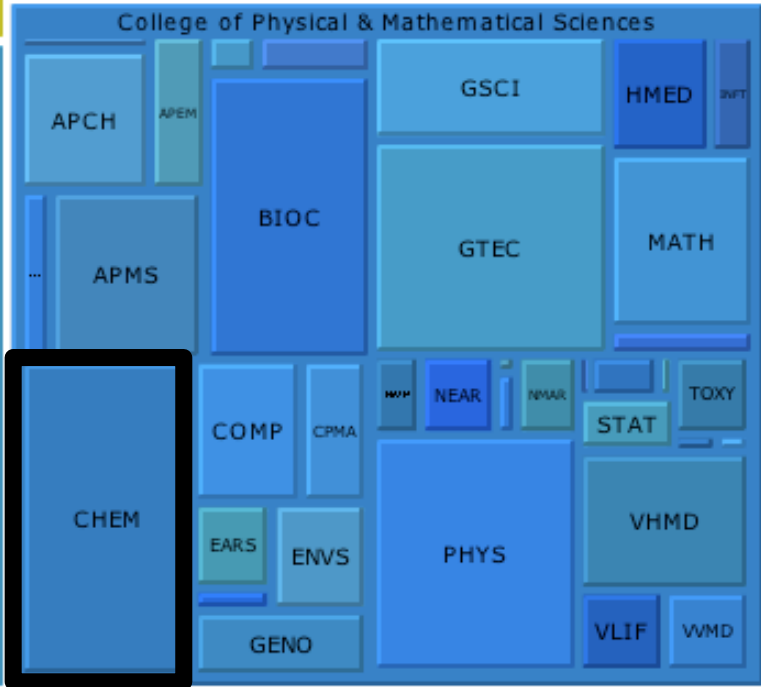
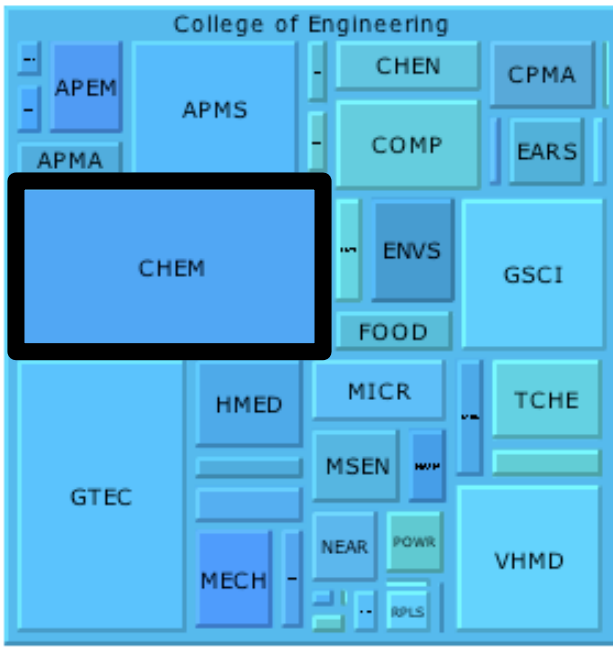
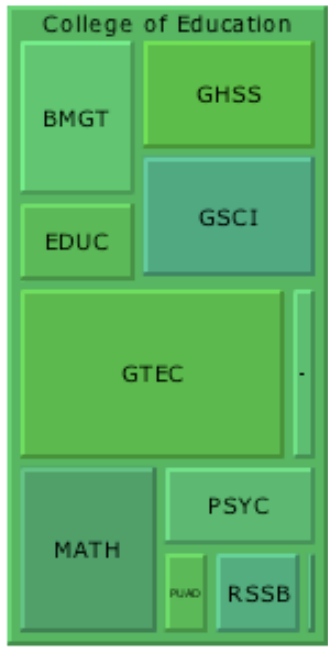
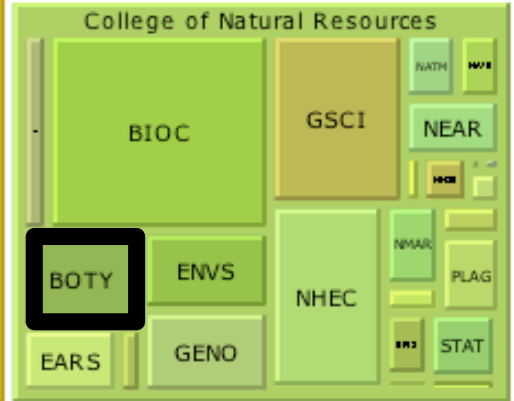
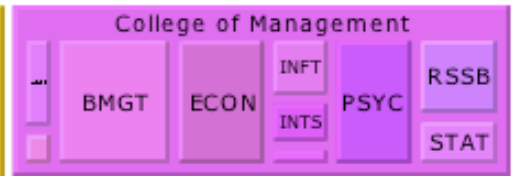
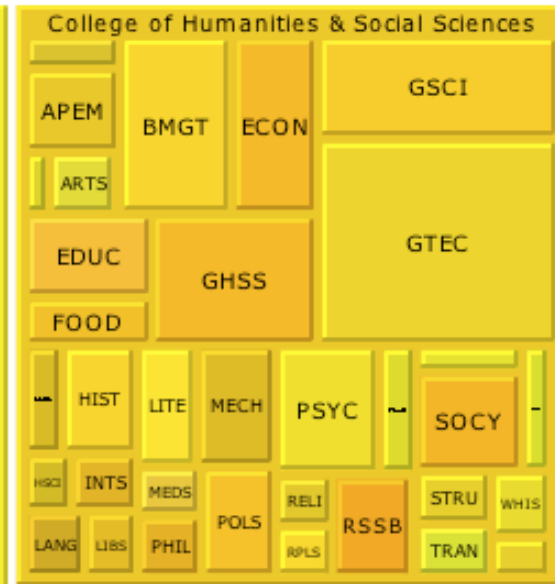
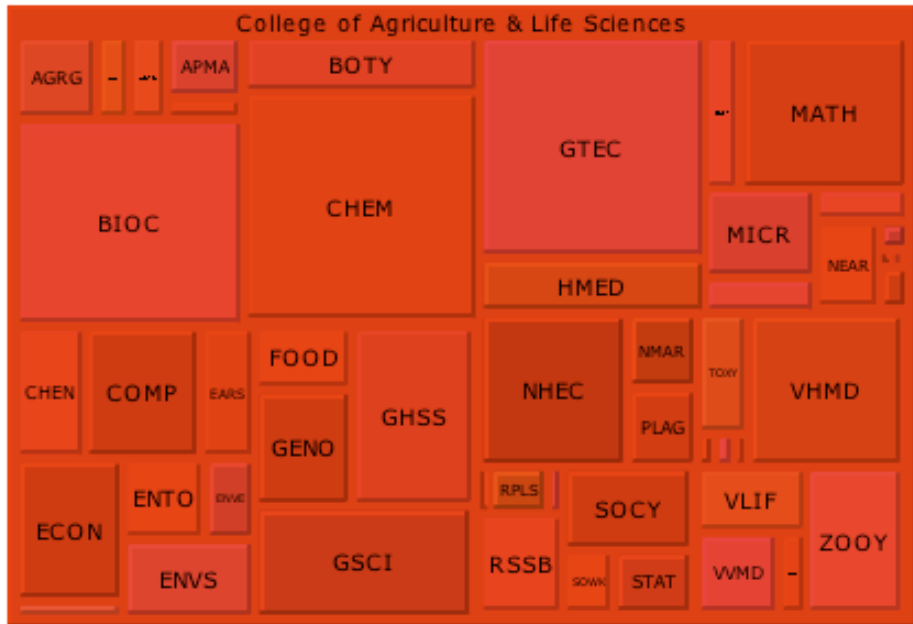
An Example Mapping

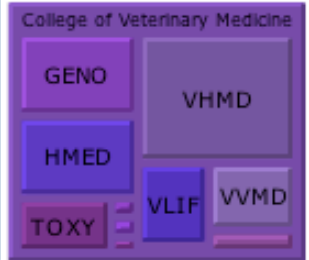
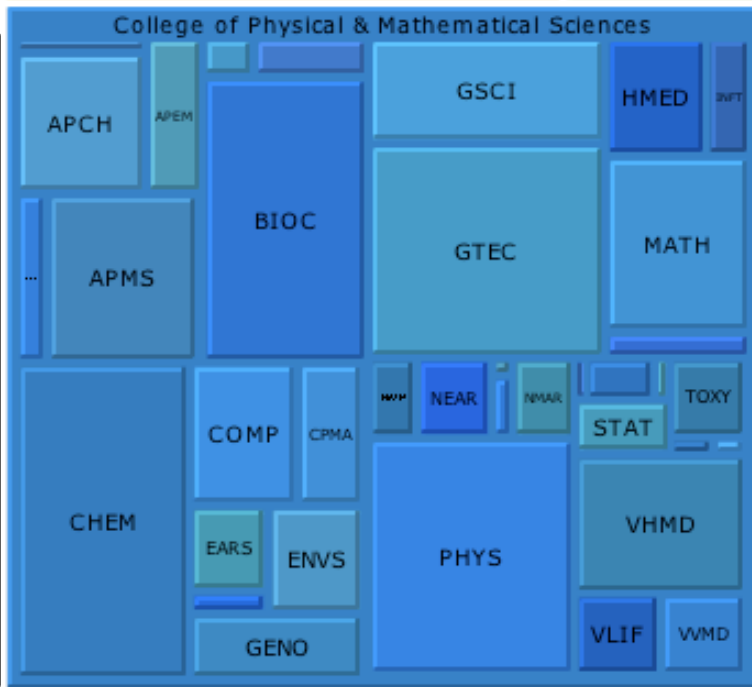
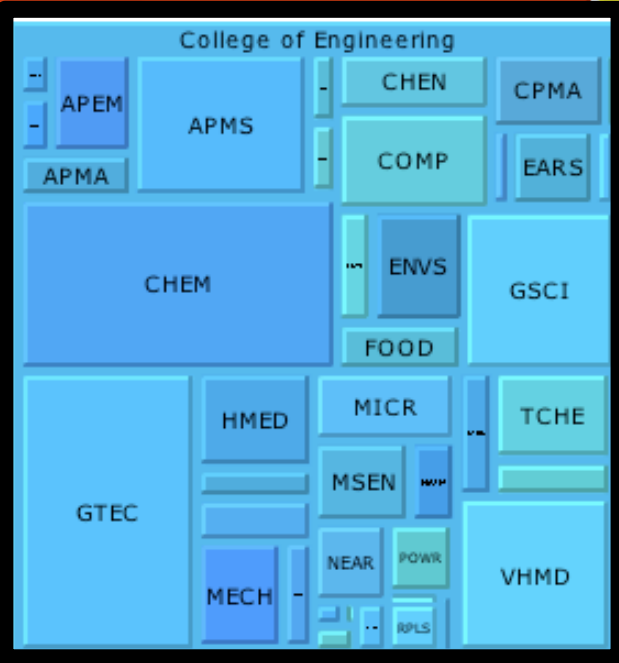
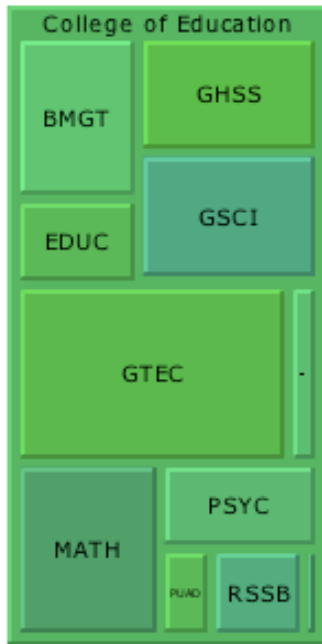
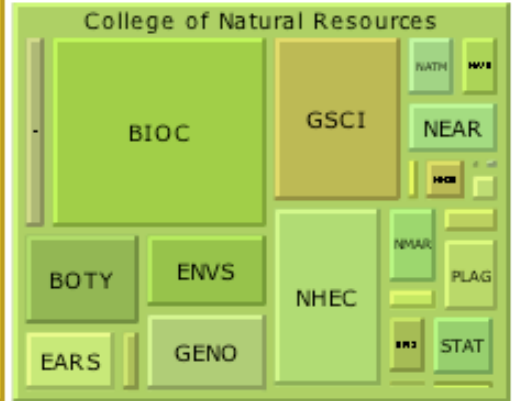
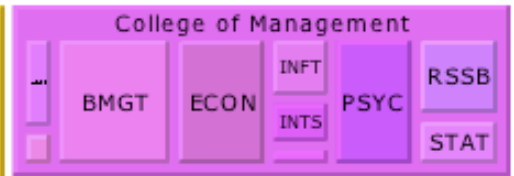
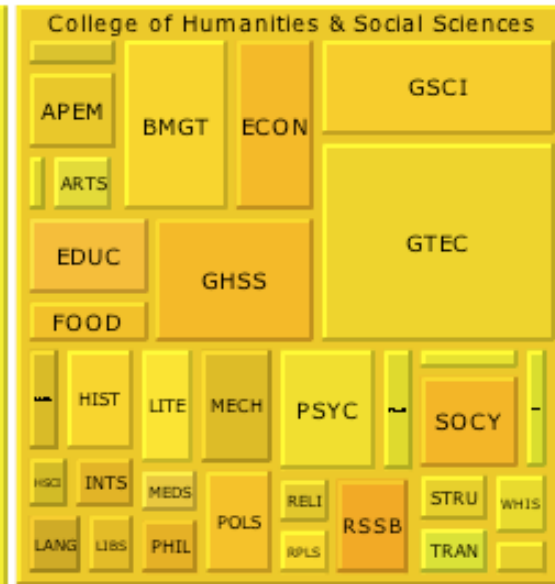
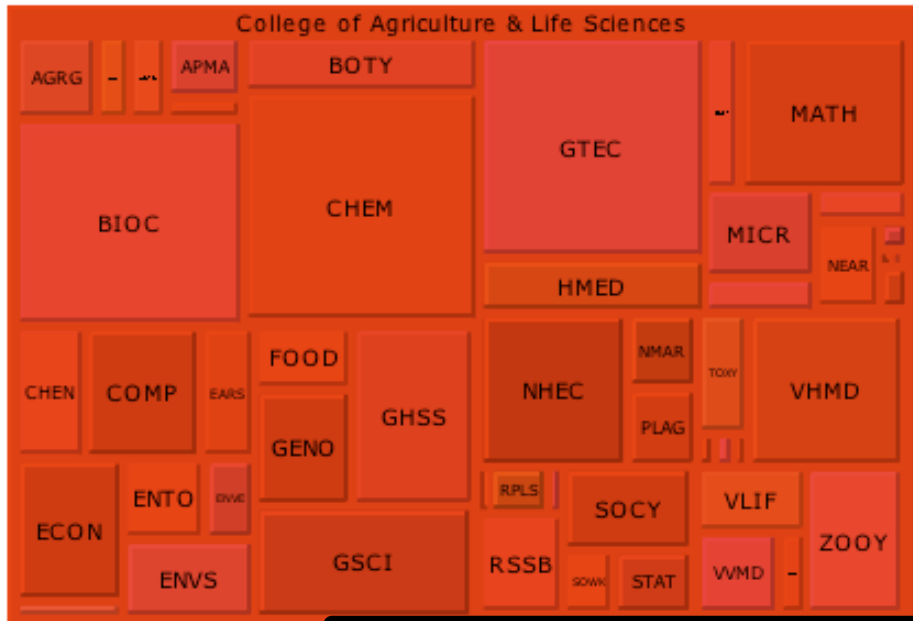
- Agricultural & Resource Economics
 - NATR - Natural Resources
 - ENVS - Environmental Sciences
 - GSCI - General Science
 - AREC - Agricultural & Resource Economics
 - AGRG - Agriculture (General)
 - ECON - Economics
 - RPLS - Reference Physical and Life Sciences

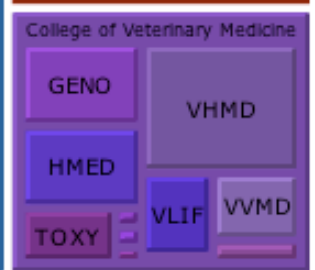
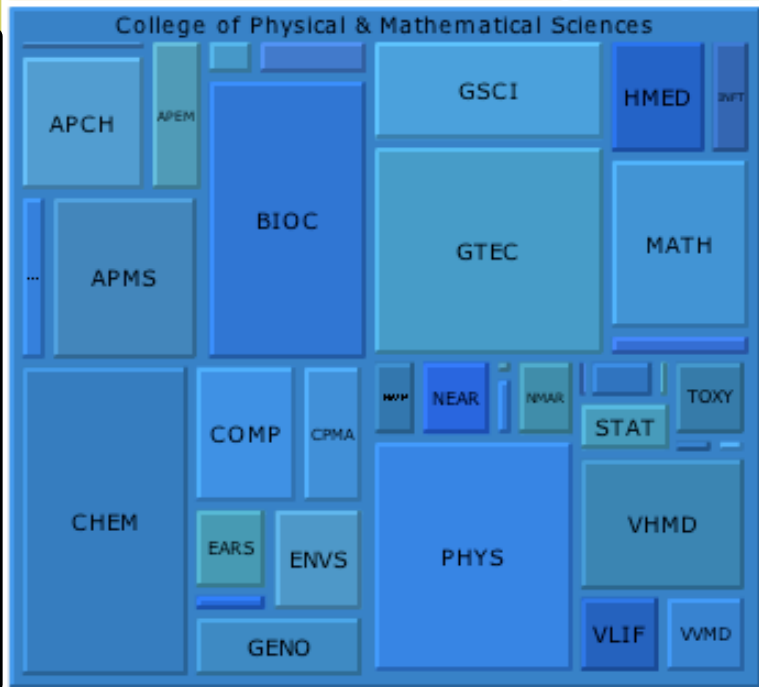
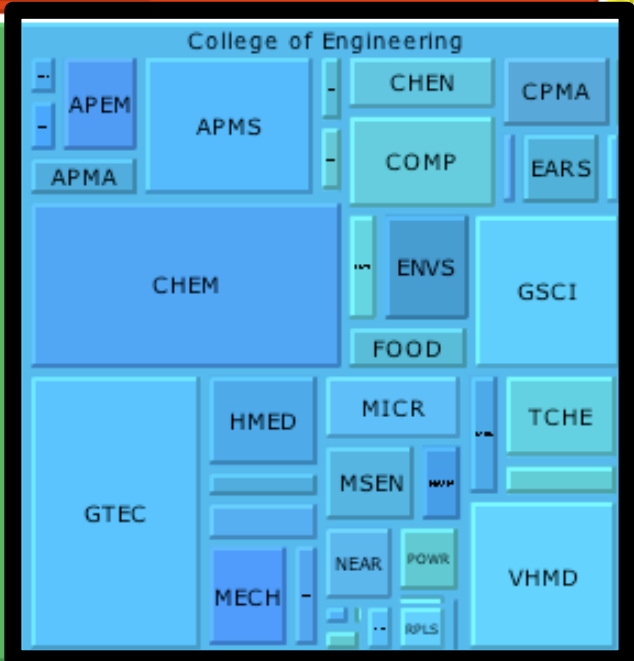
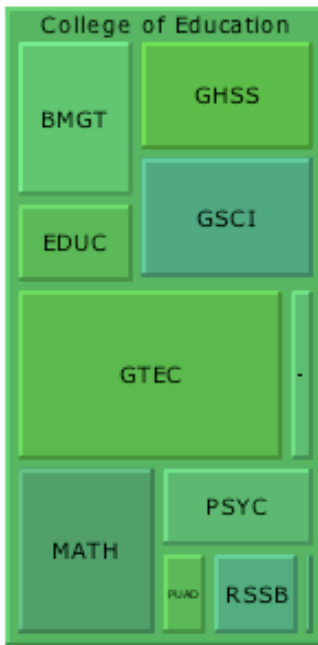
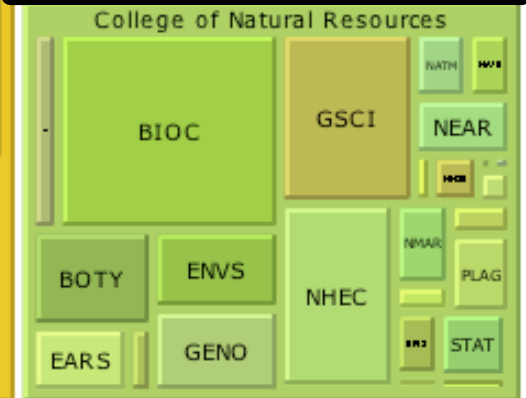
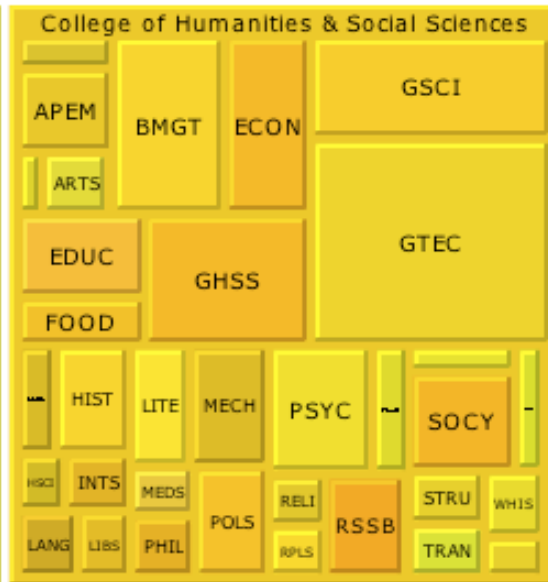
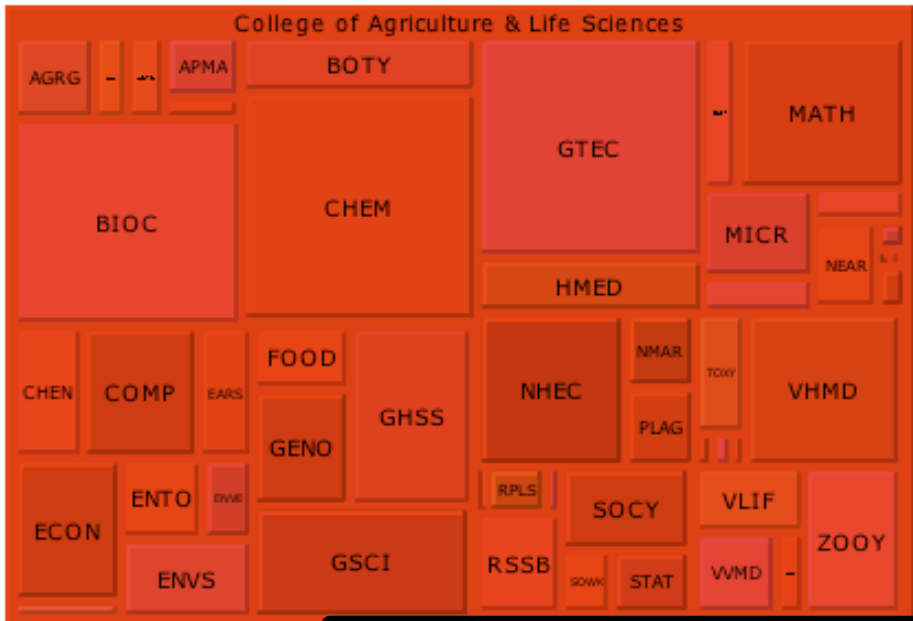












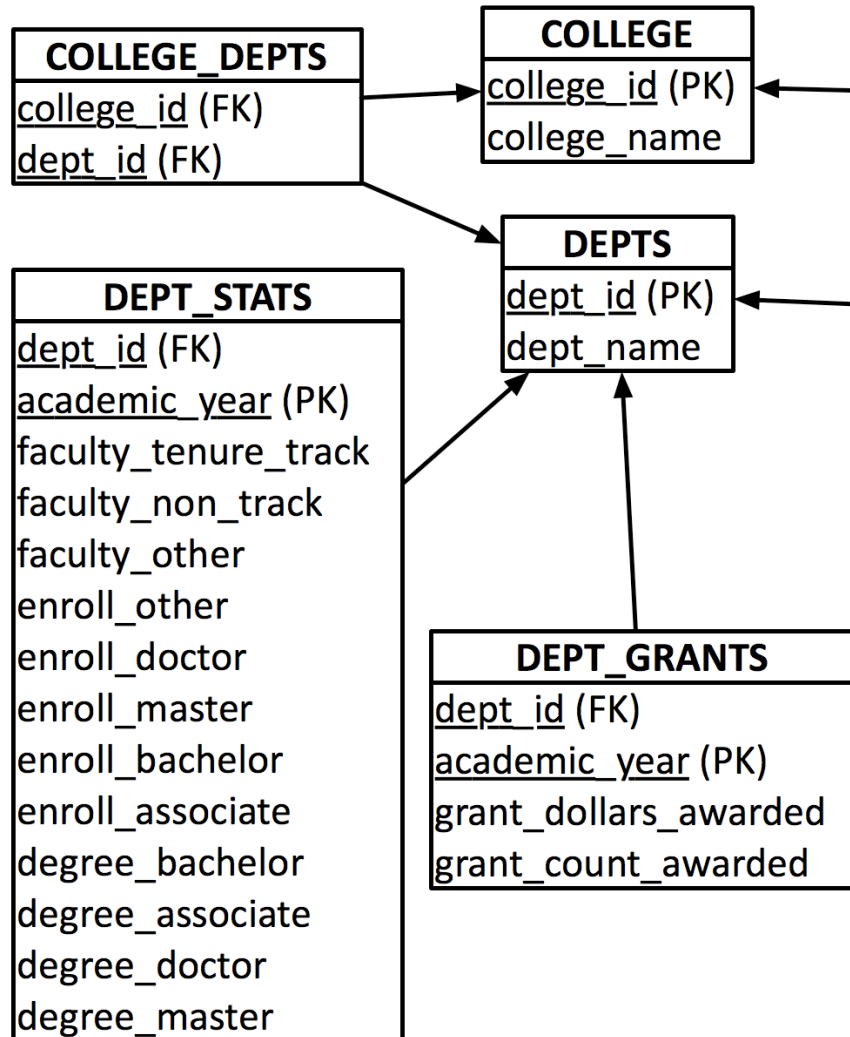
Storing the Data



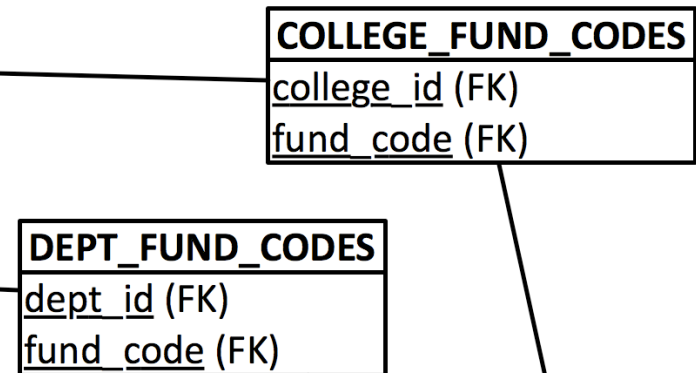
Why a Database?

- Helps enforce data model and data integrity
- Only have to add new data – not rebuild relationships and other data
- Flexible output options: Web, custom queries, canned queries

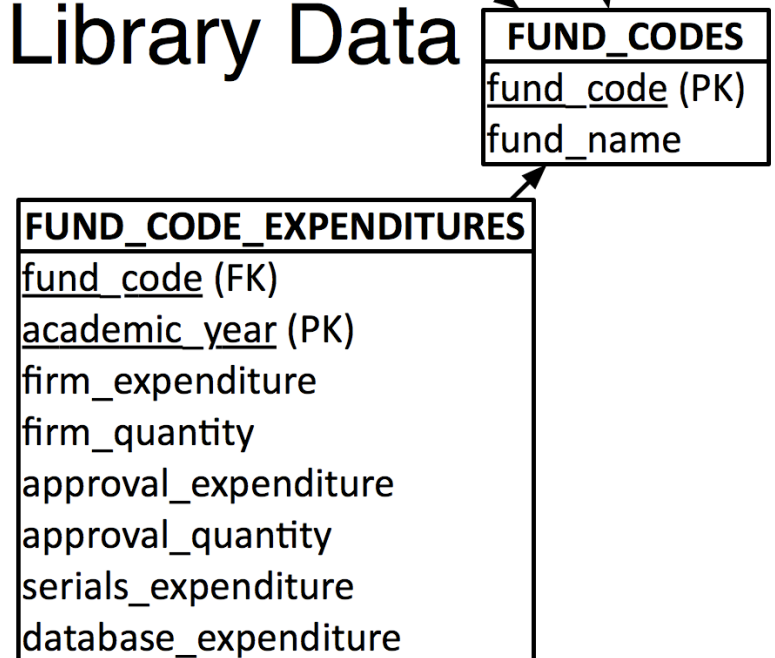
Department Data



Mapping



Library Data



Exploring the Data

Data Portal

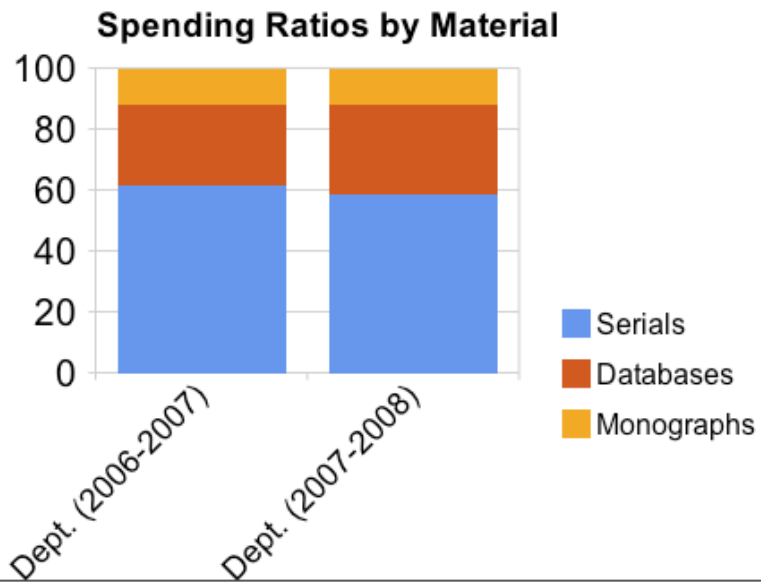
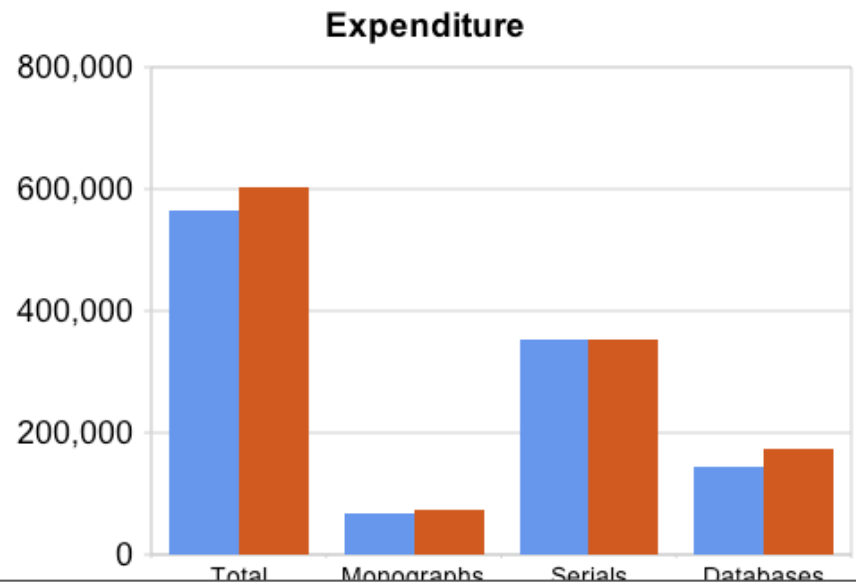
Compare NCSU Departments

Average Department

Average Department

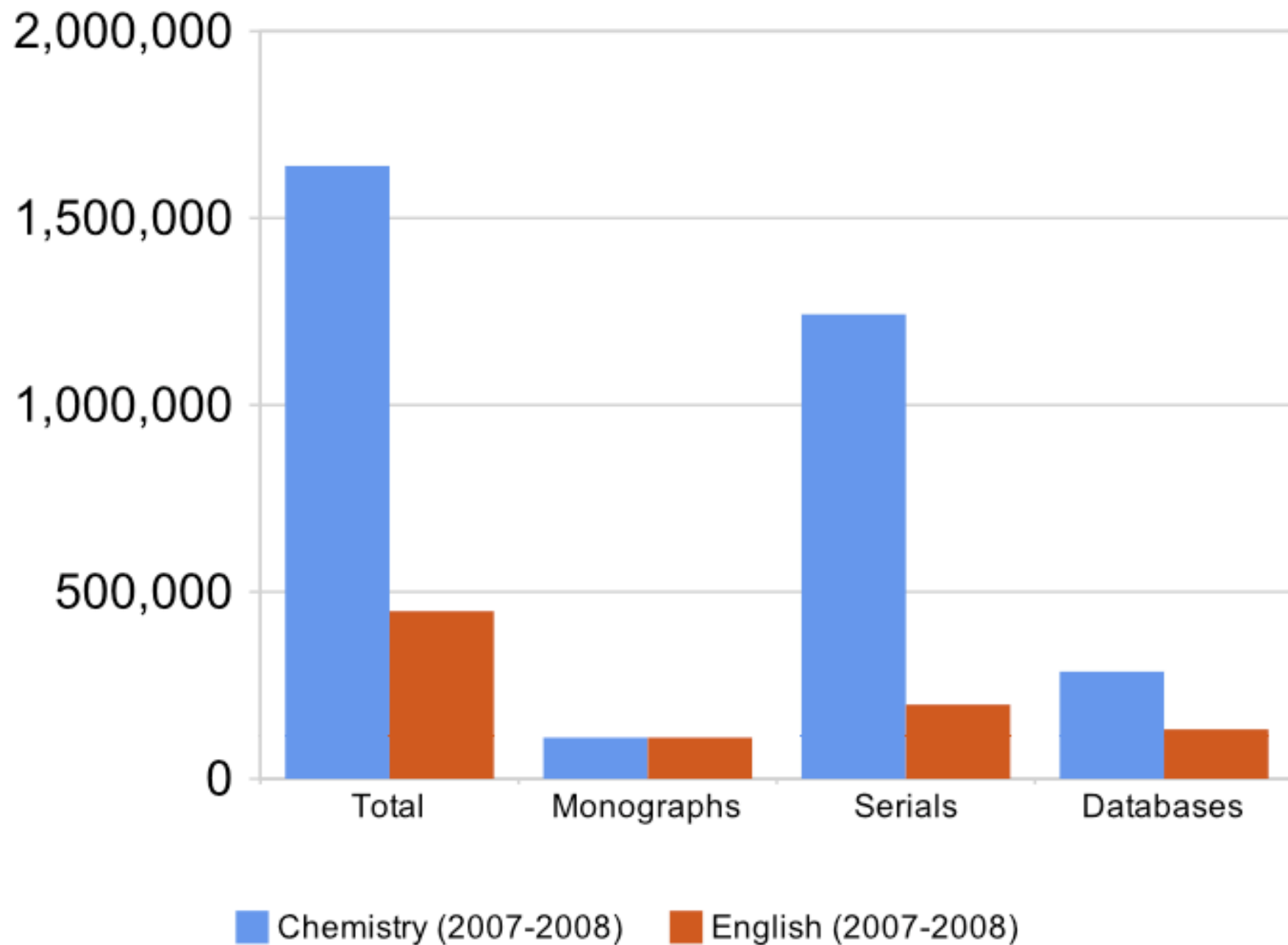
	Average Dept. (2006-2007)	Average Dept. (2007-2008)
Faculty Count	24	25
Enrollment	406	422
PhD's Awarded	5	5
Grant Income	\$1,779,545	\$1,882,768
Total Expenditure	\$565,442	\$601,786
Monograph Expenditure	\$66,953	\$73,845
Serial Expenditure	\$352,910	\$354,055
Database Expenditure	\$145,579	\$173,887

Expenditure

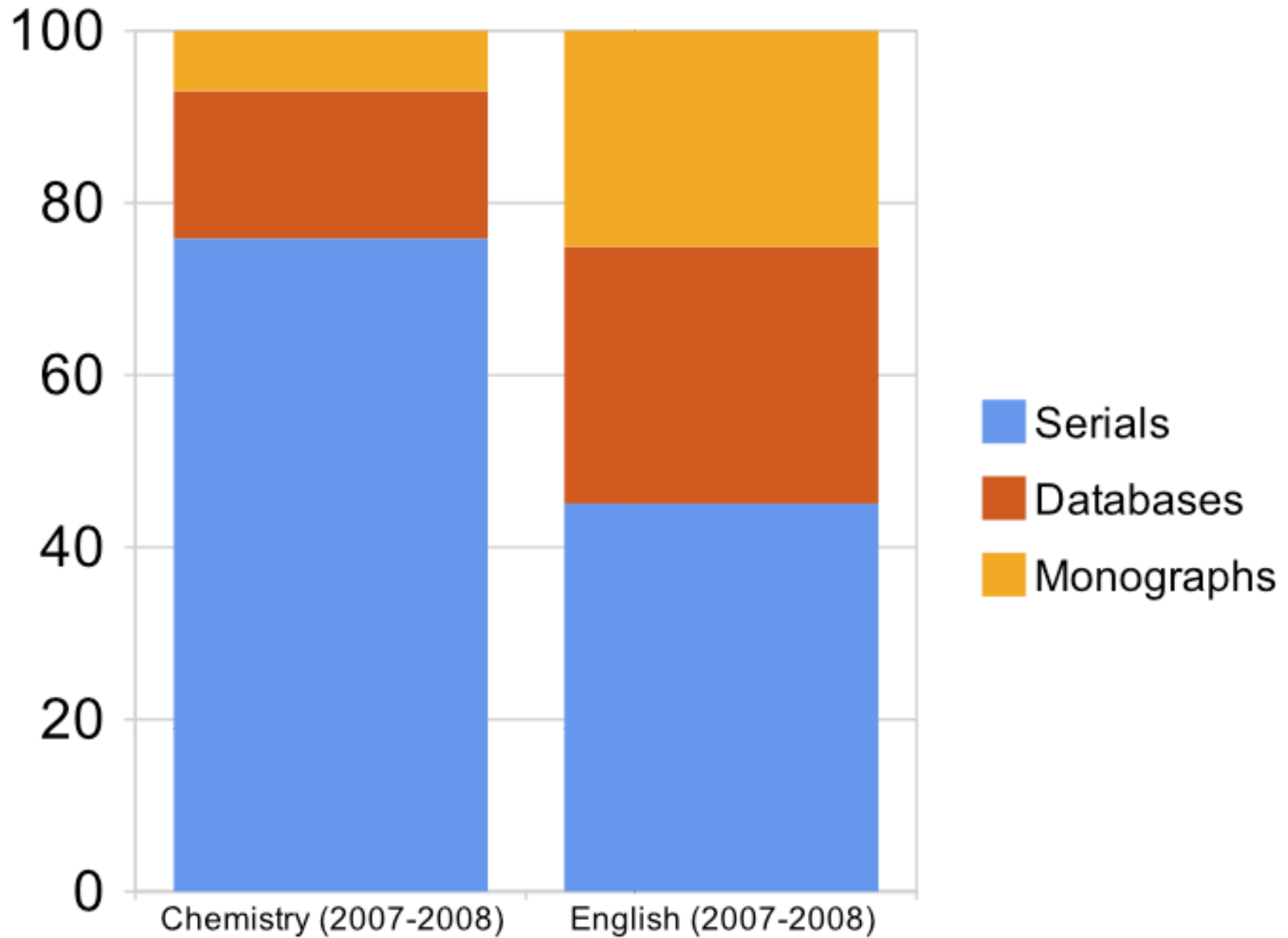


Chemistry & English

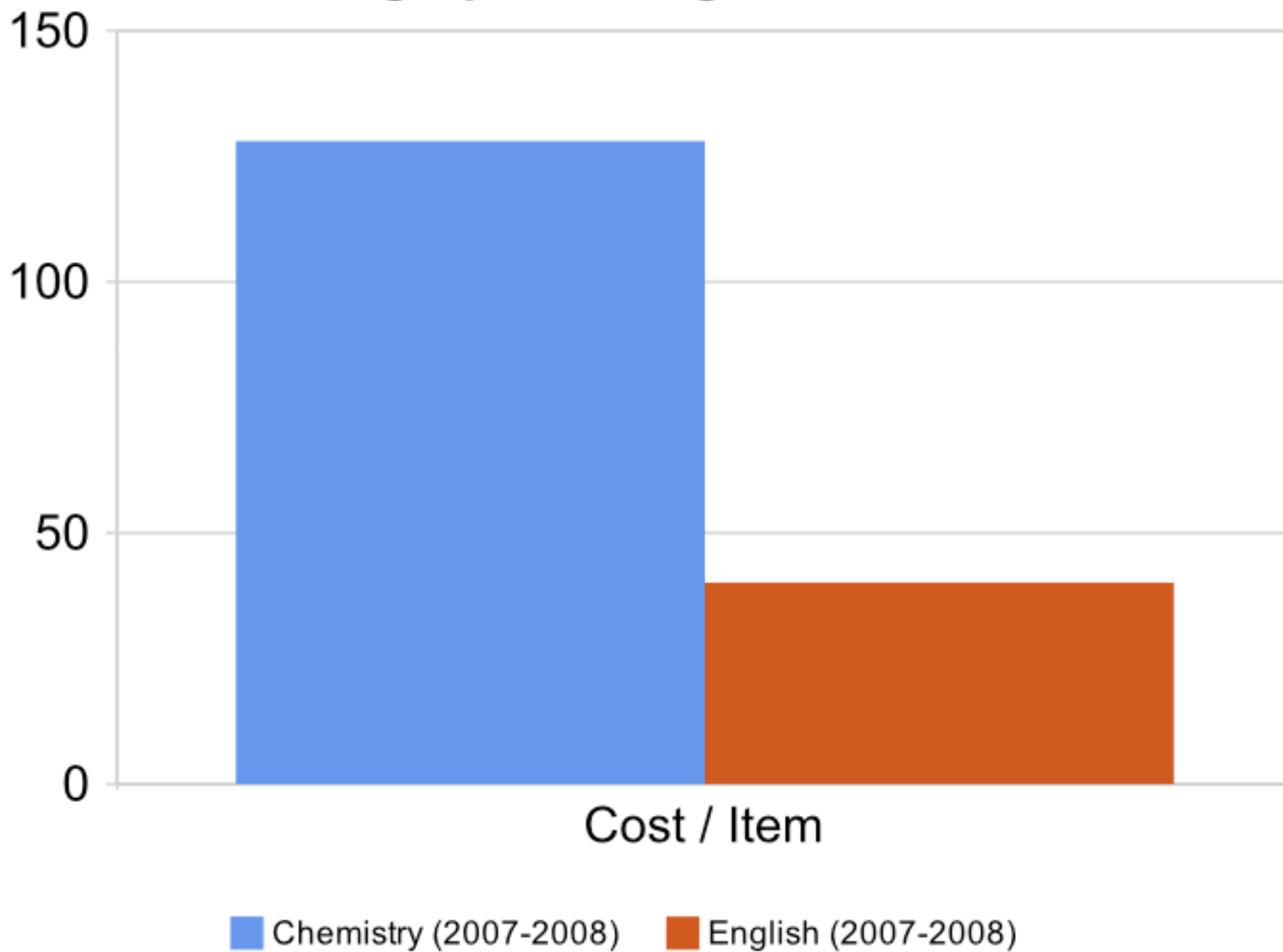
Expenditure



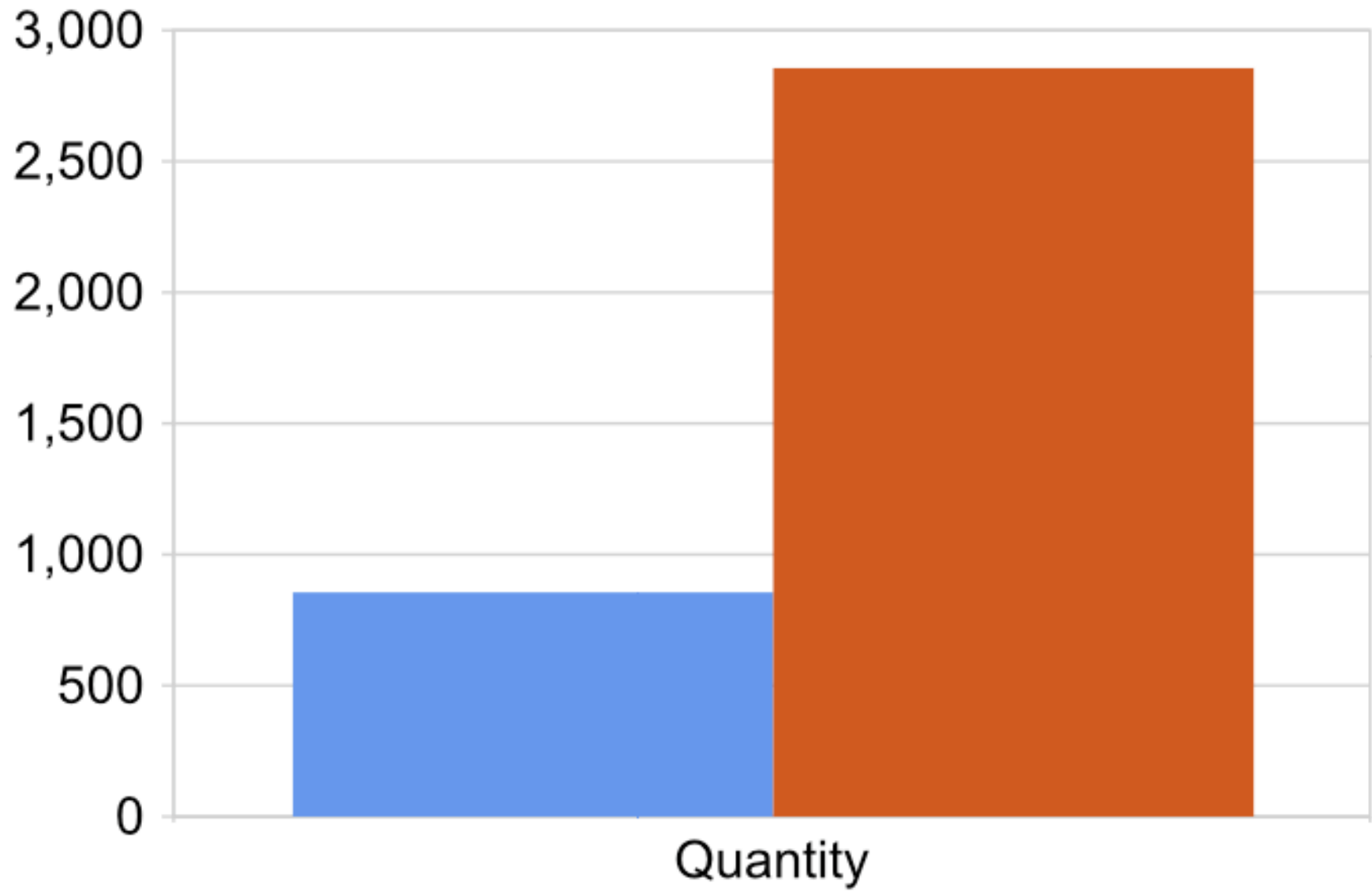
Spending Ratios by Material



Monograph Average Cost / Item



Monograph Quantity Purchased



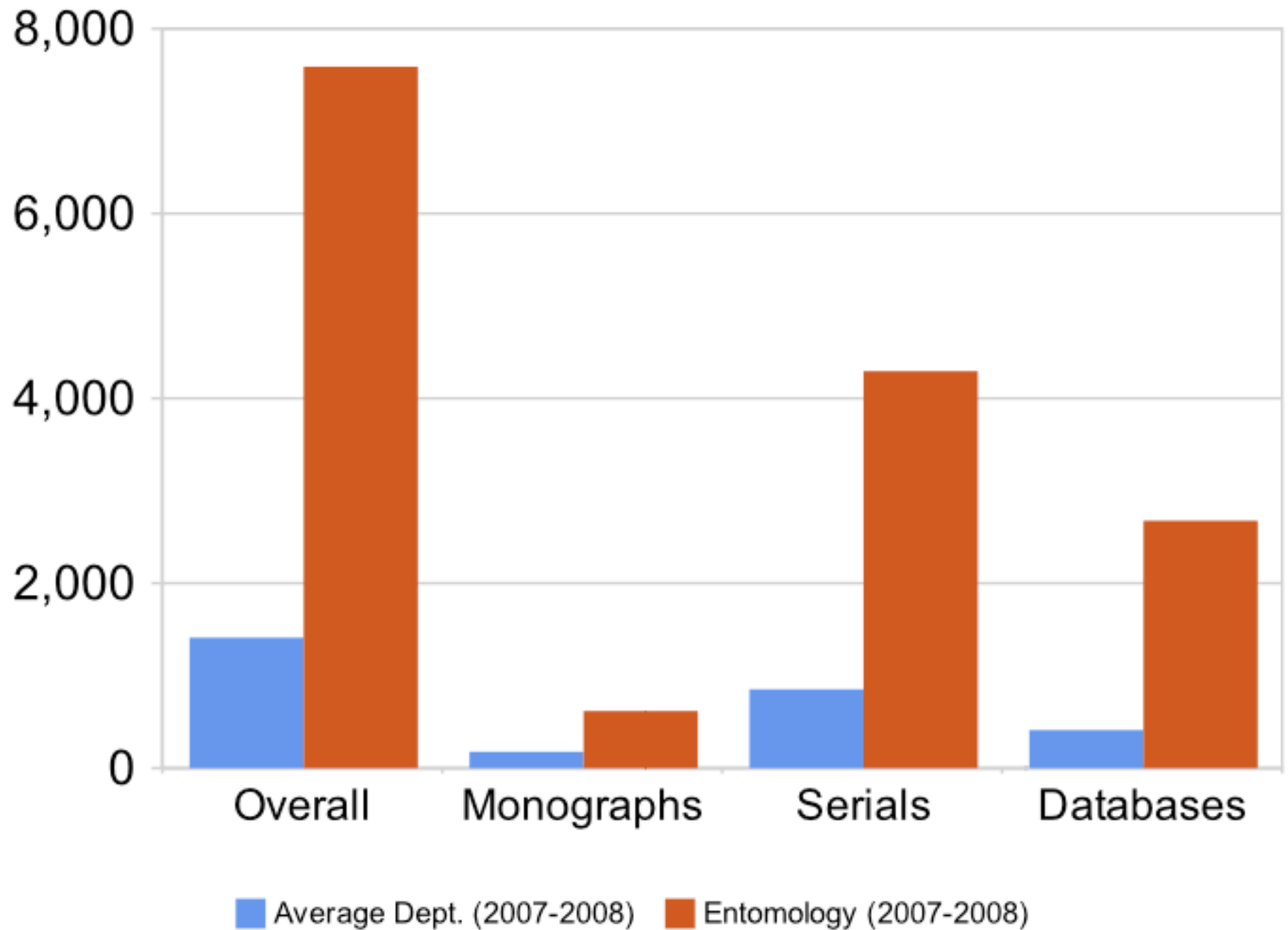
■ Chemistry (2007-2008) ■ English (2007-2008)

Entomology

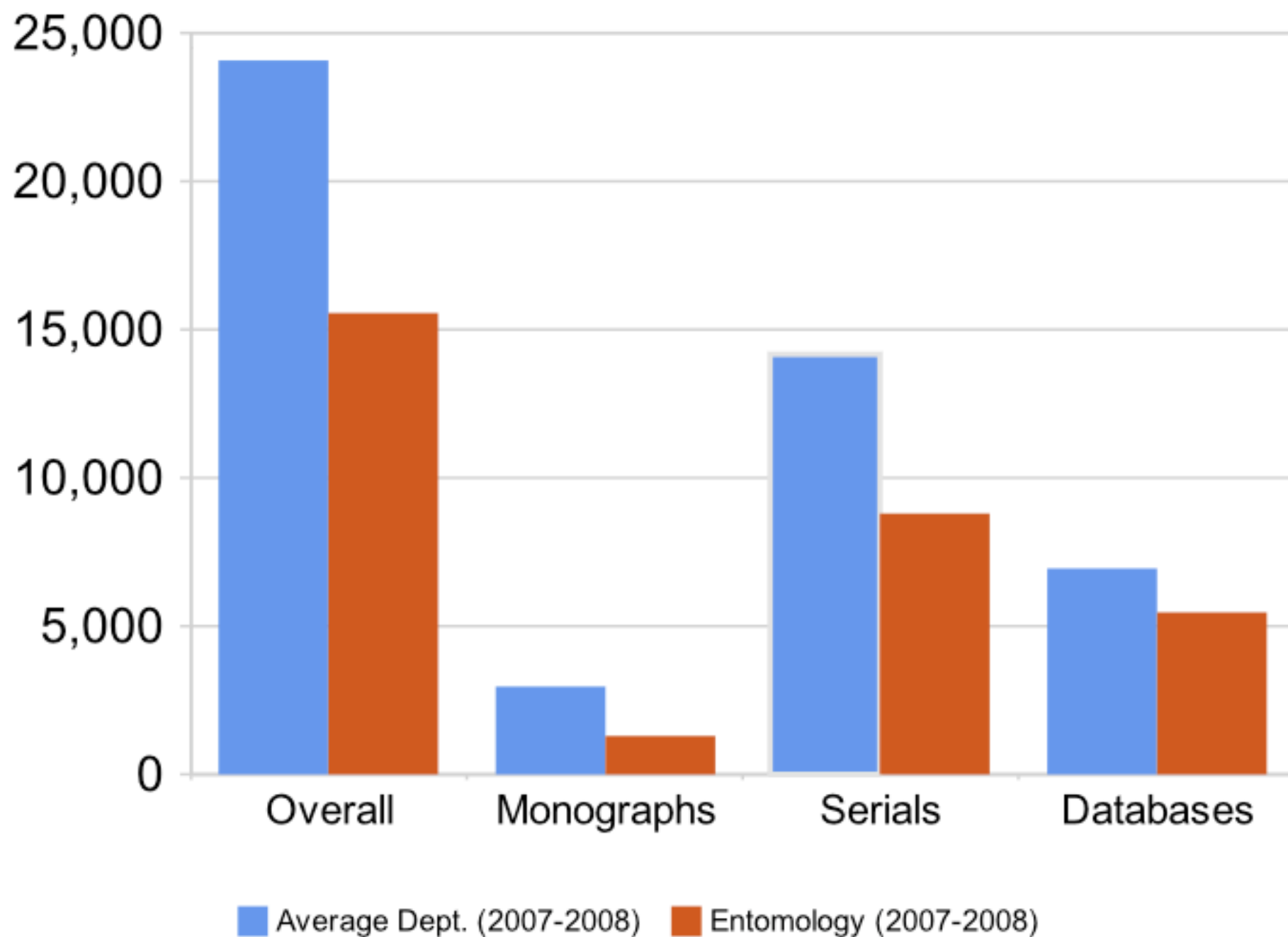


	Average Dept. (2007-2008)	Entomology (2007-2008)
Faculty Count	25	23
Enrollment	422	47
PhD's Awarded	5	4
Grant Income	\$1,882,768	\$2,680,159
Total Expenditure	\$601,786	\$357,134
Monograph Expenditure	\$73,845	\$29,008
Serial Expenditure	\$354,055	\$202,128
Database Expenditure	\$173,887	\$125,999

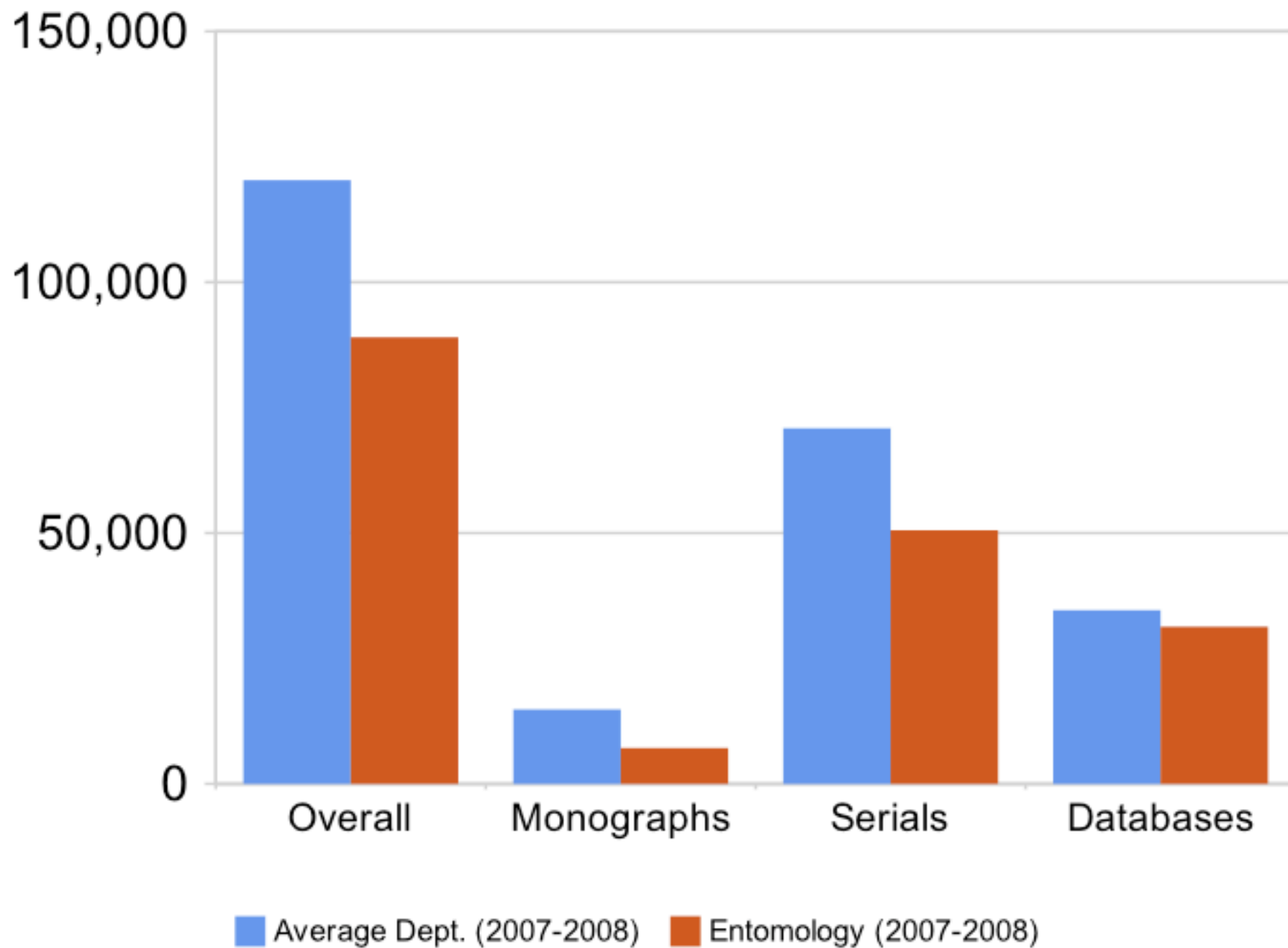
Expenditure / Student Headcount



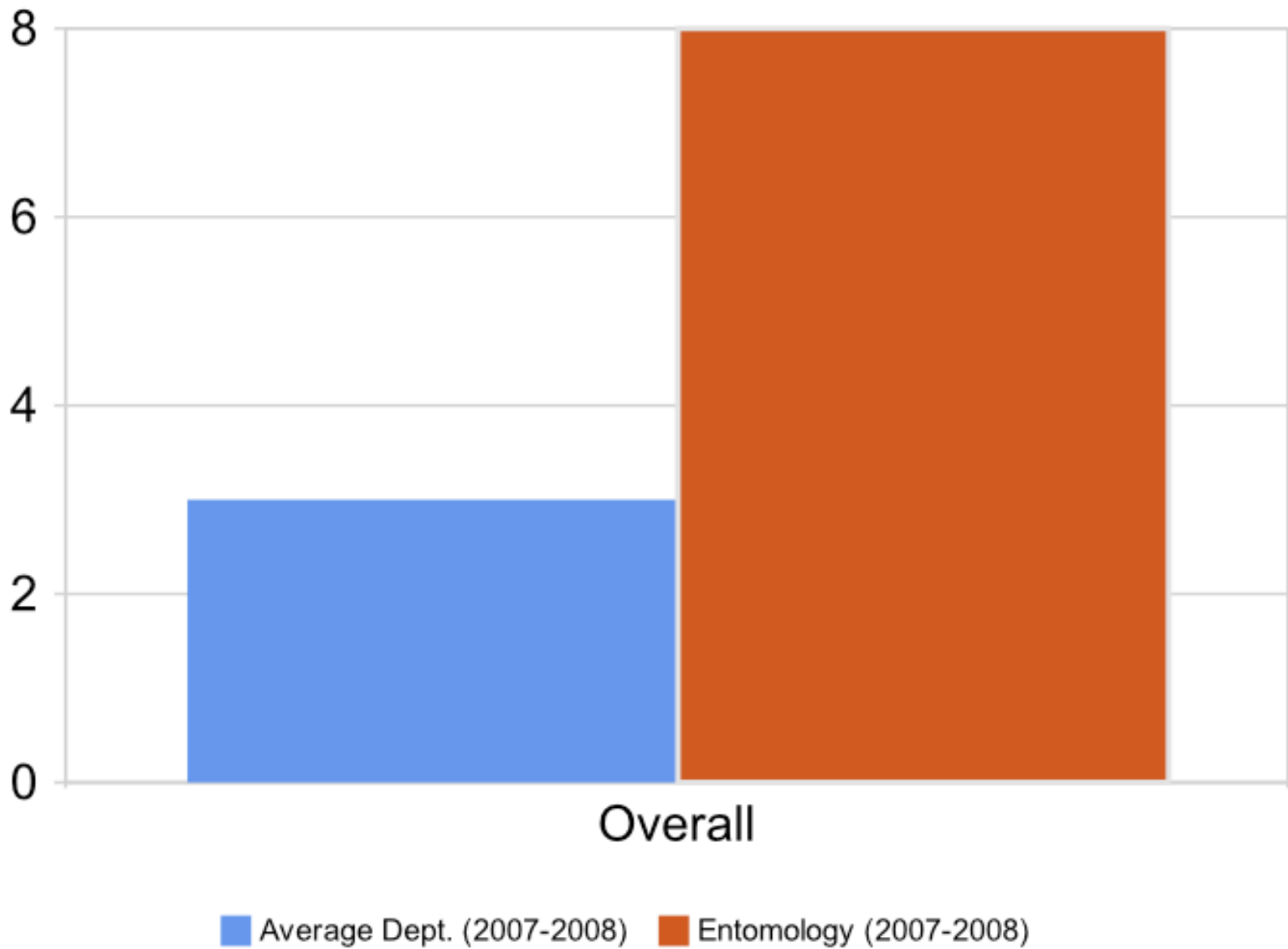
Expenditure / Faculty Headcount



Expenditure / PhDs Awarded

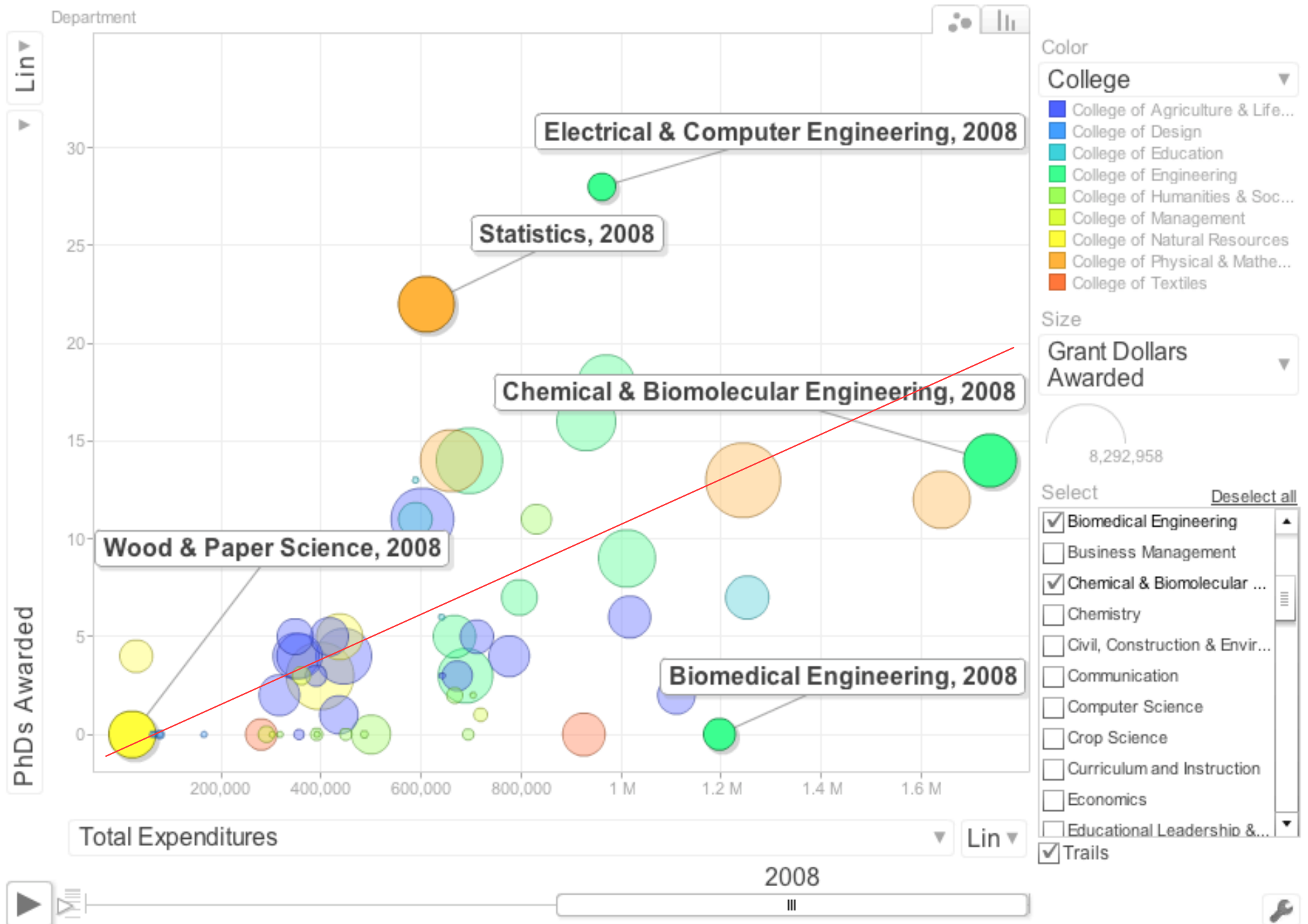


Grant Income / Expenditure

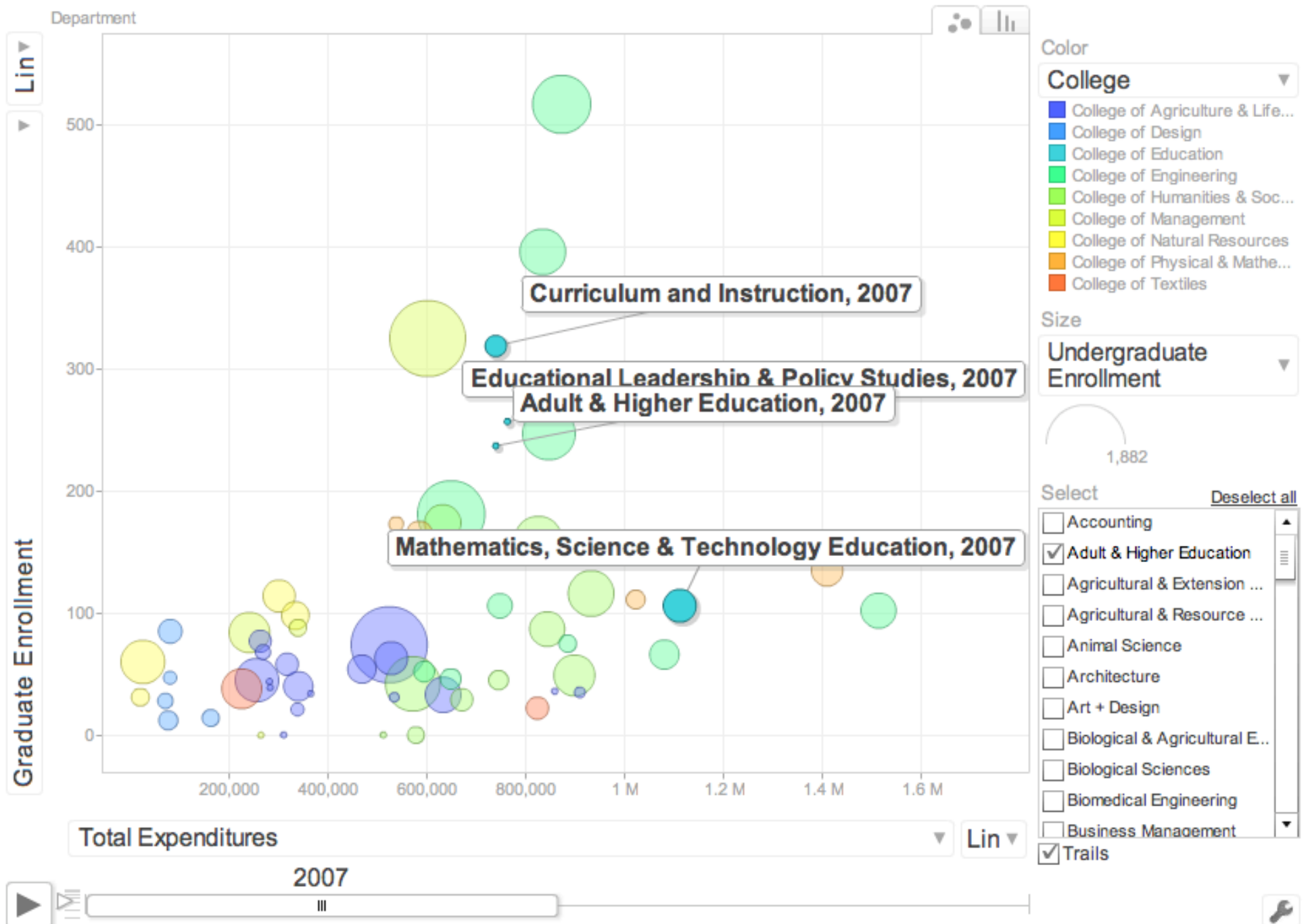


Big Picture View

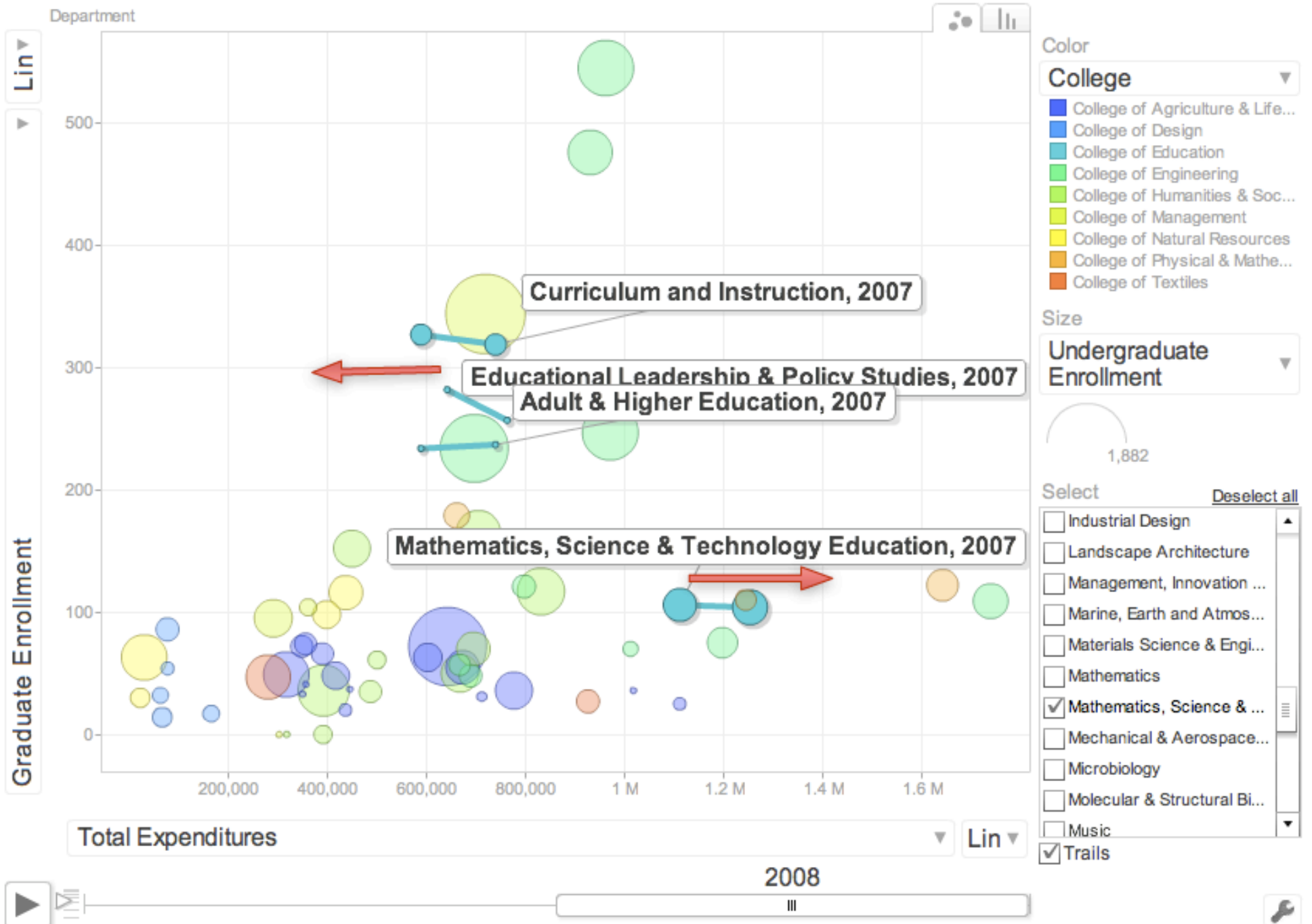
Department Motion Chart



Department Motion Chart



Department Motion Chart



Highlight Demo

http://webdev.lib.ncsu.edu/departmentsprofiles/departments.html

Google

dept name	total exp	grant dollars	grad enroll	phd awarded	undergr enroll
Chemical & Biomolecular Engineering	\$1,737,986.56	Physics \$7,913,135.00	Electrical & Computer Engineering 545	Electrical & Computer Engineering 28	Business Management 1882
Chemistry	\$1,640,984.66	Marine, Earth and Atmospheric Sciences \$5,919,939.00	Computer Science 476	Statistics 22	Biological Sciences 1823
Mathematics, Science & Technology Education	\$1,252,500.57	Mechanical & Aerospace Engineering \$5,692,399.00	Business Management 344	Civil, Construction & Environmental Engineering 18	Mechanical & Aerospace Engineering 1377
Physics	\$1,244,153.67	Crop Science \$5,196,074.00	Curriculum and Instruction 327	Computer Science 18	Civil, Construction & Environmental Engineering 931
Biomedical Engineering	\$1,196,881.42	Mathematics \$5,043,085.00	Educational Leadership & Policy Studies 282	Chemical & Biomolecular Engineering 14	Electrical & Computer Engineering 921
Soil Science	\$1,110,964.75	Computer Science \$4,495,080.00	Civil, Construction & Environmental Engineering 247	Mathematics 14	Communication 781
Genetics	\$1,017,435.43	Chemistry \$4,259,454.00	Adult & Higher Education 234	Mechanical & Aerospace Engineering 14	Psychology 664
Materials Science & Engineering	\$1,011,691.77	Materials Science & Engineering \$4,244,942.00	Mechanical & Aerospace Engineering 234	Adult & Higher Education 13	Animal Science 611
Civil, Construction & Environmental Engineering	\$970,604.00	Statistics \$4,106,872.00	Mathematics 179	Physics 13	Parks, Recreation & Tourism Management 609
Electrical & Computer Engineering	\$961,775.84	Plant Pathology \$4,049,076.00	Public & International Affairs 165	Chemistry 12	Public & International Affairs 589
Computer Science	\$900,566.84	Civil, Construction & Environmental Engineering \$4,026,122.00	Statistics 154	Crop Science 11	Computer Science 586
Textile Engineering, Chemistry & Science	\$925,846.53	Biological & Agricultural Engineering \$3,871,361.00	English 152	Curriculum and Instruction 11	Textile & Apparel Technology & Management 585
Psychology	\$930,986.35	Chemical & Biomolecular Engineering \$3,664,105.00	Chemistry 122	Psychology 11	Accounting 429
Industrial & Systems Engineering	\$797,071.09	Wood & Paper Science \$2,887,088.00	Industrial & Systems Engineering 121	Materials Science & Engineering 9	Sociology and Anthropology HASS 421
Molecular & Structural Biochemistry	\$776,498.02	Environmental & Molecular Toxicology \$2,774,027.00	Psychology 117	Industrial & Systems Engineering 7	Molecular & Structural Biochemistry 413
Business Management	\$719,338.80	Forestry & Environmental Resources \$2,740,953.00	Forestry & Environmental Resources 116	Mathematics, Science & Technology Education 7	English 399
Plant Biology	\$711,881.45	Entomology \$2,680,159.00	Physics 110	Educational Leadership & Policy Studies 6	Mathematics, Science & Technology Education 367
Public & International Affairs	\$704,611.15	Mathematics, Science & Technology Education \$2,450,497.00	Chemical & Biomolecular Engineering 109	Genetics 6	Chemical & Biomolecular Engineering 363
Mechanical & Aerospace Engineering	\$696,891.92	Textile Engineering, Chemistry & Science \$2,396,561.00	Economics 104	Food, Bioprocessing and Nutrition Sciences 5	Forestry & Environmental Resources 345
History	\$694,755.39	Nuclear Engineering \$2,372,044.00	Mathematics, Science & Technology Education 104	Forestry & Environmental Resources 5	Agricultural & Resource Economics 337
Biological & Agricultural Engineering	\$689,491.48	Genetics \$2,322,456.00	Biological Sciences 98	Horticultural Science 5	History 335
Agricultural & Resource Economics	\$672,910.01	Animal Science \$2,187,457.00	Accounting 95	Nuclear Engineering 5	Chemistry 298
Sociology and Anthropology HASS	\$667,831.52	Molecular & Structural Biochemistry \$2,183,554.00	Architecture 86	Plant Biology 5	Biomedical Engineering 275
Nuclear Engineering	\$666,947.92	Social Work \$1,999,204.00	Biomedical Engineering 75	Entomology 4	Crop Science 240
Mathematics	\$661,221.42	Poultry Science \$1,918,654.00	Agricultural & Extension Education 74	Environmental & Molecular Toxicology 4	Marine, Earth and Atmospheric Sciences 228
Biological Sciences	\$642,477.52	Horticultural Science \$1,905,842.00	Biological Sciences 72	Molecular & Structural Biochemistry 4	Horticultural Science 225
Educational Leadership & Policy Studies	\$641,662.23	Soil Science \$1,845,196.00	Food, Bioprocessing and Nutrition Sciences 72	Parks, Recreation & Tourism Management 4	Mathematics 194
Statistics	\$610,861.12	Food, Bioprocessing and Nutrition Sciences \$1,709,102.00	History 70	Plant Pathology 4	Industrial & Systems Engineering 160
Crop Science	\$603,002.07	Industrial & Systems Engineering \$1,677,342.00	Materials Science & Engineering 70	Agricultural & Resource Economics 3	Architecture 160
Adult & Higher Education	\$589,963.11	Curriculum and Instruction \$1,484,986.00	Microbiology 66	Biological & Agricultural Engineering 3	Textile Engineering, Chemistry & Science 159
Curriculum and Instruction	\$588,963.11	Plant Biology \$1,465,895.00	Crop Science 63	Biological Sciences 3	Biological & Agricultural Engineering 151
Social Work	\$500,363.31	Parks, Recreation & Tourism Management \$1,402,930.00	Parks, Recreation & Tourism Management 63	Economics 3	Foreign Languages & Literatures 147
Foreign Languages & Literatures	\$487,011.00	Biomedical Engineering \$1,321,108.00	Social Work 61	Marine, Earth and Atmospheric Sciences 3	Microbiology 146
English	\$449,919.58	Textile & Apparel Technology & Management \$1,276,257.00	Nuclear Engineering 57	Microbiology 3	Food, Bioprocessing and Nutrition Sciences 145
Plant Pathology	\$445,691.87	Agricultural & Resource Economics \$1,193,628.00	Agricultural & Resource Economics 55	Animal Science 2	Agricultural & Extension Education 144
Forestry & Environmental Resources	\$437,525.40	Psychology \$1,179,874.00	Landscape Architecture 54	Public & International Affairs 2	Nuclear Engineering 136
Poultry Science	\$436,422.59	Electrical & Computer Engineering \$996,685.00	Sociology and Anthropology HASS 50	Sociology and Anthropology HASS 2	Curriculum and Instruction 131
Horticultural Science	\$417,119.01	Microbiology \$572,763.00	Animal Science 49	Soil Science 2	Physics 127
Marine, Earth and Atmospheric Sciences	\$398,910.92	Economics \$425,135.00	Biological & Agricultural Engineering 48	Business Management 1	Graphic Design 113
Communication	\$392,295.60	Accounting \$345,980.00	Horticultural Science 48	Poultry Science 1	Wood & Paper Science 112
Philosophy & Religion	\$391,663.95	Sociology and Anthropology HASS \$329,497.00	Textile & Apparel Technology & Management 47	Accounting 0	Philosophy & Religion 99
Microbiology	\$390,475.69	Business Management \$243,188.00	Entomology 41	Agricultural & Extension Education 0	Social Work 94
Economics	\$361,325.15	Philosophy & Religion \$198,182.00	Plant Pathology 37	Architecture 0	Economics 86
Entomology	\$357,134.40	English \$192,375.00	Communication 36	Art + Design 0	Art + Design 83
Agricultural & Extension Education	\$356,283.45	History \$171,055.00	Genetics 36	Biomedical Engineering 0	Industrial Design 77
Environmental & Molecular Toxicology	\$350,277.30	Agricultural & Extension Education \$139,237.00	Molecular & Structural Biochemistry 36	Communication 0	Materials Science & Engineering 69
Food, Bioprocessing and Nutrition Sciences	\$348,700.09	Architecture \$105,000.00	Foreign Languages & Literatures 35	English 0	Statistics 61
Music	\$318,254.09	Foreign Languages & Literatures \$75,000.00	Environmental & Molecular Toxicology 33	Foreign Languages & Literatures 0	Landscape Architecture 51
Animal Science	\$317,254.62	Management, Innovation & Entrepreneurship \$53,000.00	Industrial Design 32	Graphic Design 0	Poultry Science 47
Management, Innovation & Entrepreneurship	\$302,930.49	Adult & Higher Education \$39,781.00	Plant Biology 31	History 0	Soil Science 46
Accounting	\$291,298.42	Art + Design \$0.00	Wood & Paper Science 30	Industrial Design 0	Plant Biology 29
Textile & Apparel Technology & Management	\$280,801.17	Biological Sciences \$0.00	Textile Engineering, Chemistry & Science 27	Landscape Architecture 0	Entomology 6
Art + Design	\$166,179.89	Communication \$0.00	Soil Science 25	Management, Innovation & Entrepreneurship 0	Adult & Higher Education 0
Architecture	\$77,830.12	Educational Leadership & Policy Studies \$0.00	Poultry Science 20	Music 0	Educational Leadership & Policy Studies 0
Landscape Architecture	\$77,830.12	Graphic Design \$0.00	Art + Design 17	Philosophy & Religion 0	Genetics 0
Graphic Design	\$67,096.89	Industrial Design \$0.00	Graphic Design 14	Social Work 0	Plant Pathology 0
Industrial Design	\$63,426.39	Landscape Architecture \$0.00	Management, Innovation & Entrepreneurship 0	Textile & Apparel Technology & Management 0	Environmental & Molecular Toxicology 0
Parks, Recreation & Tourism Management	\$30,899.33	Music \$0.00	Music 0	Textile Engineering, Chemistry & Science 0	Management, Innovation & Entrepreneurship 0
Wood & Paper Science	\$22,880.22	Public & International Affairs \$0.00	Philosophy & Religion 0	Wood & Paper Science 0	Music 0

dept name	total exp	grant dollars	grad enroll	phd awarded	undergr enroll
Chemical & Biomolecular Engineering	\$1,737,986.56	Physics	Electrical & Computer Engineering	Electrical & Computer Engineering	Business Management
Chemistry	\$1,640,984.66	Marine, Earth and Atmospheric Sciences	Computer Science	Statistics	Biological Sciences
Mathematics, Science & Technology Education	\$1,252,500.57	Mechanical & Aerospace Engineering	Business Management	Civil, Construction & Environmental Engineering	Mechanical & Aerospace Engineering
Physics	\$1,244,153.67	Crop Science	Curriculum and Instruction	Computer Science	Civil, Construction & Environmental Engineering
Biomedical Engineering	\$1,196,881.42	Mathematics	Educational Leadership & Policy Studies	Chemical & Biomolecular Engineering	Electrical & Computer Engineering
Soil Science	\$1,110,964.75	Computer Science	Civil, Construction & Environmental Engineering	Mathematics	Communication
Genetics	\$1,017,435.43	Chemistry	Adult & Higher Education	Mechanical & Aerospace Engineering	Psychology
Materials Science & Engineering	\$970,604.00	Materials Science & Engineering	Mechanical & Aerospace Engineering	Adult & Higher Education	Animal Science
Civil, Construction & Environmental Engineering	\$970,604.00	Statistics	Mathematics	Physics	Parks, Recreation & Tourism Management
Electrical & Computer Engineering	\$961,775.84	Plant Pathology	Public & International Affairs	Chemistry	Public & International Affairs
Computer Science	\$930,566.84	Civil, Construction & Environmental Engineering	Statistics	Crop Science	Computer Science
Psychology	\$830,986.35	Biological & Agricultural Engineering	English	Curriculum and Instruction	Textile & Apparel Technology & Management
Industrial & Systems Engineering	\$797,071.09	Chemical & Biomolecular Engineering	Chemistry	Psychology	Accounting
Molecular & Structural Biochemistry	\$779,498.02	Wood & Paper Science	Industrial & Systems Engineering	Materials Science & Engineering	Sociology and Anthropology HASS
Business Management	\$711,881.45	Environmental & Molecular Toxicology	Psychology	Industrial & Systems Engineering	Molecular & Structural Biochemistry
Plant Biology	\$711,881.45	Forestry & Environmental Resources	Forestry & Environmental Resources	Mathematics, Science & Technology Education	English
Public & International Affairs	\$711,881.45	Entomology	Physics	Educational Leadership & Policy Studies	Mathematics, Science & Technology Education
Mechanical & Aerospace Engineering	\$711,881.45	Mathematics, Science & Technology Education	Chemical & Biomolecular Engineering	Genetics	Chemical & Biomolecular Engineering
History		Science & Technology Education and Atmospheric Sciences	104	Food, Bioprocessing and Nutrition Sciences	Forestry & Environmental Resources
Biological		98	104	Forestry & Environmental Resources	Agricultural & Resource Economics
Agricultural		95	98	Horticultural Science	History
Sociology		86	95	Nuclear Engineering	Chemistry
Nuclear Engineering		75	86	Plant Biology	Biomedical Engineering
Mathematics		74	75	Entomology	Crop Science
Biological		72	74	Environmental & Molecular Toxicology	Marine, Earth and Atmospheric Sciences
Education		72	72	Molecular & Structural Biochemistry	Horticultural Science
Statistics		70	72	Parks, Recreation & Tourism Management	Mathematics
Crop Science		70	70	Plant Pathology	Industrial & Systems Engineering
Adult & Higher Education		66	70	Agricultural & Resource Economics	Architecture
Curriculum and Instruction		63	66	Biological & Agricultural Engineering	Textile Engineering, Chemistry & Science
Social Work		63	63	Biological Sciences	Biological & Agricultural Engineering
Foreign Languages & Literatures		61	63	Economics	Foreign Languages & Literatures
English		57	61	Marine, Earth and Atmospheric Sciences	Microbiology
Plant Pathology		55	57	Microbiology	Food, Bioprocessing and Nutrition Sciences
Forestry & Environmental Resources		54	55	Animal Science	Agricultural & Extension Education
Poultry Science		50	54	Public & International Affairs	Nuclear Engineering
Horticultural		49	50	Sociology and Anthropology HASS	Curriculum and Instruction
Marine, Earth and Atmospheric Sciences		48	49	Soil Science	Physics
Community		48	48	Business Management	Graphic Design
Philosophy		47	48	Poultry Science	Wood & Paper Science
Microbiology		41	47	Accounting	Philosophy & Religion
Economic		36	41	Agricultural & Extension Education	Social Work
Entomology		36	36	Architecture	Economics
Agricultural		36	36	Art + Design	Art + Design
Environmental & Molecular Toxicology	\$350,277.30	Agricultural & Extension Education	36	Biomedical Engineering	Industrial Design
Food, Bioprocessing and Nutrition Sciences	\$348,700.09	Architecture	35	Communication	Materials Science & Engineering
Music	\$318,254.09	Foreign Languages & Literatures	35	English	Statistics
Animal Science	\$317,254.62	Management, Innovation & Entrepreneurship	33	Foreign Languages & Literatures	Landscape Architecture
Management, Innovation & Entrepreneurship	\$302,930.49	Adult & Higher Education	32	Graphic Design	Poultry Science
Accounting	\$291,298.42	Art + Design	31	History	Soil Science
Textile & Apparel Technology & Management	\$280,801.17	Biological Sciences	30	Industrial Design	Plant Biology
Art + Design	\$166,179.89	Communication	27	Landscape Architecture	Entomology
Architecture	\$77,830.12	Educational Leadership & Policy Studies	25	Management, Innovation & Entrepreneurship	Adult & Higher Education
Landscape Architecture	\$77,830.12	Graphic Design	20	Music	Educational Leadership & Policy Studies
Graphic Design	\$67,096.83	Industrial Design	17	Philosophy & Religion	Genetics
Industrial Design	\$63,426.39	Landscape Architecture	14	Social Work	Plant Pathology
Parks, Recreation & Tourism Management	\$30,899.33	Music	0	Textile & Apparel Technology & Management	Environmental & Molecular Toxicology
Wood & Paper Science	\$22,880.22	Public & International Affairs	0	Textile Engineering, Chemistry & Science	Management, Innovation & Entrepreneurship
			0	Wood & Paper Science	Music

Civil, Construction & Environmental Engineering	\$970,604.00
Electrical & Computer Engineering	\$961,775.84
Computer Science	\$930,566.84

Civil, Construction & Environmental Engineering	\$970,604.00
Electrical & Computer Engineering	\$961,775.84
Computer Science	\$930,566.84

dept name	total exp		grant dollars		grad enroll		phd awarded		undergr enroll
Chemical & Biomolecular Engineering	\$1,737,986.56	Physics	\$7,313,195.00	Electrical & Computer Engineering	545	Electrical & Computer Engineering	28	Business Management	1882
Chemistry	\$1,640,984.66	Marine, Earth and Atmospheric Sciences	\$5,919,939.00	Computer Science	476	Statistics	22	Biological Sciences	1823
Mathematics, Science & Technology Education	\$1,252,500.57	Mechanical & Aerospace Engineering	\$5,692,399.00	Business Management	344	Civil, Construction & Environmental Engineering	18	Mechanical & Aerospace Engineering	1377
Physics	\$1,244,153.67	Crop Science	\$5,136,074.00	Curriculum and Instruction	327	Computer Science	16	Civil, Construction & Environmental Engineering	931
Biomedical Engineering	\$1,196,881.42	Mathematics	\$5,043,085.00	Educational Leadership & Policy Studies	282	Chemical & Biomolecular Engineering	14	Electrical & Computer Engineering	921
Soil Science	\$1,110,864.75	Computer Science	\$4,495,090.00	Civil, Construction & Environmental Engineering	247	Mathematics	14	Communication	781
Genetics	\$1,017,435.43	Chemistry	\$4,259,454.00	Adult & Higher Education	234	Mechanical & Aerospace Engineering	14	Psychology	664
Materials Science & Engineering	\$1,011,691.77	Materials Science & Engineering	\$4,244,942.00	Mechanical & Aerospace Engineering	234	Adult & Higher Education	13	Animal Science	611
Civil, Construction & Environmental Engineering	\$970,604.00	Statistics	\$4,106,872.00	Mathematics	179	Physics	13	Parks, Recreation & Tourism Management	609
Electrical & Computer Engineering	\$961,775.84	Plant Pathology	\$4,049,076.00	Public & International Affairs	165	Chemistry	12	Public & International Affairs	589
Computer Science	\$900,566.84	Civil, Construction & Environmental Engineering	\$4,026,122.00	Statistics	154	Crop Science	11	Computer Science	586
Textile Engineering, Chemistry & Science	\$925,846.53	Biological & Agricultural Engineering	\$3,871,361.00	English	152	Curriculum and Instruction	11	Textile & Apparel Technology & Management	585
Psychology	\$890,986.35	Chemical & Biomolecular Engineering	\$3,664,105.00	Chemistry	122	Psychology	11	Accounting	429
Industrial & Systems Engineering	\$797,071.09	Wood & Paper Science	\$2,887,068.00	Industrial & Systems Engineering	121	Materials Science & Engineering	9	Sociology and Anthropology HASS	421
Molecular & Structural Biochemistry	\$776,498.02	Environmental & Molecular Toxicology	\$2,774,027.00	Psychology	117	Industrial & Systems Engineering	7	Molecular & Structural Biochemistry	413
Business Management	\$719,338.80	Forestry & Environmental Resources	\$2,740,953.00	Forestry & Environmental Resources	116	Mathematics, Science & Technology Education	7	English	399
Plant Biology	\$711,881.45	Entomology	\$2,690,159.00	Physics	110	Educational Leadership & Policy Studies	6	Mathematics, Science & Technology Education	367
Public & International Affairs	\$704,611.15	Mathematics, Science & Technology Education	\$2,450,497.00	Chemical & Biomolecular Engineering	109	Genetics	6	Chemical & Biomolecular Engineering	363
Mechanical & Aerospace Engineering	\$696,881.92	Textile Engineering, Chemistry & Science	\$2,396,561.00	Economics	104	Food, Bioprocessing and Nutrition Sciences	5	Forestry & Environmental Resources	345
History	\$694,755.39	Nuclear Engineering	\$2,372,044.00	Mathematics, Science & Technology Education	104	Forestry & Environmental Resources	5	Agricultural & Resource Economics	337
Biological & Agricultural Engineering	\$689,491.48	Genetics	\$2,322,456.00	Marine, Earth and Atmospheric Sciences	98	Horticultural Science	5	History	335
Agricultural & Resource Economics	\$672,910.01	Animal Science	\$2,187,457.00	Accounting	95	Nuclear Engineering	5	Chemistry	298
Sociology and Anthropology HASS	\$667,831.52	Molecular & Structural Biochemistry	\$2,183,554.00	Architecture	86	Plant Biology	5	Biomedical Engineering	275
Nuclear Engineering	\$666,947.92	Social Work	\$1,999,204.00	Biomedical Engineering	75	Entomology	4	Crop Science	240
Mathematics	\$661,221.42	Poultry Science	\$1,918,654.00	Agricultural & Extension Education	74	Environmental & Molecular Toxicology	4	Marine, Earth and Atmospheric Sciences	228
Biological Sciences	\$642,477.52	Horticultural Science	\$1,905,842.00	Biological Sciences	72	Molecular & Structural Biochemistry	4	Horticultural Science	225
Educational Leadership & Policy Studies	\$641,662.23	Soil Science	\$1,845,196.00	Food, Bioprocessing and Nutrition Sciences	72	Parks, Recreation & Tourism Management	4	Mathematics	194
Statistics	\$610,861.12	Food, Bioprocessing and Nutrition Sciences	\$1,709,102.00	History	70	Plant Pathology	4	Industrial & Systems Engineering	160
Crop Science	\$603,002.07	Industrial & Systems Engineering	\$1,677,342.00	Materials Science & Engineering	70	Agricultural & Resource Economics	3	Architecture	160
Adult & Higher Education	\$588,963.11	Curriculum and Instruction	\$1,484,996.00	Microbiology	66	Biological & Agricultural Engineering	3	Textile Engineering, Chemistry & Science	159
Curriculum and Instruction	\$588,963.11	Plant Biology	\$1,465,895.00	Crop Science	63	Biological Sciences	3	Biological & Agricultural Engineering	151
Social Work	\$500,363.31	Parks, Recreation & Tourism Management	\$1,402,900.00	Parks, Recreation & Tourism Management	63	Economics	3	Foreign Languages & Literatures	147
Foreign Languages & Literatures	\$487,011.00	Biomedical Engineering	\$1,321,108.00	Social Work	61	Marine, Earth and Atmospheric Sciences	3	Microbiology	146
English	\$449,919.58	Textile & Apparel Technology & Management	\$1,276,257.00	Nuclear Engineering	57	Microbiology	3	Food, Bioprocessing and Nutrition Sciences	145
Plant Pathology	\$445,601.87	Agricultural & Resource Economics	\$1,193,628.00	Agricultural & Resource Economics	55	Animal Science	2	Agricultural & Extension Education	144
Forestry & Environmental Resources	\$437,525.40	Psychology	\$1,179,874.00	Landscape Architecture	54	Public & International Affairs	2	Nuclear Engineering	136
Poultry Science	\$436,422.59	Electrical & Computer Engineering	\$996,665.00	Sociology and Anthropology HASS	50	Sociology and Anthropology HASS	2	Curriculum and Instruction	131
Horticultural Science	\$417,119.01	Microbiology	\$572,763.00	Animal Science	49	Soil Science	2	Physics	127
Marine, Earth and Atmospheric Sciences	\$398,910.92	Economics	\$425,135.00	Biological & Agricultural Engineering	48	Business Management	1	Graphic Design	113
Communication	\$392,295.60	Accounting	\$345,980.00	Horticultural Science	48	Poultry Science	1	Wood & Paper Science	112
Philosophy & Religion	\$391,663.95	Sociology and Anthropology HASS	\$329,497.00	Textile & Apparel Technology & Management	47	Accounting	0	Philosophy & Religion	99
Microbiology	\$390,475.69	Business Management	\$243,188.00	Entomology	41	Agricultural & Extension Education	0	Social Work	94
Economics	\$361,325.15	Philosophy & Religion	\$198,182.00	Plant Pathology	37	Architecture	0	Economics	86
Entomology	\$357,134.40	English	\$192,375.00	Communication	36	Art + Design	0	Art + Design	83
Agricultural & Extension Education	\$356,283.45	History	\$171,055.00	Genetics	36	Biomedical Engineering	0	Industrial Design	77
Environmental & Molecular Toxicology	\$350,277.30	Agricultural & Extension Education	\$139,237.00	Molecular & Structural Biochemistry	36	Communication	0	Materials Science & Engineering	69
Food, Bioprocessing and Nutrition Sciences	\$348,700.09	Architecture	\$105,000.00	Foreign Languages & Literatures	35	English	0	Statistics	61
Music	\$318,254.09	Foreign Languages & Literatures	\$75,000.00	Environmental & Molecular Toxicology	33	Foreign Languages & Literatures	0	Landscape Architecture	51
Animal Science	\$317,254.62	Management, Innovation & Entrepreneurship	\$53,000.00	Industrial Design	32	Graphic Design	0	Poultry Science	47
Management, Innovation & Entrepreneurship	\$302,930.49	Adult & Higher Education	\$39,781.00	Plant Biology	31	History	0	Soil Science	46
Accounting	\$291,298.42	Art + Design	\$0.00	Wood & Paper Science	30	Industrial Design	0	Plant Biology	29
Textile & Apparel Technology & Management	\$280,801.17	Biological Sciences	\$0.00	Textile Engineering, Chemistry & Science	27	Landscape Architecture	0	Entomology	6
Art + Design	\$166,179.89	Communication	\$0.00	Soil Science	25	Management, Innovation & Entrepreneurship	0	Adult & Higher Education	0
Architecture	\$77,830.12	Educational Leadership & Policy Studies	\$0.00	Poultry Science	20	Music	0	Educational Leadership & Policy Studies	0
Landscape Architecture	\$77,830.12	Graphic Design	\$0.00	Art + Design	17	Philosophy & Religion	0	Genetics	0
Graphic Design	\$67,096.83	Industrial Design	\$0.00	Graphic Design	14	Social Work	0	Plant Pathology	0
Industrial Design	\$63,426.39	Landscape Architecture	\$0.00	Management, Innovation & Entrepreneurship	0	Textile & Apparel Technology & Management	0	Environmental & Molecular Toxicology	0
Parks, Recreation & Tourism Management	\$30,899.33	Music	\$0.00	Music	0	Textile Engineering, Chemistry & Science	0	Management, Innovation & Entrepreneurship	0
Wood & Paper Science	\$22,880.22	Public & International Affairs	\$0.00	Philosophy & Religion	0	Wood & Paper Science	0	Music	0

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Mathematics, Science & Technology Education	\$1,252,500.57	Mechanical & Aerospace Engineering	\$5,692,399.00	Business Management	344	Civil, Construction & Environmental Engineering	18	Mechanical & Aerospace Engineering	1377
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Civil, Construction & Environmental Engineering	\$970,604.00	Materials Science & Engineering	\$4,244,942.00	Adult & Higher Education	234	Adult & Higher Education	13	Animal Science	611
Electrical & Computer Engineering	\$961,775.84	Statistics	\$4,106,872.00	Mathematics	179	Physics	13	Parks, Recreation & Tourism Management	609
Computer Science	\$930,566.84	Plant Pathology	\$4,049,076.00	Public & International Affairs	165	Chemistry	12	Public & International Affairs	589
Textile Engineering, Chemistry & Science	\$925,846.59	Civil, Construction & Environmental Engineering	\$4,026,122.00	Statistics	154	Crop Science	11	Computer Science	586
Psychology	\$850,399.35	Biological & Agricultural Engineering	\$3,871,361.00	English	152	Curriculum and Instruction	11	Textile & Apparel Technology & Management	585
Industrial & Systems Engineering	\$797,071.09	Chemical & Biomolecular Engineering	\$3,664,105.00	Chemistry	122	Psychology	11	Accounting	429
Molecular & Structural Biochemistry	\$776,498.02	Wood & Paper Science	\$2,887,068.00	Industrial & Systems Engineering	121	Materials Science & Engineering	9	Sociology and Anthropology HASS	421
Business Management	\$719,338.80	Environmental & Molecular Toxicology	\$2,774,027.00	Psychology	117	Industrial & Systems Engineering	7	Molecular & Structural Biochemistry	413
Plant Biology	\$711,881.45	Forestry & Environmental Resources	\$2,740,953.00	Forestry & Environmental Resources	116	Mathematics, Science & Technology Education	7	English	399
Public & International Affairs	\$704,611.15	Entomology	\$2,680,159.00	Physics	110	Educational Leadership & Policy Studies	6	Mathematics, Science & Technology Education	367
Mechanical & Aerospace Engineering	\$68,881.92	Mathematics, Science & Technology Education	\$2,450,497.00	Chemical & Biomolecular Engineering	109	Genetics	6	Chemical & Biomolecular Engineering	363
History	\$4,755.39	Textile Engineering, Chemistry & Science	\$2,396,561.00	Economics	104	Food, Bioprocessing and Nutrition Sciences	5	Forestry & Environmental Resources	345
Biological & Agricultural Engineering	\$2,322,456.00	Nuclear Engineering	\$2,372,044.00	Mathematics, Science & Technology Education	104	Forestry & Environmental Resources	5	Agricultural & Resource Economics	337
Agricultural & Resource Economics	\$2,187,457.00	Genetics	\$2,322,456.00	Marine, Earth and Atmospheric Sciences	98	Horticultural Science	5	History	335
Sociology and Anthropology HASS	\$2,183,554.00	Animal Science	\$2,187,457.00	Accounting	95	Nuclear Engineering	5	Chemistry	298
Nuclear Engineering	\$2,040.00	Molecular & Structural Biochemistry	\$2,183,554.00	Architecture	86	Plant Biology	5	Biomedical Engineering	275
Mathematics	\$2,040.00	Biomedical Engineering	\$2,040.00	Biomedical Engineering	75	Entomology	4	Crop Science	240
Biological Sciences	\$1,960.00	Agricultural & Extension Education	\$1,960.00	Environmental & Molecular Toxicology	74	Environmental & Molecular Toxicology	4	Marine, Earth and Atmospheric Sciences	228
Education	\$1,960.00	Biological Sciences	\$1,960.00	Molecular & Structural Biochemistry	72	Molecular & Structural Biochemistry	4	Horticultural Science	225
Statistics	\$1,960.00	Food, Bioprocessing and Nutrition Sciences	\$1,960.00	Parks, Recreation & Tourism Management	72	Parks, Recreation & Tourism Management	4	Mathematics	194
Crop Science	\$1,960.00	History	\$1,960.00	History	70	Plant Pathology	4	Industrial & Systems Engineering	160
Adult & Higher Education	\$1,960.00	Materials Science & Engineering	\$1,960.00	Materials Science & Engineering	70	Agricultural & Resource Economics	3	Architecture	160
Curriculum and Instruction	\$1,960.00	Microbiology	\$1,960.00	Microbiology	66	Biological & Agricultural Engineering	3	Textile Engineering, Chemistry & Science	159
Social Work	\$1,960.00	Crop Science	\$1,960.00	Crop Science	63	Biological Sciences	3	Biological & Agricultural Engineering	151
Foreign Languages & Literatures	\$1,960.00	Parks, Recreation & Tourism Management	\$1,960.00	Parks, Recreation & Tourism Management	63	Economics	3	Foreign Languages & Literatures	147
English	\$1,960.00	Social Work	\$1,960.00	Social Work	61	Marine, Earth and Atmospheric Sciences	3	Microbiology	146
Plant Pathology	\$1,960.00	Nuclear Engineering	\$1,960.00	Nuclear Engineering	57	Microbiology	3	Food, Bioprocessing and Nutrition Sciences	145
Forestry & Environmental Resources	\$1,960.00	Agricultural & Resource Economics	\$1,960.00	Agricultural & Resource Economics	55	Animal Science	2	Agricultural & Extension Education	144
Poultry Science	\$1,960.00	Landscape Architecture	\$1,960.00	Landscape Architecture	54	Public & International Affairs	2	Nuclear Engineering	136
Horticultural Science	\$1,960.00	Sociology and Anthropology HASS	\$1,960.00	Sociology and Anthropology HASS	50	Sociology and Anthropology HASS	2	Curriculum and Instruction	131
Marine, Earth and Atmospheric Sciences	\$1,960.00	Animal Science	\$1,960.00	Animal Science	49	Soil Science	2	Physics	127
Communication	\$1,960.00	Biological & Agricultural Engineering	\$1,960.00	Biological & Agricultural Engineering	48	Business Management	1	Graphic Design	113
Business Management	\$1,960.00	Horticultural Science	\$1,960.00	Horticultural Science	48	Poultry Science	1	Wood & Paper Science	112
Philosophy & Religion	\$1,960.00	Textile & Apparel Technology & Management	\$1,960.00	Textile & Apparel Technology & Management	47	Accounting	0	Philosophy & Religion	99
Microbiology	\$1,960.00	Entomology	\$1,960.00	Entomology	41	Agricultural & Extension Education	0	Social Work	94
Economics	\$1,960.00	Plant Pathology	\$1,960.00	Plant Pathology	37	Architecture	0	Economics	86
Entomology	\$1,960.00	Communication	\$1,960.00	Communication	36	Art + Design	0	Art + Design	83
Agricultural & Resource Economics	\$1,960.00	Genetics	\$1,960.00	Genetics	36	Biomedical Engineering	0	Industrial Design	77
Environmental & Molecular Toxicology	\$1,960.00	Molecular & Structural Biochemistry	\$1,960.00	Molecular & Structural Biochemistry	36	Communication	0	Materials Science & Engineering	69
Industrial Design	\$1,960.00	Foreign Languages & Literatures	\$1,960.00	Foreign Languages & Literatures	35	English	0	Statistics	61
Plant Biology	\$1,960.00	Environmental & Molecular Toxicology	\$1,960.00	Environmental & Molecular Toxicology	35	Foreign Languages & Literatures	0	Landscape Architecture	51
Wood & Paper Science	\$1,960.00	Industrial Design	\$1,960.00	Industrial Design	32	Graphic Design	0	Poultry Science	47
Textile Engineering, Chemistry & Science	\$1,960.00	Plant Biology	\$1,960.00	Plant Biology	31	History	0	Soil Science	46
Art + Design	\$1,960.00	Wood & Paper Science	\$1,960.00	Wood & Paper Science	30	Industrial Design	0	Plant Biology	29
Architecture	\$1,960.00	Textile Engineering, Chemistry & Science	\$1,960.00	Textile Engineering, Chemistry & Science	27	Landscape Architecture	0	Entomology	6
Landscape Architecture	\$1,960.00	Soil Science	\$1,960.00	Soil Science	25	Management, Innovation & Entrepreneurship	0	Adult & Higher Education	0
Graphic Design	\$1,960.00	Poultry Science	\$1,960.00	Poultry Science	20	Music	0	Educational Leadership & Policy Studies	0
Industrial & Systems Engineering	\$1,960.00	Art + Design	\$1,960.00	Art + Design	17	Philosophy & Religion	0	Genetics	0
Parks, Recreation & Tourism Management	\$1,960.00	Graphic Design	\$1,960.00	Graphic Design	14	Social Work	0	Plant Pathology	0
Management, Innovation & Entrepreneurship	\$1,960.00	Management, Innovation & Entrepreneurship	\$1,960.00	Management, Innovation & Entrepreneurship	0	Textile & Apparel Technology & Management	0	Environmental & Molecular Toxicology	0
Music	\$1,960.00	Music	\$1,960.00	Music	0	Textile Engineering, Chemistry & Science	0	Management, Innovation & Entrepreneurship	0
Philosophy & Religion	\$1,960.00	Philosophy & Religion	\$1,960.00	Philosophy & Religion	0	Wood & Paper Science	0	Music	0



Genetics	\$1,017,435.43
Materials Science & Engineering	\$1,011,691.77
Civil, Construction & Environmental Engineering	\$970,604.00
Electrical & Computer Engineering	\$961,775.84
Computer Science	\$930,566.84

Outcomes

Outcomes

- Enable deliberate, data-driven decision making across a number of factors
- Reveal cumulative effects of small and large decisions about expenditures on resources over time

Outcomes

- Test assumptions about how we should be using the library's resources
- Start conversation about how we allocate resources

Other Considerations

Other Considerations

- How different academic units actually make use of the library and its resources
- Collecting areas important for their own sake
- Future utility of library collections
- The mapping has a significant effect on the numbers

Future Plans

Future Plans

- Update database each academic year
- Expand to include additional institutional data, such as University expenditures by academic unit
- Use data to inform decisions about resource allocations

Future Plans

- Refine and release a production portal to interact with and explore the dataset
- Add additional and/or weighted fund to department mappings

Thanks!



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