

Supplemental Information for "Evaluating Big Deal Journal Bundles"

Pricing summary by publisher

Table SI 1: Total Costs and Citations by Institution Type (2009)

Bundle	Estimated Cost to Research 1	Estimated Cost to Research 2	Estimated Cost to Master's	Number of Citations*
Full non-profit sample	\$599,323	\$492,101	\$419,798	588,637
95% of non-profit cites [†]	\$448,946	\$350,301	\$277,998	560,814
80% of non-profit cites	\$294,679	\$213,343	\$159,742	472,787
50% of non-profit cites	\$110,928	\$87,267	\$46,469	299,561
Elsevier [‡]	\$1,159,137	\$366,771	\$89,190	516,558
Springer	\$382,286	\$184,583	\$52,692	124,301
Wiley	\$329,535	\$94,072	\$30,726	63,520
Taylor & Francis	\$299,712	\$72,536	n.a.	27,405
Sage	\$114,015	\$61,378	\$26,586	15,751
Emerald	\$24,462	\$7,590	\$6,661	3,523
Average Serials Budget of institution type [§]	\$5,968,297	\$1,786,316	\$523,700	

*Number of citations estimates annual number of citations to a year's volume. It is found by dividing number of citations to most recent 5 years' volumes by 5. For journals not indexed by JCR, it is estimated from citations reported by *Scimago*.

[†]Costs for $x\%$ of non-profit cites are obtained by sorting non-profit bundles by cost per citation, then finding the cheapest bundle that would provide $x\%$ of the cites available from all non-profit bundles in our sample.

[‡]For the commercial publishers listed, the cost figures are estimates of prices paid by the average institution of each type, based on the regression coefficients appearing in Table SI 18 and the average values of the corresponding independent variables for each type of institution.

[§]Calculated from Library serials budgets reported by the National Center for Educational Statistics public use file for 2008, found at http://nces.ed.gov/surveys/libraries/aca_data.asp

Table SI 2: Bundle Prices of Non-Profit Publishers with Tiered Pricing by Type of Institution (2009)

Publisher*	Res 1	Res 2	Master's	Undergrad
Am Geophysical Union	\$13,230	\$8,820	\$5,880	\$2,920
Am Institute of Physics	\$25,950	\$23,155	\$20,685	\$18,635
*Am Medical Assoc	\$9,570	\$7,495	\$7,495	\$3,425
Am Physical Soc	\$17,771	\$11,510	\$9,085	\$9,085
Am Psychiatric Assoc	\$3,422	\$3,004	\$3,004	\$3,004
Am Psychol Assoc	\$26,150	\$19,200	\$14,550	\$3900
Am Soc Biochemical and Mol Bio	\$4,635	\$4,075	\$3,685	\$3,685
Am Soc Microbiology	\$7,984	\$6,143	\$3,734	\$3,734
*Cold Spring Harbor	\$10,595	\$9,380	\$9,380	\$9,380
*Company of Biologists	\$10,955	\$9,960	\$8,470	\$8,470
Endocrine Soc	\$3,730	\$3,730	\$3,160	\$3,160
Ecological Soc Amer	\$1,440	\$1,385	\$1,385	\$1,385
MIT Press	\$2,700	\$2,430	\$2,160	\$1,890
National Acad Science	\$3195	\$2,440	\$1,305	\$1,305
Rockefeller U Press	\$6,215	\$5,055	\$4,100	\$4,100
U of Chicago Press	\$21,439	\$ 14,866	\$14,866	\$10,967

*If no discount is offered for full bundle, the sum of *à la carte* prices is reported. Prices for societies marked * are for 2010. All other prices are for 2009.

Table SI 3: Bundle Cost Per Citation: Non-profits with Uniform Pricing (2009)

Publisher	Bundle Price	Bundle Discount*	Annual Citation [†]	Cost per Citation [‡]
Am Soc Pharm Exp Therap	\$2,335	None	5,334	\$0.44
Am Physiological Soc	\$6,665	None	14,215	\$0.47
Academy of Management	\$430	None	772	\$0.56
Annual Reviews	\$6,285	13%	10,811	\$0.58
Geological Soc Amer	\$1,650	20%	1,840	\$0.90
Am Meteorological Soc	\$4,044	5%	4,481	\$0.90
IEEE	\$43,995	51%	42,473	\$1.04
Am Assoc Cancer Res	\$2,485	40%	2,301	\$1.08
Am Economics Assoc [§]	\$665	*	596	\$1.12
Soil Science Soc Amer	\$1,938	36%	1,616	\$1.20
Entomological Soc Amer	\$1,397	None	989	\$1.41
Royal Soc Chemistry (Pkg A)	\$34,472	27%	24,342	\$1.42
Am Statistical Assoc	\$1,000	10%	674	\$1.48
Am Marketing Assoc	\$780	None	491	\$1.59
Royal Society (London)	\$12,510	19%	7,709	\$1.62
Soc Gen Microbiology	\$6,150	None	3,621	\$1.70
Optical Soc Amer	\$10,945	None	4,736	\$2.31
Inst Math Statistics	\$1,698	21%	689	\$2.47
Am Soc Horticultural Sci	\$940	None	357	\$2.63
SPIE	\$2,535	None	950	\$2.67
INFORMS	\$3,543	17%	1,172	\$3.02
Assoc Comp Machinery	\$3,800	22%	1,250	\$3.04
SIAM	\$5,894	20%	1,502	\$3.92
Am Mathematics Soc	\$4,129	None	894	\$4.62
Uni of Wisconsin Press	\$718	None	151	\$4.76
Am Soc Mechanical Eng	\$7,035	37%	1,438	\$4.89
Am Fisheries Soc	\$1,242	None	248	\$5.01
Inst of Physics	\$61,945	15%	11,001	\$5.63
Johns Hopkins Uni Press	\$2,055	None	334	\$6.16
Am Soc Civil Eng	\$10,590	25%	1,658	\$6.39
Inst Engineering & Tech (IET)	\$7,386	71%	1,125	\$6.56
Uni California Press	\$1,748	None	207	\$8.44
Am Inst Aero & Astro	\$5,888	None	690	\$8.54
Am Inst Mathematics	\$2,350	65%	246	\$9.55
Duke Uni Press	\$2,650	None	223	\$11.89
Am Nuclear Soc	\$5,245	None	229	\$22.86

*Bundle discount is the rate at which purchase of the entire bundle is discounted below the sum of *à la carte* prices. For publishers with no bundle discount, bundle price and estimated citations are counted only for journals included in *Journal Citation Reports*

[†]Annual numbers of citations and articles are calculated by dividing the 5-year citation and article counts reported in *Journal Citation Reports* by 5.

[‡]Bundles are sorted by price per citation, from low to high.

[§]The American Economics Association journals are not sold separately. Bundle prices are for 2009.

Publishers' bundle costs by publisher and institution

Tables SI4-SI16 show prices paid by each institution for each publisher and institution for which we have contract information. Prices are for the year 2009 and are recorded from original contracts that we received in response to Freedom of Information requests. Student enrollments and University Carnegie class are for the year 2008 and are taken from the National Center for Educational Statistics public use file for 2008, found at http://nces.ed.gov/surveys/libraries/aca_data.asp Number of Ph.Ds is taken from the NSF report "Doctorate Recipients from U.S. Universities: 2009," Tables 7 and 8 found at <http://www.nsf.gov/statistics/doctorates/>

Table SI 4: Cost of Elsevier Freedom Package: Research 1 and 2 Institutions (2009)

University	Carnegie	Ph.Ds	Enrollment	Cost
Arizona Universities *	Res 1	1,286	123,473	\$2,743,506
Auburn	Res 1	180	22,654	\$1,252,544
Clemson	Res 1	144	16,582	\$1,296,044
Colorado State	Res 1	185	24,409	\$1,319,633
Cornell	Res 1	513	20,340	\$1,969,908
Georgia State	Res 1	131	25,135	\$934,764
Louisiana State	Res 1	213	28,467	\$1,198,237
New York U.	Res 1	341	40,291	\$1,878,962
U of Alabama	Res 1	131	22,971	\$1,018,614
U of California [†]	Res 1	3,505	218,320	\$8,760,966
U of Colorado	Res 1	285	28,333	\$1,725,023
U of Denver	Res 1	65	10,036	\$467,406
U of Georgia	Res 1	386	33,079	\$1,854,419
U of Idaho	Res 1	56	10,008	\$750,808
Illinois Universities [‡]	Res 1	934	72,751	\$2,319,383
U of Iowa	Res 1	295	27,361	\$1,420,484
U of Maryland	Res 1	475	31,573	\$1,760,173
U of Michigan	Res 1	787	39,447	\$2,164,830
U of Tennessee	Res 1	230	27,635	\$579,815
U of Texas, Arlington	Res 1	124	20,136	\$620,042
U of Texas, Austin	Res 1	647	46,537	\$1,539,380
U of Utah [§]	Res 2	285	26,764	\$1,047,833
U of Virginia	Res 1	282	23,838	\$1,568,160
U of Wisconsin	Res 1	696	35,295	\$1,215,516
U of Wyoming	Res 1	55	10,478	\$497,014
Alabama A&M	Res 2	14	5,742	\$253,057
U of Alaska, Fairbanks	Res 2	33	5651	\$150,012
North Dakota State	Res 2	61	10,834	\$498,410
U of Alabama, Huntsville	Res 2	32	5,754	\$55,609
U of Montana	Res 2	49	12,727	\$492,206
U of North Dakota	Res 2	20	11,861	\$458,801
U of No. Colorado	Res 2	27	11,814	\$137,109
U of So. Alabama	Res 2	10	12,037	\$471,666
U of Texas, Dallas	Res 2	112	12,089	\$415,457
U of Texas, El Paso	Res 2	30	15,541	\$376,175

*Licensed jointly to consortium including U of Ariz, Ariz State U and Northern Ariz U. Price for 2009 estimated from 2007 price, assuming 5% annual increase.

[†]Licensed jointly to 10 University of California campuses.

[‡]Licensed jointly to U of Illinois campuses at Champaign-Urbana, Chicago, and Springfield.

[§]Includes subscriptions for both Marriott library and Eccles library. Price for 2009 estimated from 2010 price, assuming 5% annual increase.

Table SI 5: Cost of Elsevier Freedom Package: Master's Institutions (2009)

University	Enrollment	Cost
Alabama State	5,113	\$117,319
Auburn at Montgomery	4,153	\$45,015
College of St. Catherine (MN)	4,486	\$48,270
Colorado School of Mines	3,940	\$214,143
Jacksonville State	3,948	\$31,809
Mankato State U	13,018	\$192,454
Regis	7,968	\$23,724
St. Mary's College (MN)	4,486	\$48,270
Troy University	16,512	\$42,655
Tuskegee	3,322	\$56,622
U Colorado, Col Spring	7,159	\$90,305
U of North Alabama	5,904	\$36,952
U of Texas, Brownsville	9,668	\$18,316
U of Texas, San Antonio	22,714	\$252,615
U of Texas, Tyler	4,788	\$22,465
U of Texas, Pan American	15,342	\$16,285
Western Washington U	13,416	\$184,440

Table SI 6: Cost of Springer Journal Collection (2009)

University	Carnegie	Ph.D's	Enrollment	Cost
CIC Consortium*	Res 1	4,667	414,652	\$4,174,998
Clemson	Res 1	144	16,582	\$322,680
Colorado State U	Res 1	185	24,409	\$378,709
Georgia Consortium (GETSM) [†]	Res 1	1,169	102,994	\$727,829
Northern Illinois U	Res 1	59	21,457	\$185,284
Rensselaer Polytechnic U	Res 1	131	6,946	\$31,916
Syracuse	Res 1	116	16,973	\$264,034
Temple	Res 1	164	32,459	\$449,352
Tufts	Res 1	124	10,150	\$360,436
U of California [‡]	Res 1	3,505	218,319	\$3,429,570
U of Kentucky	Res 1	230	23,123	\$525,089
U of Maine	Res 1	51	9,407	\$336,290
U of Mass, Amherst	Res 1	219	24,231	\$168,244
U of Miami	Res 1	155	14,946	\$553,923
U of Tennessee	Res 1	230	27,635	\$379,251
U of Texas, Arlington	Res 1	124	20,136	\$166,209
U of Texas, Austin	Res 1	647	46,537	\$481,932
U of Virginia	Res 1	282	23,838	\$453,426
Vanderbilt	Res 1	248	10,361	\$539,121
Yale	Res 1	381	12,565	\$711,564
Dartmouth	Res 2	77	5804	\$483,488
U of Mass, Lowell	Res 2	37	8193	\$85,633
U of Montana	Res 2	49	12,727	\$145,727
U of Texas, Dallas	Res 2	112	12089	\$100,746
U of Texas, El Paso	Res 2	30	15541	\$118,008
California State System	Masters	30	376,802	\$812,740
Mount Holyoke College	Masters	0	2,296	\$38,093
U of So Maine	Masters	0	7526	\$23,941
U of Texas, Brownsville	Masters	0	9,668	\$18,546
U of Texas, Pan-American	Masters	0	15,342	\$60,605
U of Texas, San Antonio	Masters	26	22,714	\$95,347
U of Texas, Tyler	Masters	0	4,788	\$11,697

*Licensed jointly to consortium including Michigan State, Penn State, Illinois-Chicago, Illinois-Urbana, Iowa, Minnesota, Michigan, Chicago, Indiana, and Northwestern.

[†]Licensed jointly to consortium including U of Ga, Ga State, Emory, Georgia Tech, U of West Ga, Morehouse, and Medical College of Ga.

[‡]Licensed jointly to 10 University of California campuses.

Table SI 7: Cost of Sage Journal Package: Research 1 and 2 (2009)

University	Carnegie	Ph.D's	Enrollment	Cost
Brigham Young	Res 1	68	33,255	\$184,921
Florida State	Res 1	271	29,087	\$136,468
New York U	Res 1	341	40,297	\$176,450
Oklahoma State	Res 1	134	20,323	\$69,484
Rutgers	Res 1	339	32,802	\$175,097
Stanford	Res 1	594	14,212	\$153,815
U of Arizona	Res 1	401	35,044	\$108,487
U of California	Res 1	3,505	218,389	\$930,063
U of Colorado	Res 1	285	28,333	\$130,860
U of Denver	Res 1	65	10,036	\$87,577
U of Kansas	Res 1	212	25,168	\$100,438
U of Massachusetts	Res 1	219	24,231	\$84,688
U of Michigan	Res 1	716	39,447	\$184,635
U of Minnesota	Res 1	587	44,486	\$205,000
U of Missouri	Res1	230	24,903	\$107,825
U of New Mexico	Res 1	183	20,886	\$104,544
U of Rhode Island	Res 1	63	13,539	\$72,830
U of Tennessee	Res 1	230	27,635	\$119,917
U of Utah	Res 1	285	26,764	\$84,298
U of Virginia	Res 1	393	23,838	\$127,792
U of Wyoming	Res 1	55	10,478	\$68,240
Utah State	Res 1	71	17,707	\$57,618
Yale	Res 1	381	12,565	\$176,365
Baylor	Res 2	63	14,184	\$90,073
Calif State, San Diego	Res 2	11	28,835	\$104,185
U of Colorado, Denver	Res 2	27	34,931	\$73,918
U of Montana	Res 2	49	12,727	\$54,215
U of No. Colorado	Res 2	27	11,814	\$66,519
U of Tulsa	Res 2	22	3,831	\$45,028

Table SI 8: Cost of Sage Journal Package: Master's Institutions (2009)

University	Enrollment	Cost
Bryant University	3,508	\$9,176
Cal Poly (San Luis Obispo)	17,913	\$34,421
Cal Poly (Pomona)	19,300	\$31,533
Cal State Bakersfield	7,915	\$40,626
Cal State Chico	16,498	\$24,261
Cal State Dominguez Hills	10,079	\$42,925
Cal State East Bay	13,306	\$34,474
Cal State Fresno	20,384	\$47,915
Cal State Fullerton	28,602	\$74,572
Cal State Long Beach	31,242	\$68,604
Cal State Los Angeles	19,103	\$33,467
Cal State Northridge	29,429	\$48,197
Cal State Sacramento	26,137	\$77,597
Cal State San Bernadino	15,916	\$16,016
Cal State San Francisco	26,773	\$69,178
Cal State San Jose	26,592	\$26,115
Cal State San Marcos	7,920	\$36,189
Cal State Sonoma	8,161	\$14,626
Cal State Stanislaus	7,048	\$49,057
Humboldt State University	7,698	\$18,377
Providence College	4,828	\$49,770
Regis University	7,968	\$29,639
Rhode Island College	6,974	\$29,706
Univ of Colorado, Colorado Springs	7,159	\$32,361

Table SI 9: Cost of Wiley Journal Package: Research 1 Institutions (2009)

University	Carnegie	Ph.Ds	Enrollment	Cost
Arizona State	Res 1	428	61,449	\$342,382
Brigham Young	Res 1	68	33,255	\$294,609
Colorado State	Res 1	185	24,409	\$364,848
Emory	Res 1	199	14,515	\$423,285
Georgia Inst of Tech	Res 1	485	18,740	\$386,326
Georgia State	Res 1	131	25,135	\$223,015
Indiana	Res 1	359	36,631	\$266,996
Iowa State	Res 1	285	23,052	\$457,840
Louisiana State	Res 1	213	28,467	\$230,527
Michigan State	Res 1	388	41,689	\$363,681
Mississippi State	Res 1	70	15,278	\$309,100
Northwestern	Res 1	354	17,181	\$451,646
Oklahoma State	Res 1	134	20,323	\$185,795
Old Dominion	Res 1	64	16,469	\$121,031
Pennsylvania State	Res 1	598	75,180	\$683,258
Purdue	Res 1	610	41,275	\$592,391
Rice	Res 1	162	5,486	\$323,354
Southern Illinois	Res 1	112	16,513	\$293,638
Texas A&M	Res 1	518	44,432	\$541,830
UC Berkeley	Res 1	814	35,364	\$455,871
UC Davis	Res 1	471	29,898	\$446,870
UC Irvine	Res 1	391	27,395	\$303,202
UC Los Angeles	Res 1	677	37,962	\$363,483
UC Riverside	Res 1	175	17,066	\$270,089
UC San Diego	Res 1	403	27,514	\$362,280
UC San Francisco	Res 1	131	2,905	\$196,501
UC Santa Barbara	Res 1	308	21,969	\$302,600
UC Santa Cruz	Res 1	135	15,657	\$147,108
U of Arizona	Res 1	401	35,044	\$447,138
U of Arkansas	Res 1	132	15,926	\$289,467
U of Chicago	Res 1	365	14,576	\$371,463
U of Colorado	Res 1	285	28,333	\$433,224
U of Georgia	Res 1	336	33,079	\$536,645
U of Houston	Res 1	176	28,400	\$304,788
U of Idaho	Res 1	56	10,008	\$147,356
U of Illinois, Chicago	Res 1	269	23,572	\$404,123
U of Illinois, Urbana	Res 1	665	45,599	\$422,531
U of Iowa	Res 1	295	27,361	\$378,481
U of Kansas	Res 1	212	25,168	\$268,286
U of Kentucky	Res 1	230	25,168	\$487,679
U of Michigan	Res 1	787	39,447	\$535,536
U of Minnesota	Res 1	587	44,486	\$502,355
U of Missouri	Res 1	230	24,903	\$233,659
U of Nebraska	Res 1	184	17,572	\$318,358
U of Nevada, Reno	Res 1	109	13,134	\$156,672
U of Oklahoma	Res 1	193	21,965	\$500,744
U of Oregon	Res 1	136	19,838	\$285,036
U of Tennessee	Res 1	230	27,635	\$282,575
U of Texas, Arlington	Res 1	124	20,136	\$173,459
U of Texas, Austin	Res 1	647	46,537	\$433,551
U of Virginia	Res 1	282	23,838	\$480,537
U of Washington	Res 1	562	39,432	\$488,120
Virginia Commonwealth	Res 1	117	25,344	\$439,890
Wash U, St. Louis	Res 1	248	11,860	\$541,663
West Virginia	Res 1	125	27,120	\$326,487

Table SI 10: Cost of Wiley Journal Package: Research 2 Institutions (2009)

University	Carnegie	Ph.Ds	Enrollment	Cost
Baylor	Res 2	63	14,184	\$174,087
George Mason	Res 2	168	22,640	\$155,066
Indiana U, Indianapolis	Res 2	0	23,664	\$269,104
North Dakota State	Res 2	61	10,834	\$147,839
Northern Arizona	Res 2	29	26,980	\$42,718
South Dakota State	Res 2	25	9,544	\$46,004
U of Alaska, Fairbanks	Res 2	37	5,651	\$54,395
U of Montana	Res 2	49	12,727	\$63,502
U of Nevada, Las Vegas	Res 2	58	23,762	\$117,525
U of North Dakota	Res 2	29	11,814	\$143,155
U of South Dakota	Res 2	25	6,915	\$82,566
U of Texas, Dallas	Res 2	112	12,089	\$78,574
U of Texas, El Paso	Res 2	30	15,541	\$91,027
U of Tulsa	Res 2	22	3,831	\$94,475
Wichita State	Res 2	0	10,717	\$115,997

Table SI 11: Cost of Wiley Journal Package: Master's Institutions (2009)

University	Enrollment	Cost
Boise State University	15,007	\$75,325
Indiana University Fort Wayne	8,639	\$22,339
Indiana University Northwest	3,666	\$3,833
Indiana University South Bend	5,113	\$9,649
Indiana University Southeast	4,604	\$18053
James Madison University	17,151	\$52,093
Marshall University	13,270	\$70,948
Radford University	8,881	\$25,643
University of Michigan Dearborn	6,256	\$9,341
University of Michigan Flint	5,219	\$13,914
University of Minnesota Duluth	9,913	\$72,505
University of Texas Brownsville	9,668	\$7,763
University of Texas Pan American	15,342	\$62,974
University of Texas Permian Basin	2,946	\$3,244
University of Texas San Antonio	22,714	\$194,802
University of Texas Tyler	4,788	\$35,348

Table SI 12: Cost of Taylor & Francis Journal Package (2009)

University	Carnegie	Ph.Ds	Enrollment	Cost
New York U	Res 1	341	40,297	\$488,725
U of California*	Res 1	3,505	218,319	\$1,957,505
U of Virginia	Res 1	282	23,838	\$314,971
U of Minnesota [†]	Res 1	587	44,486	\$430,000
U of New Mexico [‡]	Res 1	183	20,886	\$315,852
U of Montana	Res 2	49	12,727	\$72,536

*University of California price is estimated from the 2007 contract for \$1,775,515 with an assumed 5% annual increase for two years.

[†]U of Minnesota has access to 500 selected journals.

[‡]U of New Mexico has the STM collection.

Table SI 13: Cost of Emerald Journal Package (2009)

University	Carnegie	Ph. Ds	Enrollment	Cost
Arizona State	Res 1	428	61,449	\$108,350
Auburn	Res 1	180	22,654	\$25,104
Clemson	Res 1	144	16,582	\$16,400
Cornell	Res 1	513	20,340	\$27,434
Florida State	Res 1	271	29,080	\$31,196
Purdue	Res 1	610	41,275	\$56,691
U of Arizona	Res 1	401	35,044	\$34,560
U of Colorado	Res 1	285	28,333	\$35,750
U of Georgia	Res 1	386	33,079	\$10,614
U of Kentucky	Res 1	230	23,123	\$30,000
U of Michigan	Res 1	787	39,447	\$44,995
U of Minnesota	Res 1	587	44,486	\$25,787
U of New Mexico	Res 1	183	20,886	\$5,845
U of Oklahoma	Res 1	193	21,965	\$32,000
U of Texas	Res 1	647	46,537	\$23,000
U of Virginia	Res 1	282	23,838	\$14,359
Washington State U	Res 1	168	22,249	\$12,843
Cal State, San Diego	Res 2	11	28,835	\$2,967
U of Montana	Res 2	49	12,727	\$7,209
U of North Dakota	Res 2	20	11,861	\$7,970
Cal Poly, San Luis Obispo	Masters	0	17,913	\$12,714
Cal Poly, Pomona	Masters	0	19,300	\$14,725
Cal State, Chico	Masters	0	16,498	\$3,164
Cal State, Dominguez Hills	Masters	0	10,079	\$2,253
Cal State, East Bay	Masters	0	13,306	\$3,154
Cal State, Fresno	Masters	0	20,384	\$3,390
Cal State, Fullerton	Masters	0	28,602	\$7,419
Cal State, Long Beach	Masters	0	31,242	\$1,591
Cal State, Northridge	Masters	0	29,429	\$2,205
Cal State, Sacramento	Masters	0	26,137	\$5,151
Cal State, San Bernadino	Masters	0	15,916	\$8,702
Cal State, San Francisco	Masters	4	26,773	\$12,154
Cal State, San Jose	Masters	4	26,592	\$17,404
Cal State, San Marcos	Masters	0	7,920	\$3,785
Cal State, Stanislaus	Masters	0	7,048	\$6,511

Table SI 14: Cost of American Chemical Society Journal Bundle (2009)

University	Carnegie	Ph.D's	Enrollment	Cost
Colorado State	Res 1	185	24,409	\$55,495
New York U	Res 1	341	40,297	\$91,989
U of Michigan	Res 1	787	39,447	\$84,372
U of Minnesota	Res 1	587	44,486	\$88,939
U of So. Carolina	Res 1	188	24,449	\$84,317
U of Washington	Res 1	562	39,432	\$65,666
U of Montana	Res 2	49	12,727	\$53,354
Cal State Consortium*	Masters	19	355,555	\$505,662

* Consortium includes 19 California State institutions.

Table SI 15: Cost of Oxford University Press Journal Package (2009)

University	Carnegie	Ph. Ds	Enrollment	Cost
U of Colorado *	Res 1	285	28,333	\$48,003
U of Iowa	Res 1	295	27,361	\$120,510
U of Minnesota	Res 1	587	44,486	\$105,469
U of New Mexico	Res 1	183	20,886	\$52,515
U of Utah	Res 1	285	26,764	\$77,605
U of Washington	Res 1	562	39,432	\$106,042
Cal State, San Diego	Res 2	11	28,835	\$25,334
U of Montana	Res 2	49	12,727	\$31,962
Cal Poly, Pomona	Masters	0	19,300	\$9,749
Cal Poly, San Luis Obispo	Masters	0	17,913	\$4,054
Cal State, Bakersfield	Masters	0	7,915	\$6,427
Cal State, Chico	Masters	0	16,498	\$8,187
Cal State, Dominguez Hills	Masters	0	10,079	\$5,603
Cal State, Fresno	Masters	0	20,384	\$16,028
Cal State, Fullerton	Masters	0	28,602	\$11,310
Cal State, Humboldt	Masters	0	7,698	\$5,567
Cal State, Long Beach	Masters	0	31,242	\$14,111
Cal State, Los Angeles	Masters	0	19,103	\$7,643
Cal State, Northridge	Masters	0	29,429	\$19,897
Cal State, Sacramento	Masters	0	26,137	\$18,748
Cal State, San Bernadino	Masters	0	15,916	\$5,483
Cal State, San Francisco	Masters	4	26,773	\$18,423
Cal State, San Jose	Masters	4	26,592	\$7,077
Cal State, San Marcos	Masters	0	7,920	\$5,295
Cal State, Sonoma	Masters	0	8,161	\$4,671
Cal State, Stanislaus	Masters	0	7,048	\$3,783

* Estimated from 2006 contract assumes 5% annual increase.

Table SI 16: Cost of Cambridge University Press Journal Package (2009)

University	Carnegie	Ph. Ds	Enrollment	Cost
U of Oregon	Res 1	146	19,838	\$39,216
U of Virginia	Res 1	282	23,838	\$31,694
U of Washington	Res 1	562	39,432	\$55,882
U of Wyoming	Res 1	55	10,478	\$33,195
U of Montana	Res 2	49	12,727	\$24,039
Portland State	Res 2	0	18,741	\$24,944
Eastern Oregon	Masters	0	2,448	\$3,699
Eastern Washington	Masters	0	9,955	\$10,485
George Fox	Masters	0	2,889	\$7,601
Pacific U	Masters	0	2,642	\$9,086
Seattle U	Masters	0	7,467	\$9,854
Walla Walla Col	Masters	0	1,811	\$1,618
Western Washington	Masters	0	13,416	\$14,704
Whitman Col	Masters	0	1,398	\$11,610

Table SI 17: Comparison of Alternative Measures of Cost-Effectiveness (2009)

Library Type*	Publisher	Cost per citation	Cost per 10 ⁴ eigenfactor	Cost per article
Res 1	Full non-profit sample	\$1.02	\$2.15	\$3.37
Res 1	Cost-efficient 95% of non-profits	\$0.80	\$1.72	\$3.00
Res 1	Cost-efficient 80% of non-profits	\$0.61	\$1.35	\$2.25
Res 1	Cost-efficient 50% of non-profits	\$0.38	\$0.85	\$1.61
Res 1	Elsevier	\$2.24	\$5.68	\$4.82
Res 1	Springer	\$3.08	\$7.17	\$3.64
Res 1	Wiley	\$5.19	\$12.58	\$10.76
Res 1	Emerald	\$6.94	\$57.99	\$5.20
Res 1	Sage	\$7.24	\$17.39	\$9.60
Res 1	Taylor & Francis	\$10.94	\$29.75	\$8.55
Res 2	Full non-profit sample	\$0.84	\$1.76	\$2.77
Res 2	Cost-efficient 95% of non-profits	\$0.63	\$1.37	\$2.37
Res 2	Cost-efficient 80% of non-profits	\$0.45	\$1.03	\$1.75
Res 2	Cost-efficient 50% of non-profits	\$0.29	\$0.64	\$1.24
Res 2	Elsevier	\$0.71	\$1.80	\$1.52
Res 2	Springer	\$1.48	\$3.46	\$1.76
Res 2	Wiley	\$1.48	\$3.59	\$3.07
Res 2	Emerald	\$2.15	\$17.99	\$1.61
Res 2	Sage	\$3.90	\$9.36	\$5.17
Res 2	Taylor & Francis	\$2.65	\$7.20	\$2.07
Master's	Full non-profit sample	\$0.71	\$1.49	\$2.35
Master's	Cost-efficient 95% of non-profits	\$0.50	\$1.10	\$1.93
Master's	Cost-efficient 80% of non-profits	\$0.34	\$0.66	\$1.26
Master's	Cost-efficient 50% of non-profits	\$0.15	\$0.32	\$0.75
Master's	Elsevier	\$0.17	\$0.44	\$0.37
Master's	Springer	\$0.42	\$0.99	\$0.50
Master's	Wiley	\$0.48	\$1.17	\$1.00
Master's	Emerald	\$1.89	\$15.79	\$1.42
Master's	Sage	\$1.69	\$4.06	\$2.24
Master's	Taylor & Francis	n.a.	n.a.	n.a.

*For each output measure, citations, articles, and eigenfactor, and for each type of institution, the figures for "Cost-efficient $x\%$ of non-profits" are obtained as follows: All non-profit bundles in our sample are sorted by cost to an institution of given type per unit of the output measure available in that bundle. We find the cheapest set of bundles that provide $x\%$ of the total amount of that output measure from all of our non-profit bundles. We then calculate the total cost of this set of bundles and divide this cost by the number of units of the output measure in the set.

Table SI 18: Regression coefficients used to estimate average costs to universities by Carnegie classification

(dependent variable: Payment2009)"

	Elsevier	Wiley	Springer	Sage	Emerald	ACS
Enrollment	-1.508 -5.168 (0.996)	2.585* (0.996)	1.816*** (0.375)	1.449*** (0.316)	0.777** (0.279)	0.352 (0.286)
Phds in 2009	2290.0*** -333.2 (70.76)	272.2*** (70.76)	673.1*** (41.60)	163.8*** (20.59)	13.44 (21.43)	-8.776 (33.60)
HasMedSchool	15382.6 -122152.4 (21906.3)	52447.4* (21906.3)	62342.4 (71645.3)	-16153.6 (11505.6)	-13046.5 (8305.9)	19605.6 (13227.9)
HasHospital	59994 -142376.6 (24743.1)	-2260.1 (24743.1)	256037.6** (85018.1)	2359.2 (11917.4)	315.7 (8109.0)	10393.3 (16621.2)
Research2	-314757.6* -125717.1 (26531.4)	-131379.5** (26531.4)	44363.5 (71625.2)	-8902.5 (12045.4)	-19515.0 (11514.7)	-8618.4 (13525.6)
UnderMaster	-500152.3** -108983.5 (27910.1)	-162216.4** (27910.1)	-27716.5 (61123.2)	-32574.5*** (8710.8)	-19289.1* (9263.2)	-23308.6 (11870.2)
Constant	598746.5*** (105460.5)	176822.8*** (25532.2)	69084.4 (43853.7)	50124.5*** (8772.0)	11373.3 (10290.5)	43340.8** (12966.1)
Observations	54	92	36	60	36	27
Adjusted R-squared	0.950	0.809	0.975	0.966	0.553	0.803

Standard errors in parentheses

=** p<0.05

** p<0.01

*** p<0.001"