



ASSOCIATION OF RESEARCH LIBRARIES

March 10, 2004

To: Directors of ARL Libraries
From: Martha Kyrillidou, Senior Program Officer for Statistics and Measurement
Re: 2002-03 ARL membership criteria index (principal component scores)

The 2002-03 ARL membership criteria index and index formula are attached. Please note that the index includes only university library members of ARL. The index is a summary measure of relative size among the university library members of the Association and its sole purpose is to serve as a membership criterion that is quantitative in nature in addition to other qualitative evidence. Both qualitative and quantitative factors support the assessment of research libraries within the Association.

The index is composed of the five quantitative data elements in which ARL university libraries most resemble one another, and does not attempt to measure a library's services, quality of collections, or success in meeting the needs of users. Information about index scores from earlier years as well as excel versions of the index tables are available at: <http://www.arl.org/stats/factor.html>

Principles and procedures for Membership in the Association of Research Libraries are available at: <http://www.arl.org/stats/qualcov.html>. Decisions on membership issues are being dealt by the ARL Membership Committee which has the responsibility for articulating the principles and tenets of ARL membership, reviews membership criteria, recommends new members to the Board for approval by the full membership, and reviews and makes recommendations on membership status. For more information on the ARL Membership Committee agenda, please contact Julia Blixrud, Assistant Executive Director, External Relations jblix@arl.org.

If you have any questions regarding the methodology used to develop the ARL membership criteria index or any other aspect of the ARL Statistics and Measurement Program, please contact me martha@arl.org.

Thank you for your continuing support and contributions to the ARL Statistics and Measurement data gathering efforts.

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Principal Component Scores
ARL Membership Criteria Index, 2002-03

Attached is the ARL membership criteria index for 2002-03, arranged both in alphabetic and rank order. The index is a summary measure of relative size among the university members of the association. The index scores are rounded to two decimal places, which may give the appearance of identical scores (and thus ranks) for some institutions; in fact, when the complete principal component score is calculated, it is extended to at least five places. Each institution has a unique result and place in the rank order.

The five variables used in the index were determined by factor analysis of 22 variables originally and represent the elements in which ARL university libraries most resemble one another.* The index does not attempt to measure a library's services, quality of collections, or success in meeting the needs of users. In comparing any individual library to ARL medians or other ARL members, evaluations must always be made within the context of local goals and characteristics.

The index is calculated using five data elements:

- number of volumes held
- number of volumes added (gross)
- number of current serials received
- total operating expenditures
- number of professional plus support staff

* Note: The 5-variable index was adopted as a membership criterion in May 1987 by the ARL membership. Previous membership criteria were based on a 10-variable index, which had been adopted by the membership in May 1980. The elements used in the 10-variable index were: (1) number of volumes held, (2) number of volumes added (gross), (3) number of microform units held, (4) number of current serials received, (5) expenditures for library materials, (6) expenditures for binding, (7) total salary and wage expenditures, (8) other operating expenditures, (9) number of professional staff, and (10) number of support staff.

ARL MEMBERSHIP CRITERIA INDEX
Five-variable Formula for ARL Principal Component Score

log refers to natural log (ln)

Formula for 2002-03 (34 founding members) [formula edited May 25, 2004]

$$\begin{aligned} &.448254 \times \log \text{ of volumes held} \\ + &.405890 \times \log \text{ of volumes added (gross)} \\ + &.501317 \times \log \text{ of current serials} \\ + &.474768 \times \log \text{ of total library expenditures} \\ + &.468353 \times \log \text{ of total professional plus support staff} \\ - &27.812645 \end{aligned}$$

ARL MEMBERSHIP INDEX, 2002-03
 (Based on Five ARL Variables and Analysis of 34 ARL University Founding Members)

Rank	Institution	Index	Rank	Institution	Index
1	HARVARD	2.54	58	GEORGETOWN	-1.11
2	YALE	1.44	59	TEXAS TECH	-1.16
3	CALIFORNIA, BERKELEY	1.34	60	BOSTON	-1.17
4	TORONTO	1.23	61	COLORADO	-1.18
5	MICHIGAN	1.13	62	NEW MEXICO	-1.19
6	ILLINOIS, URBANA	1.02	63	MIAMI	-1.22
7	CALIFORNIA, LOS ANGELES	0.89	64	HAWAII	-1.27
8	CORNELL	0.88	65	BROWN	-1.27
9	COLUMBIA	0.81	66	MISSOURI	-1.29
10	TEXAS	0.74	67	WAYNE STATE	-1.34
11	WISCONSIN	0.64	68	CALIFORNIA, SANTA BARBARA	-1.35
12	INDIANA	0.46	69	SOUTH CAROLINA	-1.35
13	PENNSYLVANIA STATE	0.43	70	MIT	-1.38
14	WASHINGTON	0.41	71	DARTMOUTH	-1.39
15	NORTH CAROLINA	0.25	72	LAVAL	-1.40
16	PRINCETON	0.20	73	IOWA STATE	-1.42
17	NEW YORK	0.16	74	LOUISIANA STATE	-1.42
18	CHICAGO	0.13	75	PURDUE	-1.43
19	MINNESOTA	0.09	76	RICE	-1.43
20	DUKE	0.09	77	NEBRASKA	-1.43
21	PENNSYLVANIA	0.04	78	ILLINOIS, CHICAGO	-1.47
22	ALBERTA	0.00	79	SOUTHERN ILLINOIS	-1.50
23	OHIO STATE	-0.01	80	WESTERN ONTARIO	-1.51
24	BRITISH COLUMBIA	-0.05	81	LOUISVILLE	-1.52
25	VIRGINIA	-0.06	82	FLORIDA STATE	-1.52
26	IOWA	-0.16	83	BOSTON COLLEGE	-1.54
27	ARIZONA	-0.16	84	GEORGE WASHINGTON	-1.55
28	PITTSBURGH	-0.18	85	ROCHESTER	-1.56
29	RUTGERS	-0.18	86	COLORADO STATE	-1.60
30	NORTHWESTERN	-0.26	87	OHIO	-1.61
31	GEORGIA	-0.30	88	AUBURN	-1.61
32	NORTH CAROLINA STATE	-0.30	89	SYRACUSE	-1.61
33	UTAH	-0.36	90	TEMPLE	-1.62
34	TEXAS A&M	-0.39	91	OREGON	-1.63
35	WASHINGTON U.-ST. LOUIS	-0.46	92	WASHINGTON STATE	-1.63
36	FLORIDA	-0.46	93	YORK	-1.63
37	ARIZONA STATE	-0.47	94	HOUSTON	-1.64
38	JOHNS HOPKINS	-0.47	95	OKLAHOMA STATE	-1.64
39	SOUTHERN CALIFORNIA	-0.53	96	VIRGINIA TECH	-1.70
40	MICHIGAN STATE	-0.64	97	ALABAMA	-1.72
41	CALIFORNIA, SAN DIEGO	-0.64	98	CALIFORNIA, RIVERSIDE	-1.72
42	VANDERBILT	-0.68	99	SUNY-ALBANY	-1.76
43	EMORY	-0.69	100	GEORGIA TECH	-1.82
44	KANSAS	-0.70	101	CASE WESTERN RESERVE	-1.83
45	CINCINNATI	-0.73	102	TULANE	-1.85
46	CALIFORNIA, DAVIS	-0.73	103	DELAWARE	-1.88
47	MONTREAL	-0.80	104	QUEEN'S	-1.91
48	MARYLAND	-0.84	105	MASSACHUSETTS	-1.91
49	MCGILL	-0.87	106	MANITOBA	-2.00
50	CONNECTICUT	-0.87	107	KENT STATE	-2.02
51	KENTUCKY	-0.92	108	SASKATCHEWAN	-2.06
52	NOTRE DAME	-0.94	109	SUNY-STONY BROOK	-2.09
53	TENNESSEE	-0.96	110	HOWARD	-2.20
54	CALIFORNIA, IRVINE	-0.97	111	MCMASTER	-2.24
55	BRIGHAM YOUNG	-1.02	112	WATERLOO	-2.36
56	SUNY-BUFFALO	-1.03	113	GUELPH	-2.99
57	OKLAHOMA	-1.10			

ARL MEMBERSHIP INDEX, 2002-03
 (Based on Five ARL Variables and Analysis of 34 ARL University Founding Members)

Rank	Institution	Index	Rank	Institution	Index
97	ALABAMA	-1.72	63	MIAMI	-1.22
22	ALBERTA	0.00	5	MICHIGAN	1.13
27	ARIZONA	-0.16	40	MICHIGAN STATE	-0.64
37	ARIZONA STATE	-0.47	19	MINNESOTA	0.09
88	AUBURN	-1.61	66	MISSOURI	-1.29
60	BOSTON	-1.17	70	MIT	-1.38
83	BOSTON COLLEGE	-1.54	47	MONTREAL	-0.80
55	BRIGHAM YOUNG	-1.02	77	NEBRASKA	-1.43
24	BRITISH COLUMBIA	-0.05	62	NEW MEXICO	-1.19
65	BROWN	-1.27	17	NEW YORK	0.16
3	CALIFORNIA, BERKELEY	1.34	15	NORTH CAROLINA	0.25
46	CALIFORNIA, DAVIS	-0.73	32	NORTH CAROLINA STATE	-0.30
54	CALIFORNIA, IRVINE	-0.97	30	NORTHWESTERN	-0.26
7	CALIFORNIA, LOS ANGELES	0.89	52	NOTRE DAME	-0.94
98	CALIFORNIA, RIVERSIDE	-1.72	87	OHIO	-1.61
41	CALIFORNIA, SAN DIEGO	-0.64	23	OHIO STATE	-0.01
68	CALIFORNIA, SANTA BARBARA	-1.35	57	OKLAHOMA	-1.10
101	CASE WESTERN RESERVE	-1.83	95	OKLAHOMA STATE	-1.64
18	CHICAGO	0.13	91	OREGON	-1.63
45	CINCINNATI	-0.73	21	PENNSYLVANIA	0.04
61	COLORADO	-1.18	13	PENNSYLVANIA STATE	0.43
86	COLORADO STATE	-1.60	28	PITTSBURGH	-0.18
9	COLUMBIA	0.81	16	PRINCETON	0.20
50	CONNECTICUT	-0.87	75	PURDUE	-1.43
8	CORNELL	0.88	104	QUEEN'S	-1.91
71	DARTMOUTH	-1.39	76	RICE	-1.43
103	DELAWARE	-1.88	85	ROCHESTER	-1.56
20	DUKE	0.09	29	RUTGERS	-0.18
43	EMORY	-0.69	108	SASKATCHEWAN	-2.06
36	FLORIDA	-0.46	69	SOUTH CAROLINA	-1.35
82	FLORIDA STATE	-1.52	39	SOUTHERN CALIFORNIA	-0.53
84	GEORGE WASHINGTON	-1.55	79	SOUTHERN ILLINOIS	-1.50
58	GEORGETOWN	-1.11	99	SUNY-ALBANY	-1.76
31	GEORGIA	-0.30	56	SUNY-BUFFALO	-1.03
100	GEORGIA TECH	-1.82	109	SUNY-STONY BROOK	-2.09
113	GUELPH	-2.99	89	SYRACUSE	-1.61
1	HARVARD	2.54	90	TEMPLE	-1.62
64	HAWAII	-1.27	53	TENNESSEE	-0.96
94	HOUSTON	-1.64	10	TEXAS	0.74
110	HOWARD	-2.20	34	TEXAS A&M	-0.39
78	ILLINOIS, CHICAGO	-1.47	59	TEXAS TECH	-1.16
6	ILLINOIS, URBANA	1.02	4	TORONTO	1.23
12	INDIANA	0.46	102	TULANE	-1.85
26	IOWA	-0.16	33	UTAH	-0.36
73	IOWA STATE	-1.42	42	VANDERBILT	-0.68
38	JOHNS HOPKINS	-0.47	25	VIRGINIA	-0.06
44	KANSAS	-0.70	96	VIRGINIA TECH	-1.70
107	KENT STATE	-2.02	14	WASHINGTON	0.41
51	KENTUCKY	-0.92	92	WASHINGTON STATE	-1.63
72	LAVAL	-1.40	35	WASHINGTON U.-ST. LOUIS	-0.46
74	LOUISIANA STATE	-1.42	112	WATERLOO	-2.36
81	LOUISVILLE	-1.52	67	WAYNE STATE	-1.34
106	MANITOBA	-2.00	80	WESTERN ONTARIO	-1.51
48	MARYLAND	-0.84	11	WISCONSIN	0.64
105	MASSACHUSETTS	-1.91	2	YALE	1.44
49	MCGILL	-0.87	93	YORK	-1.63
111	MCMASTER	-2.24			