

Unfortunately, it seems that the National Research Council [2002 Decadal Survey](#), which has recently been completed, neglects to provide a ranking of PhD programs comparable to those provided in 1992 and 1982. Instead, a series of essays about the challenges and opportunities offered by various sub-fields of physics have been published adding to the similar essays that are periodically published in Physics Today. As a consequence the physics community is left in the dark relative to the current priorities of the field especially if one assumes that they are changing somewhat relative to the priorities visible in the previous rankings. Without the guidance provided by the rankings, departments will presumably tend to drift, and will have no way to determine whether or not their status in the physics community is rising or falling.

In this situation, the best that can be done is to assume that the values of the academic physics community have not changed in the past decade and to rank the current physics departments relative to the values evident in the last NRC ranking.

We have seen that the NRC perceived quality of Physics PhD programs based on the period 1987-92 could be fit to within an average absolute discrepancy of 8.5% by a research profile formula of the form

$$Q = 1.04 + .266 \sqrt{N_{\text{sub}}} + .205 \sqrt{N_{\text{other}}} + .288 \sqrt{N_{\text{Nobel}}} + .318 \sqrt{N_{\text{NAS}}}$$

where N_{sub} is the number of faculty in the various areas of subatomic physics (Nuclear/Particle physics plus related areas) and N_{other} is the number of faculty in all other areas including astronomy.

The average discrepancy of 8.5% must be attributed to the quality of individual faculty as well as historical and geographical prejudices as well as some intrinsic randomness in the ratings.

Neglecting this relatively small discrepancy, it is interesting to ask what the current quality ratings should be, based on the values reflected in the 1987-92 ratings and on the current research profiles. To perform this exercise we have used the AIP directory of physics faculties for the 1999 academic year and determined the new perceived qualities using the above formula. The corresponding new rankings are shown below. The departments with a listed old rank and quality of "0" are the programs that were unrated in the NRC survey but are listed in the

1999 AIP directory of physics PhD programs.

It could be that some of the larger discrepancies between the "theoretical" quality given by the above formula and the actual NRC perceived qualities at that time could be due to a time lag between departmental changes in research profile and perceived quality. In this case, now ten years after the published ratings, the above formula could be an even more accurate predictor of a department's standing than it was in 1992.

new rank	new qual	name	old rank	quality
1	5.527	MIT	3.5	4.870
2	5.149	UC-Berkeley	3.5	4.870
3	4.942	Princeton	2.0	4.890
4	4.798	Cal-Tech	5.0	4.810
5	4.722	Harvard	1.0	4.910
6	4.674	Illinois	8.0	4.660
7	4.609	Chicago	7.0	4.690
8	4.527	Stanford	9.0	4.530
9	4.484	Cornell	6.0	4.750
10	4.435	Columbia	12.0	4.250
11	4.421	Texas	11.0	4.330
12	4.154	UCLA	15.0	4.180
13	4.141	Michigan	19.0	3.960
14	3.904	Wisconsin	21.0	3.790
15	3.900	Maryland	18.0	4.020
16	3.811	Yale	13.0	4.210
17	3.804	Michigan State	32.0	3.430
18	3.800	Washington	14.0	4.200
19	3.786	Rutgers	20.0	3.820
20	3.701	Ohio State	24.0	3.750
21	3.700	Purdue	31.0	3.440
22	3.645	Stony Brook	22.5	3.760
23	3.619	Minnesota	22.5	3.760
24	3.604	Florida	36.0	3.350
25	3.600	Colorado	38.0	3.300
26	3.502	UC-Irvine	33.5	3.370
27	3.426	Florida State	42.5	3.250
28	3.391	Massachusetts	64.0	2.970
29	3.336	Brown	26.5	3.600
30	3.297	Iowa State	49.5	3.170
31	3.289	Boston U.	39.0	3.280
32	3.187	UCSD	16.0	4.100
33	3.185	Tennessee	72.0	2.830
34	3.171	Indiana	33.5	3.370
35	3.154	Pittsburgh	40.0	3.270
36	3.143	Texas A&M	47.5	3.220
37	3.131	Arizona	45.5	3.230
38	3.131	Notre Dame	56.0	3.060

39	3.042	Penn State	55.0	3.080
40	3.016	Carnegie Mellon	28.0	3.560
41	3.006	Delaware	74.0	2.760
42	2.996	NYU	53.5	3.140
43	2.989	Johns Hopkins	29.0	3.510
44	2.969	William & Mary	63.0	3.000
45	2.968	NC State	51.0	3.160
46	2.966	Pennsylvania	17.0	4.090
47	2.948	Rochester	26.5	3.600
48	2.947	Iowa	73.0	2.790
49	2.942	Virginia	45.5	3.230
50	2.941	UNC	53.5	3.140
51	2.941	UCSB	10.0	4.430
52	2.936	Arizona State	70.0	2.870
53	2.931	LSU	79.5	2.640
54	2.918	Illinois at Chicago	87.5	2.560
55	2.871	Kentucky	91.5	2.480
56	2.857	Case Western	65.0	2.960
57	2.818	New Hampshire	96.0	2.410
58	2.818	Northwestern	37.0	3.310
59	2.802	Washington U	52.0	3.150
60	2.800	Connecticut	101.5	2.330
61	2.795	Vanderbilt	58.0	3.040
62	2.794	Northeastern	66.0	2.910
63	2.784	UC-Davis	67.0	2.890
64	2.757	Oklahoma	95.0	2.420
65	2.757	Houston	61.5	3.020
66	2.753	New Mexico	0.0	0.000
67	2.753	Cincinnati	101.5	2.330
68	2.746	Southern Cal	49.5	3.170
69	2.740	Wayne State	0.0	0.000
70	2.740	Kansas	93.0	2.460
71	2.731	Mass-Lowell	125.0	1.920
72	2.730	CCNY	35.0	3.360
73	2.721	Syracuse	58.0	3.040
74	2.721	Duke Univ	42.5	3.250
75	2.713	South Carolina	85.5	2.580
76	2.712	Oregon	60.0	3.030
77	2.704	Ohio	83.5	2.600
78	2.704	Utah	58.0	3.040
79	2.686	Georgia	75.0	2.730
80	2.661	Rensselaer Poly	68.5	2.880
81	2.651	VPI	71.0	2.860
82	2.649	Brigham Young	110.0	2.210
83	2.642	Georgia Tech	61.5	3.020
84	2.634	Nebraska	79.5	2.640
85	2.634	Kansas State	101.5	2.330
86	2.617	Old Dominion	132.0	1.700
87	2.540	Alabama	120.0	2.080
88	2.540	Hawaii	82.0	2.610
89	2.532	UC-Riverside	68.5	2.880
90	2.520	Brandeis	42.5	3.250

91	2.489	Colorado State	104.5	2.300
92	2.486	Drexel	81.0	2.620
93	2.486	Rice	42.5	3.250
94	2.483	Auburn	128.0	1.880
95	2.475	Kent State	78.0	2.650
96	2.475	Brooklyn College	126.0	1.910
97	2.468	North Texas	104.5	2.300
98	2.456	UCSC	47.5	3.220
99	2.446	UT Dallas	91.5	2.480
100	2.444	Central Florida	0.0	0.000
101	2.432	SUNY-Buffalo	108.0	2.240
102	2.426	Florida International	0.0	0.000
103	2.411	George Washington	140.0	1.450
104	2.383	Tufts	77.0	2.660
105	2.377	U Texas, Arlington	117.0	2.110
106	2.373	U Alabama, Huntsville	113.5	2.130
107	2.361	New Mexico State	111.0	2.190
108	2.353	Hampton	0.0	0.000
109	2.349	Washington State	118.5	2.100
110	2.348	Utah State	0.0	0.000
111	2.348	Miami	122.0	2.030
112	2.348	Dartmouth	83.5	2.600
113	2.348	SUNY-Albany	85.5	2.580
114	2.348	Temple	94.0	2.430
115	2.343	Wisconsin-Milw	90.0	2.490
116	2.336	Oklahoma State	121.0	2.070
117	2.324	Lehigh	98.0	2.390
118	2.324	Michigan Tech	139.0	1.470
119	2.321	Montana State	106.0	2.270
120	2.317	Oregon State	76.0	2.690
121	2.314	Texas Tech.	118.5	2.100
122	2.313	Clemson Univ	0.0	0.000
123	2.289	New Jersey Tech	0.0	0.000
124	2.265	Missouri-Rolla	123.5	2.000
125	2.255	Western Michigan	0.0	0.000
126	2.255	Mississippi State	0.0	0.000
127	2.253	Illinois Tech	87.5	2.560
128	2.239	Rutgers-Newark	0.0	0.000
129	2.217	Mass-North Dartmouth	0.0	0.000
130	2.213	Howard	134.5	1.600
131	2.213	Arkansas	115.5	2.120
132	2.186	West Virginia	0.0	0.000
133	2.184	Col Sch of Mines	107.0	2.250
134	2.180	Rhode Island	129.0	1.850
135	2.179	Georgia State	0.0	0.000
136	2.179	U Alabama, Birmingham	127.0	1.900
137	2.169	Rockefeller	30.0	3.460
138	2.158	Air Force Tech	0.0	0.000
139	2.155	Tulane	115.5	2.120
140	2.155	Louisville	0.0	0.000
141	2.155	Emory	0.0	0.000
142	2.154	Denver	133.0	1.610

143	2.153	Mississippi	141.0	1.420
144	2.152	Boston College	131.0	1.800
145	2.129	Maryland-Baltimore Co	0.0	0.000
146	2.129	IUPUI	0.0	0.000
147	2.129	Alaska	89.0	2.500
148	2.096	Idaho	0.0	0.000
149	2.048	Nevada-Las Vegas	0.0	0.000
150	2.048	Maine	112.0	2.180
151	2.034	Wake Forest	0.0	0.000
152	2.027	Toledo	0.0	0.000
153	2.021	Stevens Tech	109.0	2.230
154	2.019	East Carolina	0.0	0.000
155	2.019	Wyoming	0.0	0.000
156	2.006	Catholic	101.5	2.330
157	1.989	New Mexico Tech.	136.0	1.570
158	1.989	Missouri-Kansas City	0.0	0.000
159	1.983	Missouri-Columbia	99.0	2.380
160	1.962	Queens College	0.0	0.000
161	1.962	Baylor	145.0	1.130
162	1.958	Florida Atlantic Univ.	0.0	0.000
163	1.958	Missouri-St. Louis	0.0	0.000
164	1.958	Nevada-Reno	142.0	1.310
165	1.914	Clark	130.0	1.820
166	1.899	Southern Meth	0.0	0.000
167	1.852	Wesleyan	0.0	0.000
168	1.811	Worcester Poly	137.5	1.480
169	1.783	Alabama A&M	0.0	0.000
170	1.692	Florida Inst. of Tech	147.0	0.460
171	1.659	Clarkson	113.5	2.130
172	1.659	North Dakota	0.0	0.000
173	1.623	Portland State	0.0	0.000
174	1.586	Texas Christian	146.0	0.670
175	1.454	Bryn Mawr College	137.5	1.480

[return to index](#)