

WebPanel 1. How individual ecologists influence research priorities

Individual scientists funded by the National Science Foundation (NSF) – which was designed with the intent of isolating science from political oversight – enjoy considerable freedom in selecting research priorities; those who receive funding from agencies and foundations more focused on applied science are often given less autonomy in selecting research projects (Appel 2000). This is not to say, however, that scientists funded by organizations with missions to fund application-driven science are powerless when it comes to selecting research projects. Public administration research suggests that bureaucrats necessarily have considerable discretion when it comes to administering the missions they are charged with carrying out (Shapiro 1983; Sowa and Selden 2003). This “administrative discretion”, as it is termed, is particularly important to science management because the people closest to the research – the scientists themselves – have specialized knowledge that is inaccessible to those higher up in their funding agencies and organizations. Because distributing money to scientific projects requires sophisticated understanding of cutting-edge science, science managers rely heavily on scientists when evaluating the merits of research priorities (Guston 1996).

In both NSF-model basic science and in more applied settings, individual scientists influence their funding organizations and the other institutions of science and thereby influence larger scale science priorities. They do so, for example, by serving on advisory panels for science funders, serving as grant and publication reviewers, evaluating employment and promotion applications, and mentoring and evaluating students. Scientists also frequently serve as journal editors and funding agency program managers, where they have a considerable say in shaping their disciplines (Rip 1985).

Scholarship on the history of ecology bears out the influence that individuals can have on ecological research trajectories in labs, departments, scientific societies, and funding organizations (Hagen 1992; Mitman 1992; Worster 1994; Kingsland 1995; Barbour 2003; Cooper 2003; Kingsland 2005). In these histories, individual scientists’ influence over research agendas derives not just from the insightfulness and lucidity of those scientists’ ideas but also from their roles in allocating resources within departments, influencing hiring and tenure decisions in academic departments, advising and churning out like-minded graduate students, advising or serving as peer reviewers for journals and funding bodies, and via other social mechanisms.

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WebTable 1. Participant factor loadings; significant loadings are highlighted

Participant #	Factor 1	Factor 2	Factor 3	Factor 4	Participant #	Factor 1	Factor 2	Factor 3	Factor 4
1	0.07533	0.60874	0.30127	0.04363	45	0.35364	0.40206	0.24477	0.21167
2	-0.0875	0.14896	0.76938	-0.03439	46	0.24377	0.60064	0.04457	0.037
3	0.46850	0.20355	0.21904	0.34338	47	0.31038	0.00065	0.23321	0.11311
4	0.65275	0.09604	0.05882	-0.24707	48	0.61916	0.25114	0.3065	-0.0649
5	-0.02747	0.16484	-0.17454	0.51032	49	0.43532	0.28789	0.28314	0.23675
6	0.56809	0.3381	0.18856	0.39226	50	0.31674	0.43499	0.33754	0.4558
7	0.53061	-0.00307	-0.1684	0.3221	51	0.57700	0.19593	-0.01366	0.19209
8	0.36561	0.05348	0.09002	-0.03076	52	-0.02661	-0.31288	-0.01166	0.48277
9	0.62722	0.15451	0.05519	0.00162	53	0.48973	0.55748	-0.06192	0.29498
10	0.32824	0.62912	-0.01816	-0.40839	54	0.2711	0.51142	0.19285	0.05733
11	-0.09237	0.64310	0.32432	0.13097	55	0.05782	0.03772	0.1692	0.58613
12	0.54475	0.28842	0.02975	0.36481	56	0.08018	0.80932	0.0972	0.06101
13	0.27437	-0.21014	0.04226	0.39566	57	0.2119	0.33975	0.40443	-0.06328
14	0.30696	0.44423	-0.0636	0.48709	58	0.66160	0.25778	-0.32206	0.05724
15	0.47157	0.42347	0.2552	0.03426	59	0.00737	0.3805	0.54295	0.42028
16	0.36945	0.12701	0.0472	0.44448	60	0.08913	0.33738	-0.16964	0.56415
17	0.55820	0.30481	0.15452	0.42762	61	0.60043	-0.15449	-0.10263	0.40402
18	0.44916	0.36318	-0.40777	0.41181	62	0.2592	0.25371	0.53447	0.43302
19	0.06592	0.62642	0.11641	0.05767	63	0.22393	0.68493	0.05518	0.03454
20	0.37801	0.35013	-0.10093	0.48242	64	0.18788	0.23923	0.15339	0.51084
21	0.27563	0.28918	0.29604	0.49604	65	0.09811	0.52163	0.03587	0.3434
22	-0.04116	0.21781	0.09382	0.46526	66	0.24638	0.64813	-0.10389	0.15829
23	-0.14459	0.48916	0.28921	0.07333	67	0.15303	0.53374	-0.15081	0.21717
24	0.31739	0.13513	0.19307	0.59184	68	0.22752	0.38700	0.07301	0.12555
25	0.35181	0.62332	0.04182	0.14098	69	0.43898	0.09906	0.37584	0.38699
26	0.12741	0.20256	0.73690	-0.12611	70	0.21837	0.58629	-0.18666	0.38234
27	0.35305	0.59692	0.11168	-0.06067	71	0.55611	0.24141	-0.09129	0.2574
28	0.41539	0.57602	0.04043	0.1563	72	0.21433	0.07195	0.35005	0.40151
29	0.3415	-0.08363	0.59529	0.05849	73	0.26569	0.0597	0.0242	0.71848
30	0.13122	0.66505	0.22917	0.01139	74	0.25246	0.54792	-0.25478	0.37619
31	0.60930	0.14629	0.20749	0.11902	75	-0.07556	0.50456	0.36661	0.47789
32	0.23254	0.09476	0.21793	0.45501	76	0.26125	0.60232	0.02446	0.40823
33	0.37504	0.53599	0.11609	0.15773	77	0.23717	0.51393	0.1634	0.43192
34	0.287	-0.1292	0.4102	0.27002	78	0.28277	0.63664	0.15217	0.18565
35	0.62188	0.42018	-0.03903	0.09526	79	0.17199	0.66196	-0.09725	0.25599
36	0.14394	0.44022	0.15276	0.39112	80	-0.05603	0.37366	0.66359	0.01681
37	0.06414	0.24435	-0.31099	0.52153	81	-0.08295	0.62049	0.32694	-0.00524
38	0.47321	0.56028	-0.04537	0.20164	82	0.44898	0.62492	0.23586	0.17087
39	0.19365	0.14573	0.80223	0.01339	83	-0.37489	-0.06267	0.63278	0.23838
40	0.58489	0.14808	0.28531	0.24338	84	0.69682	0.25504	-0.09891	0.25188
41	0.51641	-0.04058	0.41903	0.07521	85	-0.15812	0.65850	0.11863	0.48334
42	0.30032	0.17768	0.26369	0.05317	86	0.43811	0.35408	0.18453	0.36763
43	0.65031	0.24826	0.07477	0.29809	87	0.42956	0.31262	0.39743	0.40913
44	0.55749	0.38556	-0.09236	0.25597					