Faculty Workload and Productivity: Ethnic and Gender Disparities

by Henry L. Allen

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The ongoing debate over affirmative action reflects intense feelings about the presence and productivity of women and minority faculty in higher education.[1] Supporters of affirmative action, seeing campuses dominated by white males, lobby for diversification. Opponents of "quotas" may ask if the newcomers can "measure up" to traditional measures of merit and professional competence, or may question their ideological predilections.[2] Accusations of reverse discrimination accompany increased competition for scarce jobs.

Affirmative action was neither designed to deal with the structural impediments to academic productivity, nor to overcome informal resistance to minority faculty. The policy has not neutralized the power of incumbents—traditional hierarchies and sponsorship patterns remained intact. Affirmative action has not ended organizational inertia or eliminated qualitative differences in the academic and professional backgrounds of minority faculty. The policy, based on an unstable confluence of civic activism, moral persuasion, legal compliance, and political support, has remained at the mercy of powerful gatekeepers.[3]

Affirmative action has often produced more rhetoric than reality. Studies, including the survey discussed here, report continued disparities in the professional experiences and accomplishments of faculty, by gender and ethnicity.[4] Males, these studies show, are more likely to be tenured, to hold higher academic rank, to publish more frequently, and to spend more time on research. Minorities are disproportionately located in teaching institutions and concentrated in certain disciplines.[5]

Given the shortcomings of affirmative action policies and the maldistribution of minority and women faculty members, differences in workload and productivity between groups of faculty members come as no surprise. But the source of the disparities remains unclear.[6] A satisfactory discussion of workload and productivity requires a *theory* of the structure and dynamics of academic organizations—their components, processes, and systemic interrelationships. Productivity does not occur in a social or organizational vacuum; it is affected by interpersonal ties, authority relations, and cultural and ideological factors.[7] Nor is productivity uniform or unidimensional across academic disciplines or organizations. Similar initial conditions and organizational

processes may generate different outcomes.[8] Conversely, divergent social structures and processes may generate identical results.[9] Faculty workload and productivity are thus a function of organizational context.[10]

Universities are also information-processing organizations that create, legitimate, and disseminate expertise among constituencies with differing goals and expectations.[11] The need for faculty members to research and publish for a differentiated external market also affects workload and productivity.[12]

Unfortunately, most studies determine productivity differences between groups by aggregating the traits of individual faculty members. These studies fail to control for extraneous effects. Few surveys provide evidence of the cohesive, sustained, and recurrent patterns of interaction implied in the study of a group, or exhibit an understanding of the patterns of group formation and function in different types of organizations.[13] Majority and minority relations are also implicated, since it is unlikely that the intangible aspects of these relations would be the same.[14]

Surveys of individuals thus may not explain the behavior of social groups. Nor may survey research be the best method for measuring productivity differences *between* individuals or groups.[15] Using surveys with inadequate theoretical substance to compare groups by race and gender may lead to attributional errors and to conceptual flaws.[16] The conceptual schemata must correspond to the methodological techniques utilized, and the studied phenomena must correspond to the numerical system used to measure them.[17] Even if surveys avoid these pitfalls, statisticians must offer more sophisticated analyses of their findings.[18] Surveys, in short, may distract us from formulating theories of behavior in academic organizations that may explain, not just note, differences in productivity.[19]

What differences exist in the work experiences of majority and minority faculty? Acknowledging the theoretical limitations, we evaluate the concepts of workload and productivity, and then examine measures of these concepts by ethnicity used in the National Study of Postsecondary Faculty (NSOPF-93).[20] We then discuss the implications of our findings, and key theoretical and methodological issues.

CONCEPTUAL AND MEASUREMENT ISSUES

The neglect of conceptual and measurement issues in the workload and productivity debate results in invalid policies. Few discussants sufficiently clarify their theoretical presuppositions about motivations, behavior, and processes to permit cumulative research. Reductionism reigns; micro-level and macro-level concerns are confounded, and ecological forces that interact with academic careers go unmeasured.[21] Surveys measure the personal and professional traits of professors, but ignore qualitative differences in complex organizations and across academic careers, not to mention familial, kinship, school, political, and economic networks.[22]

The population dynamics, occupational structures, and market phenomena of the larger social system affect universities. In turn, cultural, professional, and organizational norms affect the careers of faculty members.[23] Understanding the structure and dynamics of career patterns requires *scientific* knowledge of the operation of academic institutions and their components.[24] A more loosely coupled educational organization, for example, may reduce workload and productivity—net individual aspirations, motivation, and capabilities.[25] The faculty recruitment process is prone to error. No optimizer matches the predilections of a potential faculty member to institutional norms, and the potential for mismatches increases as organizations change their mission and reward structures.[26]

The field of higher education needs theories of its domain—extant literature neglects multivariate, multidimensional, and longitudinal complications, and ignores the potential of mathematical modeling for delineating the interactions between external constituencies and internal bureaucracies and academic communities.[27] We cannot formulate and test theories without uniform organizing concepts, definitions, and methodological assumptions.[28] An inability to compare studies stifles attempts to accumulate knowledge about the parameters and structural differentiation of academic work. Once scholars conceptualize academic work structures and social processes—including hierarchical models of social organization, invisible colleges, professions, academic disciplines or societies, and the academic market-

place—they may measure the impact of organizations and associated technologies of learning.[29] Current measures of workload and productivity—even if convenient for administrative purposes—probably understate both concepts.

Workload is a composite of all professional tasks—intra- and inter-organizational—performed by faculty: teaching or instructional activities, class preparation, research, administration, and public service. The bureaucratic and collegial structure of departments, divisions or schools, and administrative jurisdictions influence faculty workload: the size of the institution, the social composition of its student body, the distribution of rank, the mean size of departments, the distribution of academic majors, the distribution of instructional resources, the internal pecking order, and the nature of the subject matter. So may the array of academic disciplines—departmental-level "communities of practice"—where formal and informal links among faculty, students, and others are stochastic.[30]

It is difficult to decompose the effects of these factors without crude simplifications. Yet such mismeasurement routinely confounds empirical research. To correct this practice, theories must drive data collection—not vice versa. Studies of productivity must control for the effects of prestige and experience, as well as for institutions and disciplines, though prestige may be less important than the structural location or centrality of actors within social networks.[31]

How do social conditions affect the duties and expectations associated with each domain of faculty work? Professors mediate the theoretical, methodological, and empirical questions in their fields. They peruse the latest journals and texts, decide what to teach and how to teach it, and assess student learning. When choosing among instructional methods—lectures, discussions, presentations, experiments, modules—they must match the subject matter to student needs. But faculty rarely control the assignment of students to their classes and possess little diagnostic information on differences in classroom composition and student background characteristics, including prior learning history, intellectual interests, experiences, capacities, learning styles, reading and writing abilities, and logical aptitudes or competencies. They do not mechanistically match pedagogical strategies, communication techniques, and learning styles. Professors have little formal control over their students' lives; they cannot demand compliance, effort, or time management. Students may disregard attendance, stifle class participation, and refuse intellectual engagement. Despite these constraints, faculty are expected to motivate students and to act as academic role models. Teaching evaluations help to hold them accountable for learning outcomes—a tall order.

Determining the optimal level of work for class preparation, research, or service activities is even more problematic. This intangible nexus between the domains of faculty work is where qualitative and quantitative features merge. The faculty role involves many domains and affects many actors across many organizational levels. Faculty workload is a robust phenomenon, but it is traditionally measured by the length of the workweek or by distribution of faculty time. Disentangling the organizational linkages between faculty members, their departments, and queues of departments and institutions requires mastery of organizational theory.[32] Instructional workload, for example, must be disaggregated into its heuristic, diagnostic, preparatory, design (curriculum), pedagogical, supervisory (assessment), and innovative components. The same must be done for research workload, administrative workload, and public service workload before they are combined or weighted. Workload studies should specify symmetries and feedback loops across actors, organizational units, and levels before comparing measures.

Defining workload within a theory of academic organizations will permit progress in assessing *productivity*. Productivity is a composite measure of the efficiency and effectiveness of a faculty member in transforming inputs into desired outcomes across the key academic domains, expressed in units of time. The term implies a product—an optimal level of performance in teaching, research, and service—that is affected by as yet poorly understood aspects of organizational performance—intricate social networks within multiple organizational levels and the academic disciplines.[33]

Instructional productivity is ordinarily measured by credit hours, contact hours, or

course loads. Research productivity is usually measured by quantity of publications in national surveys. But the components of each type of productivity are rarely specified theoretically. Instructional productivity, for example, may be a function of classroom composition. Quality considerations are elusive. Often nefarious attributions of prestige may bias judgments or obfuscate competencies. Most productivity studies, for example, fail to differentiate "publishing" and "research." Publications may result from differential opportunity, not individual ability, given the stratification of higher education. Research productivity depends on the norms and rigors of disciplinary and professional communities. What one community reveres, another might consider inconsequential. Scholars must derive insights from organizational theory to measure how faculty make decisions across their domains of work, pursuant to measuring their effectiveness or productivity.

To summarize: Conceptual and measurement issues surround the determination of workload and productivity. Effective measures must be nested in theories or conceptual schemata. Blanket measures, in contrast, like nominal categories and untargeted policy prescriptions, are suspect. What do static measures—such as total hours in one's workweek, contact hours, or quantity of publications—actually explain? Why are these measures selected as the best indicators? What do faculty do to produce these outcomes? How well do comparable faculty members perform the tasks required to produce these measures across specific time dimensions?

Higher education shares some features with other industries while possessing some distinctive attributes.[34] Economists and sociologists—traditionally concerned about job differentiation within the division of labor, the organization of occupational groups, and social mobility within the occupational structure—have accorded limited attention to the strategic niche of academic organizations and their internal networks.[35] Academics, as the popular adage suggests, are more adept at studying jobs, occupations, organizations, and industries other than their own.[36] We await a definitive sociological explanation of how and why disciplinary and institutional differentiation affects the behavior and expectations of faculty members.[37] An accurate measure of workload and productivity requires a theory of academic institutions.[38] Imposing the intergroup dynamics of ethnicity and gender on these conceptual and measurement problems results in even more precarious inferences.

These caveats proffered, the next section presents the latest empirical findings on workload and productivity for minority faculty. The inferences refer to statistical distributions of phenotypic traits aggregated among individuals, not to the behavior of real groups or persons.[39]

ETHNIC DIFFERENCES

Disparities in socioeconomic status, educational attainment, and socialization typically translate into fewer opportunities for minority faculty members to enter the academic profession.[40] Once employed, these colleagues work in different, often less prestigious, types of institutions, have different disciplinary interests, interact in different social networks, and experience different mentorship patterns. This segregation poses formidable obstacles to professional success.[41]

The National Center for Education Statistics has completed two cross-sectional national surveys of the careers of postsecondary faculty.[42] The 1988 National Survey of Postsecondary Faculty (NSOPF-88) reported on a sample of 7,408 full- and part-time instructional faculty selected from a population universe of 11,013 eligible respondents. This sample represented an estimated 665,000 college and university professors. NSOPF-93, the source of most data reported here, surveyed a weighted sample of 31,354 respondents during 1993-94—it oversampled minority faculty—representing nearly 900,000 faculty. NSOPF-93, in contrast to NSOPF-88, included anyone designated as a faculty member, not just instructional faculty.

Faculty Composition

This analysis examines the impact of ethnicity on the academic careers of full-time faculty and instructional staff. We describe the distribution of faculty between institutions, among disciplines, and across ranks, note differences in these categories between majority and minority faculty members, alluding to gender disparities, and then enumerate differences by race and ethnicity in traditional mea-

sures of faculty workload and productivity.

First, an overview. American public postsecondary institutions employed 368,827 full-time faculty in 1992, about 70 percent of all full-time faculty members (Table 1). Community colleges (109,551) and public research universities (108,493) together accounted for nearly 41 percent of full-time professors. Research and doctoral universities together employed almost 42 percent of all full-time faculty (220,673). Comprehensive universities and colleges employed about 25 percent of all faculty (132,898).

A plurality of full-time faculty worked in the sciences—19 percent (101,681) taught in the natural sciences; another 15 percent (77,996) taught in the health sciences. Adding engineering (24,680) brought the total in the sciences to about 39 percent. The remaining program areas are listed in descending order: humanities (14 percent = 74,086; almost half in English and literature), social sciences (11 percent = 58,526), business (8 percent = 39,848), education (7 percent = 36,851), fine arts (6 percent = 31,682), other (5 percent = 27,466), occupationally specific programs (3 percent = 15,395), agriculture and home economics (2 percent = 11,466), communications (2 percent = 10,344), and law (1 percent = 7,337).

About 78 percent of full-time faculty were assistant professors or above: full professors, 31 percent; associate and assistant professors, almost 24 percent, each. Instructors and lecturers combined for 16 percent.

The Impact of Ethnicity

The 771,000 white faculty members (87 percent) dominated the academic profession in 1992.[43] But the profession also included 115,000 minority faculty members (13 percent): Blacks and Asians—about 5 percent each; Hispanics—about 3 percent, and American Indians—less than 1 percent.[44] Minority faculty members were disproportionately concentrated in specific types of colleges and universities (Table 1). Asian faculty were most evenly disbursed: higher concentrations in public and independent research universities, less representation in independent liberal arts and community colleges. Community colleges accommodated relatively high concentrations of American Indian, Black, and Hispanic faculty. Black faculty members were also concentrated in public comprehensive institutions, Hispanics at independent doctoral institutions, and American Indian faculty at public doctoral institutions.

Nor were minority faculty randomly distributed across academic disciplines or ranks (Table 1). American Indian faculty were concentrated in communications, education, business, mathematics, and sociology (descending order), and did not appear in law or computer sciences. Asian faculty were concentrated in engineering and the natural sciences—ratifying previous studies—and in health sciences, business, communications, and economics. They were virtually absent from law and education. Black and Hispanic faculty were more concentrated in occupational programs than other minority faculty. Blacks clustered in education, law, nursing, history, fine arts, and the social sciences; Hispanics in the foreign languages and the social sciences.

Male faculty outnumbered female faculty within all ethnic groups (Table 1). White faculty members showed the greatest gender discrepancy—men were more than twice as likely to be present across all types of colleges and universities—followed by Asians. Among both groups, men were more prevalent than women in all categories. Men and women were equally represented among American Indian faculty. Black and Hispanic faculty showed only modest disparities. Community colleges were the most egalitarian institutions. Independent liberal arts colleges and public comprehensive institutions come much closer to gender parity among whites than other four-year schools. Men were twice as prevalent at research and doctoral institutions, more than three times at independent doctoral and public research universities.

Only community colleges showed gender parity among Asian faculty. Males strongly predominated at independent and public research universities and at doctoral institutions. Asian women were barely present at independent comprehensive and liberal arts colleges. American Indian and Hispanic faculty showed similar gender distributions.

Female Black faculty were more prevalent in community colleges and in independent comprehensives. Public research universities and doctoral institutions showed near parity. Independent liberal arts colleges, followed by independent doctoral institutions, showed the largest gender gap among Black faculty. His-

TABLE 1

PERCENTAGE DISTRIBUTION OF FULL-TIME FACULTY AND STAFF WITH ANY INSTRUCTIONAL RESPONSIBILITIES, BY RACE/ETHNICITY, GENDER, TYPE AND CONTROL OF INSTITUTION, PROGRAM AREA, AND RANK, F ALL, 1992.

Type and Control of Institution, Program Area and Rank	Full-time Instructional Faculty and Staff		American Indian/ Alaskan Native		Asian/Pacific Islander		Black, Non-Hispanic		Hispanic		White, Non-Hispanic	
	Number	Percent	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
All institutions [a]	526,222	100	0.3	0.2	4.0	1.3	2.6	2.3	1.7	0.8	58.9	27.9
By Type and Control												
Public research	108,493	100	0.1	0.1	5.7	1.3	1.5	1.2	1.4	0.5	68.7	19.7
Independent research	32,350	100	0.2	- -	6.7	2.4	2.8	1.9	1.2	0.7	59.2	25.0
Public doctoral [b]	54,433	100	0.6	0.2	4.9	1.4	1.6	1.3	1.7	0.6	62.1	25.7
Independent doctoral [b]	25,937	100	0.1	0.1	5.1	1.4	2.9	1.2	2.3	1.0	66.5	19.4
Public comprehensive	96,350	100	0.2	0.3	4.1	1.0	4.9	3.9	1.8	0.8	55.5	27.5
Independent comprehensive	36,548	100	- -	0.1	2.5	0.9	1.4	1.6	1.0	0.6	60.5	31.3
Independent liberal arts	37,560	100	0.3	0.1	1.9	0.9	3.7	1.8	0.9	0.5	54.2	35.8
Public two-year	109,551	100	0.7	0.3	1.9	1.4	2.5	3.6	2.5	1.6	47.8	37.7
Other [c]	25,540	100	0.3	0.2	3.7	0.9	1.6	1.2	0.8	0.4	67.3	23.6
By Program Area												
Agriculture and home economics	11,466	100	- -	0.7	1.0	1.8	2.2	1.5	1.6	0.2	71.3	19.6
Business	39,848	100	0.6	0.3	4.0	0.8	1.9	2.0	0.9	0.4	62.3	26.6
Communications	10,344	100	0.9	0.3	4.3	1.2	2.8	2.8	1.6	- -	56.3	29.8
Education	36,851	100	0.7	0.3	0.5	1.1	3.9	5.1	0.9	2.4	43.9	41.2
Teacher education	12,429	100	0.6	0.2	0.3	1.0	2.0	4.6	0.1	0.7	40.6	49.8
Other education	24,422	100	0.8	0.3	0.7	1.1	4.8	5.4	1.3	3.2	45.6	36.9
Engineering	24,680	100	0.7	- -	15.6	1.3	2.1	0.6	2.8	0.2	73.0	3.8
Fine arts	31,682	100	0.3	0.2	1.2	1.6	3.8	1.8	2.1	0.3	60.4	28.3
Health sciences	77,996	100	0.1	0.1	4.0	2.0	2.0	3.2	1.3	0.7	43.1	43.5
First professional	36,854	100	0.2	- -	7.2	2.0	3.1	0.9	2.4	0.8	64.7	18.8
Nursing	20,931	100	- -	0.2	0.1	2.3	0.5	6.7	- -	0.9	0.9	88.3
Other health sciences	20,211	100	0.2	0.2	2.1	1.6	1.8	3.6	0.8	0.3	47.4	42.1
Humanities	74,086	100	0.3	0.1	1.3	1.9	2.1	2.0	2.0	2.0	53.5	34.8
English and literature	37,476	100	0.5	0.1	0.8	1.3	2.1	2.8	1.3	1.0	45.2	45.0
Foreign languages	13,684	100	- -	0.4	1.8	6.4	1.2	0.6	5.4	7.4	40.0	36.6
History	14,644	100	0.3	- -	1.8	0.4	3.0	2.2	1.2	0.4	70.6	20.0
Philosophy	8,283	100	0.2	- -	1.5	0.3	1.6	0.2	1.1	0.3	82.5	12.3
Law	7,337	100	- -	- -	0.2	0.7	5.8	2.9	1.3	1.1	57.8	30.0
Natural sciences	101,681	100	0.2	0.1	7.2	0.9	2.5	0.9	1.5	0.3	69.0	17.4
Biological sciences	34,303	100	0.3	0.1	4.3	0.9	2.9	1.2	1.0	0.5	68.4	20.5
Physical sciences	28,299	100	- -	- -	7.3	0.8	2.0	0.3	1.9	0.1	77.4	10.1
Mathematics	25,407	100	0.5	0.4	9.2	1.2	2.6	1.0	1.7	0.6	61.7	21.2
Computer sciences	13,671	100	- -	- -	10.4	0.8	2.1	1.3	1.7	0.1	66.5	17.2
Social sciences	58,526	100	0.3	0.2	2.6	0.7	2.9	2.9	1.9	0.8	65.4	22.3
Economics	9,881	100	- -	- -	7.9	1.6	3.8	0.3	3.0	1.1	70.4	11.9
Political sciences	9,434	100	0.1	- -	1.1	0.2	3.4	1.9	2.6	0.4	75.7	14.5

TABLE 1 (CONTINUED)

PERCENTAGE DISTRIBUTION OF FULL-TIME FACULTY AND STAFF WITH ANY INSTRUCTIONAL RESPONSIBILITIES, BY RACE/ETHNICITY, GENDER, TYPE AND CONTROL OF INSTITUTION, PROGRAM AREA, AND RANK, F ALL, 1992.

Type and Control of Institution, Program Area and Rank	Full-time Instructional Faculty and Staff		American Indian/ Alaskan Native		Asian/Pacific Islander		Black, Non-Hispanic		Hispanic		White, Non-Hispanic	
	Number	Percent	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Psychology	17,692	100	0.1	0.2	1.1	0.3	2.1	3.9	1.5	0.8	58.0	31.8
Sociology	9,586	100	0.9	- -	1.4	0.8	2.7	3.2	2.3	0.5	68.2	20.1
Other social sciences	11,934	100	0.3	0.6	2.7	0.6	3.2	4.1	0.8	1.1	62.1	24.5
Occupationally specific programs	15,395	100	0.5	0.2	1.9	0.2	3.5	0.9	3.1	0.3	75.9	13.5
All other programs	27,466	100	- -	0.1	2.3	0.6	2.8	3.3	2.0	0.7	58.1	30.1
By Academic Rank												
Not applicable	16,820	100	0.9	0.3	2.0	1.6	1.2	1.3	1.9	0.9	51.6	38.3
Full professor	161,252	100	0.2	0.1	4.5	0.4	2.1	1.1	1.4	0.3	75.7	14.3
Associate professor	123,471	100	0.3	0.1	3.6	1.0	2.9	2.1	1.3	0.8	63.1	24.7
Assistant professor	123,285	100	0.2	0.2	5.0	2.1	2.8	3.0	2.0	1.2	47.5	36.0
Instructor	72,986	100	0.7	0.3	2.2	1.7	3.1	3.8	2.2	1.1	44.1	40.8
Lecturer	11,655	100	- -	1.1	3.9	2.6	2.6	3.7	2.0	1.1	29.6	53.4
Other ranks	16,753	100	0.2	0.1	4.2	1.7	4.2	4.6	2.2	1.8	41.5	39.5

- - Too few cases for a reliable estimate.

[a] *All accredited nonproprietary U.S. postsecondary institutions that grant a 2-year (A.A.) or higher degree and whose accreditation at the higher education level is recognized by the U.S. Department of Education.*

[b] *Includes institutions classified by the Carnegie Foundation as specialized medical schools.*

[c] *Public liberal arts, independent 2-year, and religious and other specialized institutions, except medical.*

NOTE: Details may not add to total because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 National Study of Postsecondary Faculty.

panic women were virtually absent from research and public doctoral universities. Hispanic male faculty were more numerous at community colleges and independent doctoral institutions—the two types of institutions with the largest Hispanic female representation.

NSOPF-93 revealed the meager presence of American Indian faculty, though, again, males dominated at every type of school except independent comprehensives. American Indian female faculty made modest inroads at public comprehensive institutions and community colleges, followed by doctoral universities, but were absent from independent research universities.

Save for Blacks, female faculty were thus in the minority in every ethnic category and in most types of institutions, perhaps a result of different recruitment practices. In any case, minority men and women faculty faced different structures of opportunities, and organizational and professional experiences.

Minority male and female faculty also showed different concentrations among the academic disciplines (Table 1). Women appeared less frequently in almost every academic field, save traditionally female-dominated subjects including education, nursing, and home economics. American Indian female faculty appeared most frequently in agricul-

ture and home economics, followed closely by the social sciences. Asian and Hispanic women appeared most often in foreign languages and nursing; education followed nursing for Black female faculty.

Among males, American Indians were concentrated in communications and sociology, followed by education, engineering, and business; Asians in engineering, computer science, mathematics, and economics; and Blacks in law, education, economics, and political science. All proportions were small compared to majority white faculty.

Many academic disciplines showed low concentrations of female faculty. American Indian females were absent from engineering, history, philosophy, law, the physical sciences, computer sciences, economics, political sciences, and sociology. Psychology, sociology, and philosophy attracted few Asian females. Black females were few in philosophy, the physical sciences, economics, and engineering. Hispanic women were nonexistent in communications and scarce in computer sciences, physical and biological sciences, engineering, philosophy, and most social sciences. No recruitment technique, including affirmative action, changed the racial composition of these fields.

Minority males, likewise, went unrepresented in some disciplines and fields: American Indians in nursing and home economics, foreign languages, law, the physical sciences, computer sciences, and economics; Asian males in nursing, law, education, and English; Black men in nursing, foreign languages, philosophy, and business; Hispanic men in nursing, business, and education.

The gender distribution of white faculty among academic disciplines showed greater variation, but white males dominated almost everywhere. Philosophy, followed by the physical sciences and psychology, showed the highest proportion of white male faculty; nursing, the lowest. White women dominated nursing and education, but were seldom found in engineering, the physical sciences, and economics.

By academic rank, minority faculty in every ethnic category showed only small representation. Asian faculty were dispersed across all ranks; their modal rank was assistant professor. American Indian faculty were concentrated in the lowest ranks, if they held any rank at all. So were Black and Hispanic faculty; the modal rank for both groups was the amorphous "other ranks" category. White faculty members predominated at the senior academic ranks—nearly 90 percent of full professors, 88 percent of associate professors, and 84 percent of assistant professors. Women faculty, like minority faculty, were disproportionately represented in the lower ranks. But women showed greater progress into the senior ranks than any ethnic category.

Minority and women faculty worked in different types of institutions and had different professional and disciplinary affiliations. Their academic careers were distinguished by ethnic origin *within* minority status as well as *from* majority white faculty (Table 1). Different organizational conditions may affect workload and productivity. We should not expect either variable to be proximate or to conform to a single, uniform standard, given the differences in the distributions of minority and majority faculty among institutions, fields, and ranks. Ethnic comparisons require corrections for biased distributions and controls for intra- and interorganizational effects, including variables such as "years of professional experience." Depending on the criteria used and the expertise of the investigator, institutions within a category can vary significantly in both their patterns of organizational development and their reward structures.[45]

The effectiveness of affirmative action policies, used ostensibly to recruit minority faculty into higher education during the last few decades, thus becomes suspect, though NSOPF-93 data does not permit a definitive analysis. The entry of minorities into most disciplines will likely remain a pioneering, if not precarious, venture. Low concentrations of minority faculty affect visibility, mobility, mentorship, and sponsorship patterns. Reverse discrimination does not yet threaten this organizational or professional hegemony.

Faculty Workload

Asian faculty, according to NSOPF-93, were most likely to report research as their principal activity (23 percent vs. 11 percent for whites, 9 percent for Hispanics, 8 percent for American Indians, and 4 percent for Blacks).[46] Among non-whites, Black faculty were most likely to identify administration as their principal activity; Asian faculty, least likely. American Indian faculty were most likely to list

teaching as their principal activity (nearly 75 percent).

Table 2 compares time management patterns of faculty members, measured by the mean number of hours devoted to professional activities inside and outside employing institutions, categorized by ethnic status. The workweek is the sum of the mean hours in each activity.

TABLE 2

HOURS WORKED PER WEEK BY TYPE OF ACTIVITY

	AI	AS	AA	HA	WA
Type of Activity					
Paid at institution	25	37	26	28	32
Unpaid at institution	4	6	6	5	4
Paid outside institution	12	5	9	10	9
Pro bono outside institution	3	2	2	2	2
TOTAL HOURS PER WEEK	44	50	43	45	47

AI = American Indian
AS = Asian-American
AA = African-American
HA = Hispanic-American
WA = White American

** Figures have been rounded off.*

Standard Workweek

NSOPF-93 permits the differentiation of total hours in the faculty workweek by ethnic status. Ethnic distribution may interact with organizational conditions and disciplinary locale to affect decisions faculty made about the hours of service given to their employers each week. Asian faculty worked the longest academic workweek—about 50 hours. Next came white faculty, 47 hours, followed by Hispanic faculty, 46 hours, and Black and American Indian faculty, 43 hours each.

Asian faculty spent 37 hours hours per week in paid activities at their employing institution; whites spent 32 hours, Hispanics, 28 hours, Blacks, almost 26 hours, and American Indians, 25 hours. Asians, Blacks, and Hispanics worked at least five more hours at unpaid activities at their employing institutions. Asian faculty also spent the most time at paid activities outside their employing institutions—nearly 12 hours per week—and devoted slightly more time to pro bono activities than other groups.

NSOPF-93 workload data revealed several gender disparities (Table 3). Male professors worked longer workweeks than female professors, regardless of ethnic status. White faculty showed a nine-hour gap; Asians and Hispanics, eight hours each, American Indians, five hours, and Blacks, four hours.

The nearly 51-hour academic workweek for Asian males led all ethnic categories. White males worked 49 hours; Hispanic men worked 48. American Indian and Black male faculty averaged 45 hours per week. Among women faculty, Asians had the longest workweek (42 hours), followed by Blacks (41 hours) and by American Indians and white women (40 hours).

Within each ethnic category, males spent more time per week in paid activities at their employing institutions. Asian faculty again showed the largest gender gap, about 10 hours; then followed Hispanic and white male faculty, six and eight hours per week, respectively. The gap was miniscule for American Indian faculty and nonexistent for Black faculty. Asian females, in contrast, slightly edged males in average hours given to paid external activities; the gap favored Black male faculty by four hours.

Historical, cultural, ecological, organizational, and social factors undoubtedly affected patterns of time allocation to professional duties among the ethnic groups (Table 4). American Indian faculty devoted the highest percentage of their time to teaching, and gave twice as much time to consulting as any other ethnic group. Black faculty were more engaged in administrative tasks and allocated a higher percentage of their time to service. Asian faculty assigned the highest proportion of their time to research. No group gave much time to professional growth activities.

The concentration of Asian faculty in science and related disciplines may help to explain their high allocation of time to teaching and research (71 percent). Hispanic faculty

TABLE 3

GENDER DISTRIBUTION OF HOURS WORKED PER WEEK BY TYPE OF ACTIVITY

	American Indian		Asian-American		African-American		Hispanic-American		White American	
	M	F	M	F	M	F	M	F	M	F
Type of Activity										
Paid at institution	26	24	39	29	26	26	30	24	34	26
Unpaid at institution	4	4	6	5	6	5	6	5	4	4
Paid outside institution	12	10	4	6	11	7	10	9	9	8
Pro bono outside institution	3	2	2	2	2	3	2	2	2	2
TOTAL HOURS PER WEEK	45	40	51	42	45	41	48	40	49	40

M = Male faculty
F = Female faculty

** Figures have been rounded off.*

followed (69 percent); then came American Indians (66 percent) and white faculty (64 percent). Black faculty assigned 34 percent of their time to external role functions, including administration, consulting, and service. Asian faculty gave just 24 percent of their time to these functions.

Gender differences were evident in time distribution patterns (Table 5). Women from every ethnic group, except American Indian faculty, devoted more time to teaching. Differences by gender were negligible for Asian professors, but Hispanic women showed a 10 percent difference. Female faculty devoted less time to research than men in all categories, a common finding in prior studies. Asian women showed the greatest research commitment. Black women invested the most time in administration. American Indian women were the most involved in consulting, and women of all ethnic groups allotted about two hours per week to service.

Minority and majority faculty showed different distributions across disciplines, institutions, and ranks in fall 1992. Interactions between ethnicity and the same three variables may help to explain divergent emphases within a common set of tasks. How many disparities in Tables 2 through 5 can be attributed to ethnicity and gender—as opposed to cognitive, personality, normative, organizational, or

TABLE 4

PERCENTAGE DISTRIBUTION OF TIME ALLOCATED FOR PROFESSIONAL TASKS

	ETHNIC STATUS				
	AI	AS	AA	HA	WA
Professional Task (% time allocated per item)					
Teaching	58	40	49	51	48
Research	8	31	10	18	18
Professional growth	5	5	6	6	5
Administration	11	9	14	8	12
Consulting	12	5	4	6	6
Service	8	10	16	11	10

AI = American Indian
AS = Asian-American
AA = African-American
HA = Hispanic-American
WA = White American

**Figures represent percentages that have been rounded off.*

TABLE 5

GENDER DISTRIBUTION OF FACULTY TIME ALLOCATED FOR PROFESSIONAL TASKS

	American Indian		Asian-American		African-American		Hispanic-American		White American	
	M	F	M	F	M	F	M	F	M	F
Professional Task (% time per allocated item)										
Teaching	59	57	40	41	46	53	47	57	45	53
Research	8	5	33	23	12	8	21	13	21	12
Professional growth	4	6	5	5	6	5	6	5	5	7
Administration	12	6	8	10	13	14	8	8	13	11
Consulting	10	16	4	10	3	5	7	3	7	5
Service	7	11	10	11	19	11	10	13	10	12

M = Male faculty
F = Female faculty

**Figures represent percentages that have been rounded off.*

individual decision-making factors—remains to be investigated through multivariate research.

Faculty Productivity

Workload designates *what* faculty members do; productivity refers to how *well* they fulfill their responsibilities. This section scrutinizes ethnic disparities in instructional and research productivity. NSOPF-93 found only minor differences in instructional productivity measured by course load and credit hours. The study did not control for class size, student level or composition, or instructional effectiveness. In contrast, the scholarly output of majority and minority professors—measured by the number of articles produced by faculty in the two-year period prior to NSOPF-93 and throughout their careers—showed sharply different patterns.

Instructional Productivity

NSOPF-93 showed nearly uniform instructional responsibilities among minority and majority faculty members, and only modest differences in assigned course loads, despite the differential impact of experience, organizations, and disciplines. Full-time, regular faculty averaged two credit bearing courses taught during fall 1992; this number varied little by ethnic group. The slightly lighter course loads shown by Asian faculty reflected the importance of research as the principal professional activity of members of this group. Black, Hispanic, and white faculty taught average course loads. American Indian faculty had the heaviest teaching loads.

The data revealed modest differences between men and women in the mean distribution of course loads. American Indian males had heaviest teaching loads; Asian men had the lightest course loads. Among Blacks, female faculty had the heavier course loads. Women averaged slightly *fewer* courses taught among Hispanic and white faculty. NSOPF-93 did not permit controls for statistical biases or unknown sampling errors: No data exist on class size, degree of instructional difficulty, level, or subject matter.

Research Productivity

Ethnic faculty showed greater differences in research productivity. Full-time regular faculty averaged just above two refereed publications and four presentations during the two-year period studied in NSOPF-93. Asian faculty showed the greatest productivity—more than three refereed publications—a finding consistent with their engagement in research, concentration in science and related disci-

plines, and location at research and doctoral institutions. White and Hispanic faculty members followed—two and one refereed publications, respectively. Black and American Indian faculty averaged less than one refereed publication. Asian and white faculty averaged at least three presentations or exhibitions during the same two-year period; the remaining groups averaged almost two presentations. NSOPF-93 did not control for subtle institutional or disciplinary effects that might have affected research productivity.

Full-time male faculty of all ethnic groups published three refereed articles for every article published by women (aggregated group means). Adding part-time faculty to the database reduced the ratio to two to one. American Indian faculty were again the exception—men and women showed equally low publication rates. Male faculty accounted for most of the productivity observed among Asian faculty—nearly a four to one ratio. Black, Hispanic, and white males showed nearly a two to one ratio. In contrast, across all ethnic groups, women were equally or more active than males in producing presentations, exhibits, and technical reports. Again, these findings do not control for organizational factors, the opportunity structure for publishing, and years of professional experience.

Data on career research productivity of ethnic faculty—based on the mean score for each type of publication or presentation—corroborated these patterns. Asian faculty led all others—18 refereed and five nonrefereed articles, over 15 presentations, four technical reports, and six exhibitions. White faculty also showed significant career achievements—12 refereed and nearly five nonrefereed articles, nearly 21 presentations, almost six technical reports, and 10 exhibitions. Black faculty averaged five refereed and four nonrefereed publications, and 15 exhibitions and presentations apiece. Hispanic faculty produced six refereed and two nonrefereed publications, along with 11 presentations and 14 exhibitions. American Indian faculty published the least—three refereed and two nonrefereed articles, but they averaged almost 12 presentations—two exhibits and 10 nonjuried creative works.

Career data showed differentials between the research productivity of men and women in every ethnic category.[47] Asian males averaged 22 refereed articles for every six for females. The male to female productivity ratio was 17 to three for white faculty, eight to three for Hispanic faculty, and eight to one for Black faculty. Only American Indian faculty approximated gender parity—about three refereed articles. Data for nonrefereed articles revealed a similar trend, but the differentials were smaller. Again, only American Indian faculty violated this pattern. Men also showed a greater combined number of presentations, exhibits, and technical reports; Asian women were the significant exception. But NSOPF-93 did not control for qualitative differences associated with age and experience—such as maturation effects and mentorship patterns—or for differences in career opportunities that might have enabled males to publish more frequently.

Implications

What implications can we derive from this data?

- Ethnic comparisons are risky since the work experiences of majority and minority faculty members are not completely comparable. Each group comes to postsecondary education with its own history and social resources and is concentrated in different institutional, professional, and disciplinary sectors.[48] Our knowledge about the conditions out of which majority and minority faculty operate is tentative. No one can evaluate all groups by the same standard without neutralizing all operative distinctions.

Researchers will continue to study the activities of faculty, and their data may serve as a tentative baseline or barometer on specified measures if heuristic concerns are predominant. Future findings promise greater reliability, but should not be used to formulate or verify policy.

- Workload and productivity differ more by institution and discipline than by ethnic status—professionalization makes the contours of faculty workload and productivity similar for all ethnic faculty. Faculty allocate their time in similar ways and have similar instructional duties per institution and rank. The relative uniformity of academic work among ethnic groups is a key finding.
- Structural advantages, including size, rank, and disciplinary location, give white faculty

members gatekeeper status over the academic opportunity structure and over social networks. These colleagues shape the norms, culture, symbols, and role expectations that sustain productivity and mobility.[49] Affirmative action has not, and could not, eradicate this dominance.

- Asian faculty show the highest research productivity, measured by the mean number of publications biennially and throughout their careers. But faculty members from all ethnic groups publish or present their expertise, even if not always refereed by academic peers.
- American Indian, Black, Hispanic, and female faculty need greater organizational support for their research. But enhancing the productivity of these groups also requires more knowledge about the determinants of research productivity.

Higher education must *know* more and *do* more about faculty to increase productivity. Knowledge, not budget reductions or mandated responsibilities, will improve outcomes. Task forces of faculty, administrators, students, governmental officials, philanthropists, and independent scholars should address the causes and consequences of academic productivity.

CONCLUSION

Practical, not theoretical, reasons drive the push to measure faculty workload and productivity.[50] But the extant literature typically neglects *organizational* effects or interactions and disconnects qualitative and quantitative interactions involving cognition, motivation, decisions, exchanges, communication, and opportunities—and the group processes that produce them.[51] The literature commands less serious consideration than research in organization and management science.

Cost pressures drive many campus administrators to reduce unit budgets, including faculty salaries. Jeremiads about faculty malfeasance or ineptitude in teaching undergraduates have instilled mistrust in the public regarding competencies and ethics.[52] Downsizing and restructuring in other economic sectors prompt public officials and media pundits to question academic norms and structures. Less money is available to sustain higher education. Politicians seem more willing to devote revenues to health care, criminal justice, and deficit reduction. Faculty must justify their existence and support, thus the need for assessing productivity. Adjusting faculty role priorities and performance may be inevitable.[53] The autonomy and welfare of the academic professions is at stake.

Most workload and productivity studies do not rigorously conceptualize the structural dynamics—informal norms, social capital, or cultural stimuli—that produce the reported findings.[54] These studies—usually cross-sectional statistical surveys—neglect social networks, exchanges, and decision frames affecting respondents and fail to link the individual, group, and organizational levels. They are based on poor concepts of measurement and lack the information required in a systems perspective.[55]

Using primitive studies invites haphazard policy recommendations and blanket prescriptions. Typical surveys of organizational traits include little information on the ecology or market segmentation of academic institutions.[56] More accurate insights require systematic formalization and simulations.[57] Policy decisions about faculty productivity are being formulated across state systems of higher education despite these limitations. When theory fails to inform research and policy, danger awaits.

Productivity involves actors, structures, and processes at the individual, group, and organizational levels, including informal networks.[58] Measuring productivity must address what individuals do *and* organizational design, learning, technology, evolution, and turnover.[59] Traditional economic measures of frequencies or quantities alone cannot evaluate productivity.[60] Productivity, a dynamic construction, involves cognition, motivation, exchanges, and decisions by individual and corporate actors who are influenced by group processes. This complex function is estimated relative to one's social, psychic, and material resources and opportunities. These complexities involve variable ratios of inputs, transformations, and outcomes.[61] Unravelling the mysteries of faculty productivity requires a robust theory of academic systems and their organizational components.

NOTES

[1] Lester, 1974; Sowell, 1975; Washington and Harvey, 1989; Orfield, 1993; Henry, 1994; Justiz, Wilson, and Bjork, 1994.

[2] Gross and Levitt, 1994.

[3] Blalock, 1991.

[4] Konrad and Pfeffer, 1991; Konrad, 1991.

[5] Washington and Harvey, 1989.

[6] Fararo and Skvoretz, 1984.

[7] Granovetter, 1988.

[8] McGinnis, 1965; Bishir and Drewes, 1970; Fararo, 1978; Rapoport, 1983; Bailey, 1994.

[9] Wallace, 1983.

[10] Schmuck and Runkel, 1994.

[11] March and Simon, 1958; Cyert and March, 1963.

[12] Jencks and Riesman, 1977; Bourdieu, 1988.

[13] Blalock, 1989, 1991; Carley, 1991; Blalock and Wilken, 1979; Taylor and Moghaddam, 1987.

[14] Blalock, 1967, 1991; Hacker, 1992; Massey and Denton, 1993.

[15] Foddy, 1995; Coleman, 1990.

[16] Sjoberg and Nett, 1968; Little, 1991; Duckitt, 1994.

[17] Kaplan, 1975; McGinnis, 1965; Downs, 1975; Casti, 1992a, 1992b.

[18] Diesing, 1971, 1991.

[19] Simon, 1957; Kyburg, 1968.

[20] These limitations result from restricted access to NSOPF databases.

[21] Carroll, 1988; Bourdieu, 1988; Burt, 1992; Blau, 1994; Carley and Newell, 1994.

[22] Bailey, 1994; Clark, 1983, 1987; Harris, 1994; Blau, 1994.

[23] Fairweather, 1996; Kuhn, 1974; Bailey, 1994; Caplow and McGee, 1958; Cartter, 1976; Jencks and Riesman, 1977; Berg, 1981; Bowen and Schuster, 1986; Frank and Cook, 1995.

[24] Blau, 1973; Bess, 1989.

[25] Schmuck and Runkel, 1994.

[26] March and Simon, 1958.

[27] Bourdieu, 1988; Blalock, 1991.

[28] Kyburg, 1968.

[29] Doreian and Hummon, 1976; Carley, 1995.

[30] Huberman and Hogg, 1995.

[31] Kalleberg and Berg, 1987; Coleman, 1990; Little, 1991.

[32] Sink and Smith, 1994.

[33] Ruch, 1994; Sink and Smith, 1994; Harris, 1994; Brinkerhoff and Kunz, 1972; Blau, 1973; Mullins and Mullins, 1973; Burt, 1982; Granovetter, 1988, 1985, 1977; Pattison, 1993.

[34] Bess, 1989.

[35] Sociologists have produced the most robust findings about the social forces that molded organizational structures, career patterns, social networks, and status attainment processes endemic to academic labor markets. They asked how ascribed and achieved statuses of faculty members interacted with the ways academic institutions organized to recruit professors. Sociologists have thus usually isolated prestige and productivity indicators to explain behavior in academic labor markets.

[36] The academic labor market is highly differentiated by sectors, due to task orientation (teaching vs. research), bureaucratic setting (governance structure, sponsoring clienteles), and specializations within and between disciplines (theorists vs, methodologists; sociologists of science vs. sociologists of organizations; sociologists vs. economists). Ascription, concludes several studies, intrudes unwarrantedly into the process of faculty mobility (Caplow and McGee, 1958; Crane, 1965, 1969, 1970; Smelser and Content, 1980; Rosenfeld, 1981; Pearson, 1985; Burke, 1988; Allen, 1988). Recent research shows how gender and scientific consensus affect academic labor markets (Rosenfeld, 1981; Hargens and Hagstrom, 1982).

Economists have explored supply-demand fluctuations within academic labor markets (Marshall, 1964; Brown, 1965, 1967; Cartter, 1976; Tuckman, 1976; Bowen and Schuster, 1986). Using a neoclassical paradigm, they focused on market behaviors at the individual or supply level (the quality or quantity of existing or potential labor pools), and occasionally investigated the reward structures used by colleges and universities to attract faculty. Economic studies did not ask how structural impediments, including ecological conditions, organizational complications, and network ties, might constrain faculty mobility (Berg, 1981). Instead, economic accounts of academic labor markets compared productivity and pecuniary incentives.

[37] Kalleberg and Berg, 1987.

[38] Carley, 1995; Harris, 1994.

[39] Ethnic categories may be dubious, confounding, and sometimes offensive. The terms used are adopted from the language used by sponsors of the cited surveys.

[40] Hacker, 1992; Nettles, 1987; Brown, 1987, 1988; Justiz, Wilson, and Bjork, 1994.

[41] Blackwell, 1981, 1983; Thomas, 1990; Konrad, 1991; Brown, 1994; Massey and Denton, 1993.

[42] Zimbler, 1990, 1994.

[43] Comparing majority white to minority faculty is dubious. NSOPF-93 does not disaggregate ethnic differences among white faculty, such as between Irish, Italian, English, Swedish, or Jewish academics. An ecological fallacy occurs to the extent that studies fail to compare these groups with ethnic equivalents among minority faculty. Even the aggregation of ethnic status for minority faculty conceals serious ethnic distinctions. "Hispanic" faculty, for example, includes Mexicans and Puerto Ricans, though significant differences exist in their ethnic or cultural experiences.

[44] Zimbler, 1994.

[45] Schmuck and Runkel, 1994.

[46] Zimbler, 1994, 10, table 2.

[47] We do *not* suggest that *every* male faculty member is more productive than *every* or *any* female professor. Nor do we imply that *any* of observed productivity difference is function of stereotypical biological capabilities. Gender differentiation is *not* coterminous with gender causation.

[48] Feagin, 1984.

[49] Blalock, 1991.

[50] Allen, 1994, 1995, 1996.

[51] March and Simon, 1958.

[52] Finn and Manno, 1996.

[53] Fairweather, 1996.

[54] Coleman, 1990.

[55] Goodman, Lerch, and Mukhopadhyay, 1994; Schneider and Klein, 1994; Harris, 1994.

[56] Carroll, 1988.

[57] Carley, 1995; Guetzkow, Kotler, and Schultz, 1972.

[58] Harris, 1994; Huberman and Hogg, 1995.

[59] Carley, 1992, 1995.

[60] Rosenberg, 1992; Harris, 1994.

[61] Pete, Pattipati, and Kleinman, 1995.

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