DOCUMENT RESUME

ED 134 110 HE 008 591

AUTHOR Marcus, Laurence R.
TITLE Affirmative Action in Science Departments: A Challenge for Higher Education.
PUB DATE [76]
NOTE 16p.; Adapted from a dissertation.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Affirmative Action; Astronomy; Biochemistry; Botany; Chemistry; *College Faculty; Computer Science; Department Directors (School); *Employment Practices; Engineering; *Equal Opportunities (Jobs); Federal Legislation; Geography; Geology; Government Role; *Mathematics Teachers; Microbiology; Physics; Racial Discrimination; *Science Departments; Sex Discrimination; Standards; Statistics; Surveys; Zoology
IDENTIFIERS University of Massachusetts

ABSTRACT

As part of a study of the implementation of affirmative action in academic affairs at the University of Massachusetts at Amherst, interviews were conducted with the heads of ten of the eleven departments and programs of the Faculty of Natural Sciences and Mathematics (FNSM). The data received were combined with written data available in administrative files and in the university's archives and affirmative action plan. There was strong consensus that it was the federal initiative that had resulted in the university's affirmative action plan. Among the faculties surveyed, there was considerable resistance to the concept of goals, seen to be identical with quotas, and there was strong concern for maintenance of standards. Debate, however, was generally low key. The percentages of available women and minority doctorates was low in most disciplines at the time; the distribution within existing faculty was more balanced than in some other divisions, however. Post-doctoral positions in FNSM are an area in which, for several reasons, affirmative action has not been implemented. In other areas of faculty hiring, the collegial contact approach was the most commonly used one for hiring women and minorities. Most department chairmen felt that strong upper-level administrative support was essential to successful implementation, and that budgetary considerations were important; none felt that faculty leadership was an important factor. The disciplines involved in the survey are biochemistry, botany, chemistry, computer and information science, geology and geography, mathematics and statistics, microbiology, physics and astronomy, polymer science and engineering, and zoology. (MSE)

AFFIRMATIVE ACTION IN SCIENCE DEPARTMENTS: A CHALLENGE FOR HIGHER EDUCATION

Laurence R. Marcus

Stockton State College

Aside from "bussing", few federal initiatives in the area of social policy in this decade have evoked as much emotion and debate as affirmative action. Intended as a means toward the insurance of equality of opportunity in hiring, the policy requires that employers with substantial federal contracts go beyond a posture of non-discrimination in hiring to one which attempts to seek out women and minorities who are qualified to fill existing vacancies in order that the underutilization of members of those groups might be overcome. Since the announcement of the Higher Education Guidelines by H.E.W. in 1972, all colleges and universities receiving federal contracts in excess of $50,000 and employing 50 or more persons have been required to develop affirmative action plans which, among other provisions, were to include numerical goals and timetables for the resolution of any employment areas within the institution found (as a result of an institutional self-study) to have fewer women and minorities than might be expected by

their availability.

For many academics, affirmative action was a bitter pill to swallow, both philosophically and professionally. Although it would be unfair and inaccurate to classify all opponents of affirmative action as racist and/or sexist, it would be accurate to note that affirmative action called into question many time-honored traditions of higher education. The outcry was major, and focused primarily around three topics: the appropriateness and legality of what many viewed as required preferential treatment; the concern that numerical goals and timetables were, in reality, quotas, and; the effect that the policy might have on traditional standards of excellence in higher education. The debate has been long and intense, and on some campuses has been polarizing. Particularly perplexed by the requirements of affirmative action have been the faculties in the sciences, since they have the highest concentrations of federal dollars and, perhaps, the lowest proportions of qualified women and minorities.

As part of a study of the implementation of affirmative action in academic affairs at the University of Massachusetts at Amherst, interviews were conducted with the heads of ten of the eleven departments and programs of the Faculty of Natural Sciences and Mathematics (FNSM). In order to develop a clear picture of the implementation process, the data received through the interviews was combined with written data available in various administrative files and in the University's Archives as well as

in the Affirmative Action Plan for the Campus.

The issues relevant to affirmative action appeared initially in late 1971 when the Faculty Senate considered a motion which proposed the creation of an associate provostship concerned with the status of women on campus. The concerns raised nationally were also voiced on campus. After the motion's passage, the University's administration sought to reduce the level of anxiety among the faculty by taking action aimed at carefully defining affirmative action. The Chancellor, the Provost, and the new Associate Provost continually made it clear, both through written communication and in small meetings, that academic excellence was still to be the foremost consideration in hiring, promotion and admissions decisions, but that there were women and minorities who had been overlooked in the past who could meet those standards. Differentiations were made between the concepts of "goals" and "quotas", and any requirement for preferential treatment was disavowed.

The effort to bring about an understanding of the nature of affirmative action was successful. All forty-five administrators, deans, and department heads interviewed gave adequate definitions of affirmative action. In the sub-group composed of science department heads, all ten gave adequate definitions; however, two felt that the policy, in effect, forced the hiring of women and minorities. Several of the FNSM department heads noted their belief that the policy makes the accusation that

they had been willing participants in discrimination efforts. One said, "I feel offended, in a way, that the administration tells me that I have to follow affirmative action...that's a reflection on me. However, I do agree that a policy with the basic intent of affirmative action is necessary." Another reflected that the recruitment methods called into question by the policy "were not the biased way, but the easiest way". On the whole, however, there was a general understanding of the intent of the policy and its specifics among the FNSM department heads.

There was strong concensus among the group that it was the federal initiative which had resulted in the University's affirmative action activity. Nine identified the H.E.W. regulations as the motivating force; only one cited social ideals as being important. Four scientists noted the reliance of their departments on federal grants and the necessity of having an approved affirmative action program in order to maintain eligibility for current and future federal monies: "Our department has over a million dollars in federal grants each year; H.E.W. could cost us that money"; "We did it to keep N.I.H. from cutting off our funds"; "Withdrawal of federal funds would have crippling effects on the department".

There was little doubt on the parts of the FNSM heads that the upper level administration was committed to affirmative action. Seven of the ten thought the commitment to be strong; none thought it weak. Concerning the dean of the division,

the consensus was that he had been strongly supportive of affirmative action with them, and had been strongly supportive of their concern about the "particular problem of the sciences" in his interactions with the central administration.

The development of affirmative action plans at the University was to occur at the departmental level, and turned out to be a long process. Discussion, both procedurally and substantively based, occurred in all but one of the FNSM departments surveyed. That one department felt it unnecessary to discuss the policy since it had not been (and was not likely to be) involved with any faculty hiring during that period. The others felt it to be a topic worthy of attention at departmental meetings and personnel committee meetings. The procedural discussions clustered around the planning process required for the development of the departmental affirmative action program, the specifics of the search requirements, and the format of the documentation of efforts requirements. The substantive discussions included the entire range of issues surrounding affirmative action.

Among the various FNSM faculties, there was major resistance to the concept of "goals"; they were seen as essentially no different from "quotas". There was a strong concern for the maintenance of standards as well. Some faculty saw the policy as meaning the elimination of white males from the hiring pool. However, since reality showed there to be so few women and minorities in those disciplines, it was

generally felt that "the goals will never be met anyway". One departmental meeting defeated a motion that stated that "the department should hire a minority group member" merely to claim that it had one. Several department heads noted that "given a tie" between a white male candidate and an equally qualified affirmative action candidate, the department had decided to give preference to the affirmative action candidate.

Generally, however, the debate in the FNSM departments was low key. Only six department heads were able to name members of their faculties who were openly supportive of the policy; only two were able to name faculty openly opposed and covertly opposed to affirmative action, while one more was able to identify members of his faculty who were covertly opposed. On the other hand, all but one believed that their faculty clearly understood the substance and procedures of affirmative action as outlined by the University's administration.

By February, 1974, a two volume affirmative action plan was developed for the Academic Affairs sector. Included was a section concerned with the Faculty of Natural Sciences and Mathematics. The report showed that three FNSM departments included no women and no minorities; three others had no minorities. There were no minority women on this 84% white male faculty.

Table I: 1973 - 1974 FNSM Affirmative Action Statistics

Department	Total Faculty	Minority Faculty	Women Faculty	Projected Affirmative Action Hires
Biochemistry	13	0	2	*
Botany	26	1	5	*
Chemistry	41	1	2	*
Computer and Information Science	15	0	1	*
Geology and Geography	21	0	0	2
Mathematics and Statistics	75	5	6	*
Microbiology	12	0	0	*
Physics and Astronomy	55	2	1	1
Polymer Science and Engineering	5	0	0	*
Zoology	34	0	4	2
Total	300	9	21	5

* None cited.

As is apparent in Table I, the proportion of women and minorities in each of the departments was relatively low. Further evident was the reluctance of all but three departments to set numerical hiring goals to improve the affirmative action proportion of their faculties. Table II indicates that the per centages of available women and minority doctorates at that time was low in most disciplines; in a number of areas, however, women were available in sizable numbers.

Table II: FNSM Availability Pool Data as Presented in the Plan

Department	Per cent Women	Per cent Minorities	Source Cited
Biochemistry	16	*	*
Botany	12.6	*	*
Chemistry	9	less than 3	*
Computer and Info. Sci.	2	*	*
Geology	3	(1.5)	*
Geography	4.2	(1.5)	
Mathematics	8	*	un-named study
Statistics	6	*	un-named study
Microbiology	15	1	Am. Soc. of Micro.
Physics	3	2	*
Astronomy	9	1	*
Polymer Science and Engin.	*	*	*
Zoology	17	info. not avail.	*

*None cited.

Table III: FNSM Distribution of Personnel by Race and Sex (1972-3)

	Prof.	Assoc. Prof.	Asst. Prof.	Instructor	Other	Grad. Asst.
Total	89	84	93	5	5	256
Minority	3	3	4	0	0	18
Female	3	5	4	0	1	47

Table III, which is a compilation of data contained the tables appended to the University's Affirmative Action Plan, does not show as unbalanced a distribution of women and minorities through the various faculty ranks as the other academic division of the University showed; however, their numbers were much lower. Minorities were found in only four of the ten departments, while women were employed in all but three. Over half of the minorities were in one department, Mathematics; most were Asian-Americans. Over-all, minorities made up only 3% of the total faculty, and women only

7%.

Among the total graduate population of 628 students, 24% were women. This ranged from a low of 10% in Physics and Astronomy to a high of 43% in both Botany and Zoology. Three departments reported having no minority graduate students. Of those that did, the average was less than 3%, with a range of .9% in Chemistry to 4.3% in Botany. In 1972-1973, there were 256 graduate teaching assistants of whom 7% were minority and 18.4% were women. While minorities were supported to a greater degree than their proportional presence in the graduate programs, women were not. In every instance, women received a smaller proportion of aid than their male counterparts. The greatest variance was in Chemistry, where women were 19% of the population but received only 8% of the assistantships; the least variance occurred in Physics and Astronomy, where they were 10% of the population and held 8% of the assistantships.

One area in which the division was different from most others on campus was the frequent presence of post-doctoral positions (in all but two departments). While only a few departments made mention of these positions in their individual plans, they proved to present quite an affirmative action problem according to data gathered in the interviews. In the division, there were a number of University-funded post-doctoral positions which rotated among the various departments; there was no question that these would fall under the purview of affirmative action. However, most of the "postdocs" were either unpaid,

were supported by grants secured by the faculty member supervising the research, or were supported by grants secured by the person in the position. Persons seeking positions would write to individual faculty members in their area of specialization, requesting a supervisory relationship and office or laboratory space. Members of the faculty saw no reason to employ affirmative action since there was no cost to the University, and, often, substantial benefit. Further, they felt that since postdocs were not "open" positions to be filled, but represented individuals with very specific specialties wanting to study with faculty who had those same specialties, it would be senseless to advertise prior to filling those slots. Similary, faculty who had received grants for specialized research argued that advertising to fill research positions would only serve to meet a bureaucratic need; it was their belief that the network approach was the best way to fill these positions.

Three department heads thought affirmative action to be totally inapplicable to post-doctoral positions, but four felt that the controversy could be resolved by placing ads in the professional journals. Five stated that they had encountered problems in attempting to fill such positions as a result of "interference" from the Academic Affairs Affirmative Action Coordinator. One department head was so angered that he sent a memo to his counterparts in the division in an attempt to organize the dissatisfaction that they all felt.

Things were somewhat different in the area of faculty hiring. One department had no vacancies during this period, but the other departments used a group selection process, usually a search committee, to fill faculty vacancies; most acknowledged that this differed from the previous method of selection which had been done by the department head or the senior faculty member in the specialty area with the vacancy. In order to attract candidates, 90% placed advertisements in professional sources, while forty per cent used other media. Affirmative action placement services were used by 60%; several accepted unsolicited applications. Three departments sent form letters to other colleges and universities, while all made use of their collegial contacts. Since women and minorities were at a premium in most of the disciplines, seven felt that the network approach was the most effective means of locating them. Six noted that finalists for positions always came via that route; two more said that finalists frequently came that way. None said that advertising always produced finalists, and only two thought that finalists frequently came via that route. In fact, five said that advertising never produced the best candidates.

Women and minorities were generally acknowledged to be rare in the sciences. In some of the life science areas, there were visible percentages of women. However, the comments of one department head were similarly repeated by most, "There are six blacks with Ph.D.'s in the entire country, and I know

then all. If we're talking about (hiring) minorities, then we have to talk about foreign-born Asians."

Thus, there was great hope placed on graduate recruitment as a means of developing a broader affirmative action pool. Seventy per cent, however, felt that there was no need to attempt to seek out women since they were applying in increasing numbers each year and were rapidly increasing in undergraduate programs as well. Only three departments made no attempt to recruit minority students. According to the interviews with the department heads, six had sent announcements to other colleges and universities, three had used their collegial network, two had visited traditionally black colleges and urban institutions, and one had used the CCEBS network. While all were concerned about the quality of prospective students, two mentioned that they would accept any minimally qualified minority, would be willing to undertake a more concentrated training effort, and would be willing to allow extra time for those students to complete their degree requirements. Several mentioned the difficulty in attracting minorities since the "good ones get offers from M.I.T. or Cal. Tech. or some other top flight school."

The department heads were asked to comment on the importance of certain factors to the successful implementation of an affirmative action program. Seventy per cent felt that strong upper level administrative support for such an effort was crucial in order that it might be viewed as a top institu-

tional priority. All felt that the state of the budget and the manner in which it was used were important factors. None, surprisingly, felt faculty leadership to be an important factor, while only thirty per cent felt the participation of women and minority faculty to be an important variable in the successful implementation of affirmative action. (Many felt this latter area to be similar to the "chicken and the egg" controversy.) Only 20% felt that the affirmative action officer had an important impact on the departmental effort.

Table IV: Perceptions of the Importance of Certain Factors to the Successful Implementation of Affirmative Action

Factor	Important	Moderate	Not a Factor	Don't Know
Strong upper-level admin. support	7	3	0	0
Faculty leadership	0	1	9	0
Participation of women and minority faculty	3	0	5	2
Affirmative Action Officer	2	4	4	0
Budget	10	0	0	0

The total research concerning the implementation of affirmative action in academic affairs at the University of Massachusetts shows the effort to have been a successful one. That is not to say that all discriminatory beliefs and their resultant actions had been totally eradicated in any part of the University or that the policy received strong support and compliance from all of the organizational units on campus, but it is to acknowledge that that institution had set itself

in the direction of correcting its self-admitted deficiencies, and has developed a momentum that, barring any major financial catastrophies or any change in administrative priority, would, in all likelihood, result in the continued improvement in the proportion and condition of women and minority faculty and graduate students. One indication of the University's success is reflected in the statistics which show that over a several year period, there were three times as many women and minority faculty hired as Berkeley was required to hire in thirty years, and without any sustained charges that quality had been comprimised. Another indication is that the annual updating of affirmative action plans has produced increased statistical data concerning affirmative action availability pools, and greater number of departments setting hiring goals.

Such has also been true for the University's science departments to a certain extent, although it is fair to say that most lag behind other parts of the University, partly a factor of low availability pools and a fiscal situation which limits hiring, but also a factor of affirmative action's being viewed as an administrative priority rather than a faculty priority. The emphasis placed by the science departments on affirmative action in the graduate program is, however, an indication of the concern of the faculty that the imbalance currently operant in the sciences (both in academe and industry) is an important one to overcome.

While the strength of the administrative commitment is sufficient to cause movement in a positive direction, it is

clear that a prime mover for affirmative action is commitment on the part of the faculty, themselves. While limited pools of qualified applicants in the sciences naturally result in slower progress toward increases in women and minority faculty (and, thus, a redirection of the effort toward increases among graduate students), the fact that the scientists interviewed did not hold the goal of affirmative action in as high regard as the other academics did, makes the challenge doubly difficult.