EVALUATION OF THE JUNIOR MESA PROGRAM

MATHEMATICS • ENGINEERING • SCIENCE ACHIEVEMENT

CALIFORNIA POSTSECONDARY EDUCATION COMMISSION

Summary

The Mathematics, Engineering, Science Achievement (MESA) Program was established in 1970 to increase the number of American Indian, Black, Mexican-American, and Puerto Rican students who graduate from an university prepared to enter math-based careers Developed initially with an exclusive focus on high school students, MESA received Carnegie Foundation funds in 1983 to expand through the initiation of a pilot junior high program to improve the early pre-college preparation of students from historically underrepresented backgrounds

In 1985, Assemblywoman Teresa Hughes authored Assembly Bill 610 that provided for the development of "Junior MESA," modeled on the experience gained from the Carnegie-funded projects The legislation also directed the Postsecondary Education Commission to evaluate the effectiveness of these pilots and to submit a report to the Legislature by September 1989 regarding the merits of the model program The Commission contracted with Eugene F Brucker of Brewer, Grose & Company to conduct this evaluation, which he has based upon information provided by the MESA Statewide Office, visits to 11 of the program's 16 centers, and responses to surveys of students, center directors, and school teacher/advisors

Part One of the report on pages 1-2 explains its origins and organization

Part Two on pages 3-7 describes the characteristics of the program and of the students participating in it in 1988-89

Part Three on pages 9-14 assesses the extent to which the program is achieving its objectives

Finally, Part Four on pages 15-16 presents conclusions and recommendations to guide the development of State policy with respect to Junior MESA The major recommendation emerging from the evaluation is that, given its effectiveness, Junior MESA should be continued and expanded in order to link all junior high schools from which students matriculate to senior high schools presently participating in MESA

The Commission adopted this report at its meeting on October 30, 1989, on recommendation of its Policy Evaluation Committee Additional copies may be obtained from the Publications Office of the Commission at (916) 322-4991 Questions about the substance of the report may be directed to Penny Edgert of the Commission staff at (916) 322-8028

EVALUATION OF THE JUNIOR MESA PROGRAM

A Report to the Legislature in Response to Assembly Bill 610 (Hughes) of 1985

CALIFORNIA POSTSECONDARY EDUCATION COMMISSION
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CALIFORNIA POSTSECONDARY EDUCATION COMMISSION

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Contents

1. Background of the Study 1
   - Study Design 1
   - Organization of the Report 1

2. Characteristics of Junior MESA 3
   - Junior MESA Activities and Services 5
   - Criteria for School Site Selection 6
   - Criteria for Student Selection 6

3. Effectiveness of Junior MESA 9
   - Academic and Motivational Preparation to Pursue a College Preparatory High School Program 9
   - Involvement of Parents in the Education of Their Children 12
   - A Look to the Future 12

4. Conclusions and Recommendations 15
   - Program Quality and Expansion 15
   - Continued Operational Requirements 15
   - Program Administration and Budgetary Considerations 16
   - Evaluation 16
   - Parent Involvement 16
   - Communication 16

Appendices 17

Appendices and Displays

Appendices

A. Assembly Bill 610 17

B. Center Director Questionnaire 21

C. Advisor Questionnaire 23

D. Student Questionnaire 27

E. Coordinator Interview 29

F. Advisor Interview 31

G. Student Interview 35

Displays

1. Location of Junior MESA Centers 4

2. Comparison of Junior MESA Centers in Terms of Number of Districts and Schools Participating, Students Enrolled, and Allocated State Resources for 1988-89 5

3. Characteristics of Students Participating in Junior MESA in 1988-89 6

4. Distribution of Enrollment by Junior MESA Students in Their Most Recent Mathematics Course 9

5. Distribution of Grades Earned by Participants in the Junior MESA Program in the 1988 Year 10

6. Attitudes of Junior MESA Participants Toward Academic Success and Career Planning 10

7. Career Choices of Junior MESA Participants in the 1988-89 Year 11

8. Importance of Several Junior MESA Activities in Encouraging Pursuit of Math-Based Professions 11

9. Academic Performance of MESA Students and California Seniors in 1988 and 1989 13

1 Background of the Study

THE Mathematics, Engineering, Science Achievement (MESA) Program began in 1970 when a group of college educators became concerned about the small number of Black and Mexican-American engineering graduates prepared to enter scientific and technological fields When they investigated the situation, they found that many students from these backgrounds had been interested in math and science in high school, but had not completed the classes necessary to enter postsecondary education in a math-based major Because of this finding, MESA's mission became

> To develop academic and leadership skills, raise educational aspirations, and instill confidence in students who are African-American, American Indian, or of Mexican or Puerto Rican descent, in order to increase the number who graduate from a four-year university with a degree in mathematics, engineering, physical science, or other math-based fields (MESA Mission Statement)

Developed initially with an exclusive focus on high school students, MESA received Carnegie Foundation funds in 1983 to expand through the initiation of a pilot junior high program to improve the early pre-college preparation of students from historically underrepresented backgrounds in order that they succeed in scientific and mathematics-based fields Programs were established during this pilot period at the University of California, Berkeley, the University of Southern California, and California State University, Long Beach

In 1985, Assemblywoman Teresa Hughes authored Assembly Bill 610, which is reproduced in the Appendix to this report, that established MESA in California statute (*Education Code* Sections 8612-8618) Part of that legislation provided for the development of Junior MESA, modeled on the experience gained from the Carnegie-funded projects The legislation also directed the Postsecondary Education Commission to evaluate the effectiveness of these pilots and to submit a report to the Legislature by September 1989 regarding the merits of the model program

Study design

As directed by this legislation, this study examines Junior MESA by evaluating its impact on

- The number of low-income and ethnic minority students who pursue or complete a junior high school education with motivation and academic preparation to embark upon a college preparatory high school program that is well grounded in mathematics and the sciences
- The junior and senior high school curriculum, with special emphasis on its mathematics and science components
- The professional development of the teachers and staff involved in the program, including the effect on their commitment to teaching and their sensitivity toward ethnic minority students
- The parents' involvement with their childrens' education, the MESA staff, and related activities

Organization of this report

The remainder of this report is divided as follows

- Part Two describes Junior MESA in terms of program components, school involvement, and participating students
- Part Three discusses the impact of Junior MESA on participating students in terms of their career interests, junior high school course selection, and academic performance as well as the views of participating students, teacher/advisors, and center directors
- Part Four offers conclusions based upon this study and recommendations about Junior MESA to guide the State in its future actions with respect to this program

2 *Characteristics of Junior MESA*

IN EVALUATING Junior MESA, understanding all of the components of the MESA Program is important MESA is an intersegmental student preparation program administered by the University of California, Berkeley through a Statewide Office located at the Lawrence Hall of Science -- a campus facility identified with the teaching of mathematics and science MESA consists of three interrelated major components that are described briefly below in order of their initiation

1 MESA's original pre-college program focuses on high school students beginning in Grade 9 This component is located on 16 California colleges and universities, where center directors and staff coordinate the delivery of services to 3,500 students in local high schools Reporting relationships differ by center, although all directors are associated with the engineering programs on their respective campuses The centers have the flexibility to develop their own unique projects, but under the general guidelines and policies of the Statewide office Display 1 on page 4 shows the geographical locations of pre-college MESA centers throughout California

2 The college-level Minority Engineering Program (MEP) originated in 1973 at California State University, Northridge, to help minority students majoring in mathematics-based fields In 1982, the State provided resources to expand the MEP component, which presently operates on 18 post-secondary sites, including 12 California State University campuses, five University of California campuses, and one independent university -- the University of Southern California. In 1987-88, nearly 2,500 college students participated in this component

3 Junior MESA functions as part of the pre-college program discussed earlier At present, Junior MESA operates at 67 junior high school sites and served 1,880 students in the 1988-89 year

Considerable variation exists in size among the MESA centers Display 2 on page 5 presents a picture of Junior MESA on a statewide basis and by center in terms of number of participating school districts, school sites, student enrollment, and State resources allocated to support Junior MESA in the 1988-89 year This display reveals variations in size among the centers in terms of

- Number of school districts served -- from one district served by a center, to as many as five districts participating in the Sacramento area (Capitol) center,
- Number of schools participating -- from four centers with only one school, to one with 11 sites in the East Bay around Berkeley and another with 13 sites in the Sacramento area;
- Number of students participating -- from only 16 in the San Diego area to 308 in the Sacramento vicinity, and
- The amount of State resources allocated to the center, from $4,500 at the Santa Barbara center to $60,000 in the East Bay In reviewing these figures, however, it should be remembered that each center receives additional resources from both the institution where the center is located and from the school districts participating in Junior MESA Further, all centers receive both direct and in-kind support from the private sector, primarily for special activities for the students.

This display reveals a distribution by the MESA Statewide Office in 1988-89 of State resources to centers in support of Junior MESA that is difficult to understand That is, the amount of resources allocated to centers appears to be unrelated to the number of districts, schools, or students served by that center

DISPLAY 1 Location of Junior Mesa Centers

Source MESA Statewide Office

DISPLAY 2 *Comparison of Junior MESA Centers in Terms of Number of Districts and Schools Participating, Students Enrolled, and Allocated State Resources for 1988-89*

Center	Number of Districts	Number of Schools	Enrollment	Junior High MESA Funds
California State University, Bakersfield	4	8	210	$22,000
California State University, Fresno	2	2	56	18,857
California State University, Fullerton	1	1	44	6,132
California State University, Long Beach	2	4	195	44,365
California State University, Los Angeles	2	5	168	19,800
California State University, Northridge	1	2	52	18,857
California State University, Sacramento (Capitol)	5	13	308	21,898
Harvey Mudd College (Claremont)	2	3	138	18,857
Loyola Marymount University (Los Angeles)	1	3	102	15,401
San Diego State University	1	1	16	13,349
San Francisco State University	1	2	28	17,106
San Jose State University	3	6	107	29,068
Stanford University	1	1	21	20,952
University of California, Berkeley	3	11	226	60,000
University of California, Santa Barbara	1	1	58	4,500
University of Southern California	1	4	151	47,143
	31	67	1,880	$378,285

Source. MESA Statewide Office

Junior MESA activities and services

In developing a pre-college program, MESA centers are requested by the Statewide Office to deliver myriad services to participating students Among the core services and activities are

Recruitment Activities designed to identify and enroll eligible students with math and physical science potential

Orientation Activities designed to affect students' and parents' attitudes and knowledge about the school setting and MESA's role

Academic Support Activities that ensure successful completion of college-track courses

Enrichment Science and math activities designed to increase and develop students' interest in and understanding of science and scientific methodology

College Preparatory Course Placements Programming and counseling activities which ensure that students participating in MESA take appropriate courses

Matriculation Preparation Activities that lead to enrollment in college preparatory course of study at the high school level

Recognition Incentives for academic participation and leadership performance

Criteria for school site selection

Several criteria have been established by the MESA Statewide Office to assist center directors in selecting schools to participate in Junior MESA Among the most important criteria is the willingness of a teacher at the site to serve as the teacher/advisor for Junior MESA These teachers/advisors, usually mathematics or science teachers, are typically selected by the school administrator and often volunteer to assume this responsibility

- *Number of Eligible Students* Of the center directors responding to the survey, 92 percent indicated that the number of students enrolled from backgrounds historically underrepresented in postsecondary education was a major criteria in selecting schools to participate in Junior MESA Similarly, 90 percent of the teachers/advisors indicated the importance of this selection criteria
- *School Site Support* Support from school administration was rated as important by 92 percent of the center directors and 60 percent of the teachers/advisors in their school selection process.
- *School Needs* A criterion considered significant by 92 percent of the center directors in selecting schools to participate in Junior MESA was need for motivational programs in mathematics and sciences at the school site
- *Matriculation to Senior High Schools Participating in MESA* That the junior high school matriculates students to high schools presently participating in MESA was considered a significant site selection criterion by 77 percent of the center directors

On the basis of these criteria, 67 middle and junior high schools in 31 districts actively participated in Junior MESA in the 1988-89 year

Criteria for student selection

Criteria for selecting students to participate in Junior MESA are as follows

- A student must be American Indian, Black, Mexican-American, or Puerto Rican to be considered for participation in Junior MESA, as these backgrounds are historically underrepresented in the college student population, especially in math, science, and engineering programs,
- Enrollment in the appropriate mathematics course for the student's grade level,
- Potential ability to succeed in higher education, but currently not necessarily placed in college preparatory courses, and
- Interest by both students and parents in the program and its activities

On the basis of these criteria, MESA center directors and the schools' teachers/advisors selected 1,880 students to participate in Junior MESA in the 1988-89 year The characteristics of these students are presented in Display 3

DISPLAY 3 Characteristics of Students Participating in Junior MESA in 1988-89

	Number	Percent
Grade Level		
Fifth Grade	1	0 0%
Sixth Grade	161	8 6
Seventh Grade	730	38 8
Eighth Grade	882	46 9
Ninth Grade	106	5 6
Total	1,880	100 0%
Racial-Ethnic Background		
American Indian	91	4 9%
Black	790	42 5
Mexican-American	953	51 3
Puerto Rican	25	1 3
Total	1,859*	100 0%
Gender		
Female	1,061	57 1%
Male	798	42 9
Total	1,859*	100 0%

* Information was not available on the 21 participating students at the Stanford University Center

Source California Postsecondary Education Commission

This display reveals that

- Not surprisingly, the grade level enrollments reflect those normally identified with middle or junior high schools, with the vast majority of students enrolled in the seventh or eighth grade
- All students participating in Junior MESA are from historically underrepresented backgrounds Consistent with State population trends, the majority of participating students are of Hispanic descent
- Females outnumber males in Junior MESA statewide and at 12 of the 15 centers that reported student information These figures would appear to run counter to the common belief that females are uninterested in pursuing math-based fields

This description provides the foundation for an assessment of the extent to which Junior MESA is achieving its objectives – the topic of the next section of this report

3 *Effectiveness of Junior MESA*

IN THIS section of the report, the Commission provides evidence on the effectiveness of Junior MESA, its programmatic activities, and participants' perceptions Information in this section was obtained from three sources

MESA Statewide Student Information System At the Statewide Office, information is maintained on the background characteristics, course patterns, and academic performance of students participating in MESA.

Mailed Surveys Questionnaires were developed and mailed to all center directors, teachers/advisors, and students participating in the program Completed questionnaires were received by the deadline from 81 percent of the 16 center directors, 29 8 percent of the 67 teachers/advisors, and 41 5 percent of the 1,880 participating students, representing 12 of the 16 centers Copies of the three questionnaires are found in Appendices B through D of this report

Site Visitations As part of the evaluation design, visits were made to 11 center locations in order to learn first-hand about Junior MESA and discuss the program with participants Structured interviews were conducted with 16 center administrators and staff members, 20 teachers/advisors, and 15 classes of approximately 30 students each Copies of the site interview forms are included in Appendices E through G

Academic and motivational preparation to pursue a college preparatory high school program

The legislation specifies that Junior MESA should be assessed on the extent to which participating students are prepared academically and motivationally to pursue a college preparatory course of study in high school One measure of academic preparation is the courses in which students are enrolled in junior high school, particularly in mathematics, because it provides the foundation for other high school courses such as science

Mathematics Course Selection From the Statewide Office, information was collected on the most recent math courses in which participating students were enrolled With 14 of the 16 centers reporting, the distribution of mathematics courses in which students were enrolled is presented in Display 4 below

DISPLAY 4 Distribution of Enrollment by Junior MESA Students in Their Most Recent Mathematics Course

Mathematics Course	Number of Students	Percentage of Students
General Math	910	49 4%
Pre-Algebra	607	32 9
Algebra I	299	16 2
Algebra II	2	0 1
Geometry	9	0 5
Pre-Calculus	2	0.1
Not reported	14	0 8
Total	1,843	100 0%

Source MESA Statewide Office

In reviewing the above data, the reader should consider the grade levels of the participants and the impact of the State Framework on curriculum offerings in middle and junior high schools which serve to place limits on course options in the seventh and eighth grades especially Nevertheless, more than 49 percent of the Junior MESA participants were enrolled in math courses at least at the pre-Algebra level

Academic Performance A question in the survey mailed to students requested information on their grades in specific subjects From this information,

grade point averages were computed Display 5 below presents information on the grades that Junior MESA participants earned in their most recent classes

This display reveals that

- In each subject area, at least 70 percent of the students reporting their grades indicated earning at least a B in the course
- Less than 9 percent of the students reporting their grades in any subject area earned less than a C
- Except in math courses, the average grade earned by Junior MESA participants in any subject area was at least a B (3 0), on a scale in which 4 is the numerical value for an "A" and 0 denotes an "F"

Attitudes Toward Academic Success and Career Planning The influence of Junior MESA on both participating students' academic performance and career plans was revealed in their responses to specific survey questions Display 6 presents information on the extent to which participants exhibited changes in behavior that can be described as more academically mature or career-oriented

Although less than half of the students reported spending more time in the library, expressed more concern about completing homework assignments, or indicated more interest in pursuing postsecondary educational goals, this lack of reported *change* in behavior simply may reflect the stringency of the selection criteria for this program That is, students participating in Junior MESA were chosen on the basis of their demonstrated potential and, presumably, that judgment resulted from evidence of a significant level of seriousness and commitment to academic excellence prior to participation in Junior MESA As a consequence, the relatively low percentage of students indicating interest in pursuing postsecondary education is more a function of the phrasing of the question than of their intentions Since most of these students revealed during the site interviews their intention to pursue

DISPLAY 5 Distribution of Grades Earned by Participants in the Junior MESA Program in the 1988 Year

Grade	A (4 0)	B (3 0)	C (2 0)	D (1 0)	F (0 0)	Average
English	36 3%	36 8%	21 5%	4 9%	0 7%	3 03
Mathematics	31 7%	38 1%	24 2%	5 4%	0 5%	2 95
Science	40 4%	34 9%	21 4%	3 0%	0 3%	3 12
Social Studies	37 4%	37 7%	21 3%	2 6%	1 0%	3 08
Foreign Language	51 2%	32 2%	9 5%	4 7%	2 4%	3 25

Source Commission staff analysis from student survey responses

DISPLAY 6 Change in Attitudes of Junior MESA Participants Toward Academic Success and Career Planning

Response	"Yes"	"No"	Percent Agreeing
I spend *more* time at the school or public library	219	563	28%
I am *more* concerned about completing my homework	369	413	47%
I am *more* interested in continuing my education in higher education either at a two-year or four-year institution	252	530	32%
I have given serious thought to the career choice I must make	501	281	64%

Source Commission staff analysis from student survey responses

higher education prior to their participation in MESA, there was little opportunity for change in this behavior upon participation On the other hand, the influence of the program is revealed most strongly in students' attention to their career choices

Career Choices Display 7 below presents a distribution of the career interests of students who participated in Junior MESA in the 1988-89 year at 14 of the 16 centers This display reveals that student participants showed significant interest in math-based careers -- a major objective of Junior MESA

DISPLAY 7 Career Choices of Junior MESA Participants in the 1988-89 Year

	Number of Students	Percentage
Computer Science	575	31 2%
Engineering	364	19 7
Mathematics	425	23 1
Physical Science	300	16.3
Not Specified	107	5 9
Non-Math	38	2 0
Other	34	1 8
Total	1,843	100 0%

Source MESA Statewide Office

Because of the importance of this finding, students were asked to identify those aspects of Junior MESA that they perceived as most significant in encouraging them to be interested in math-based careers Display 8 presents the assessment of students as to the critical activities and services available through Junior MESA that motivates them to pursue professions of a mathematical or scientific nature

Students indicated that field trips, academic and career advising, and incentive awards were the most helpful activities in encouraging them to pursue a Math/Science career When pressed to identify the one most important activity, students selected field trips and academic/career counseling Correspondingly, teachers/advisors evidenced agreement with the students' rankings, in addition, 65 percent of the teachers/advisors indicated that summer enrichment activities were important components of Junior MESA

In the structured interviews conducted as part of the site visitations, students, teachers/advisors, and center directors were asked to identify the activities most effective in preparing and encouraging pursuit of math-based careers Results were as follows

DISPLAY 8 Importance of Several Junior MESA Activities in Encouraging Pursuit of Math-Based Professions

	Very Helpful 5	Somewhat Helpful 4	Not Helpful 3	Harmful 2	Not Sure 1
Tutoring/ Study Groups	37 1%	45 4%	4 4%	0 8%	12 3%
Field Trips	58 1	34 5	2 4	0 9	4 1
Academic and Career Advising	41 3	52 6	0 0	0 5	5 7
Career Presentations	32 2	47 2	7 4	2 6	10 4
Incentive Awards	45 2	35 3	6 6	2 1	10 9
Summer Enrichment Program	42 9	32 5	5 7	2 5	16 5
Summer Job	30 0	26 1	10 6	3 9	29 5
Involvement of Your Parents	32 5	40 2	9 2	3 1	14 9

Source Commission staff analysis from student survey responses

- Students indicated field trips and hands-on activities as the most effective
- Teachers/advisors listed hands-on activities and field trips as the most effective Additionally, they gave Junior MESA meetings a high rating
- Center directors listed hands-on activities and field trips as most effective Center directors included parent involvement in this category, noting that when parents are involved, there is more student success

Involvement of parents in the education of their children

The legislation directs that the assessment of the effectiveness of Junior MESA consider the extent to which parents are aware of and support the educational aspirations of their children On both the student surveys and personal interviews, the importance and effectiveness of Junior MESA in stimulating parental involvement was probed Findings indicated that

- Orientation meetings were held for parents whose students were entering the program
- Parents were invited and encouraged to attend the year-end banquet
- Some centers invited parents to help supervise field trips, MESA day and summer enrichment activities
- The center at California State University, Los Angeles, gave a special emphasis to parents serving on advisory groups
- The center at the University of California, Berkeley, has a parent volunteer coordinator to facilitate parent involvement
- Seven of the 12 student groups interviewed as part of the site visitations indicated that the program had increased their parents' interest and involvement in the students' school program
- In the survey, 42 percent of the students stated that their parents were more interested in their education since they became participants in Junior MESA

Structuring activities that encourage parent involvement is difficult under any circumstances, but especially with parents whose experience with the educational system is often less than favorable As such, this reported level of parent involvement is commendable

A look to the future of Junior MESA

In looking toward the future, participants were queried as to the features of the program that could be improved Results of that probe indicated that

- Center directors most frequently cited in-service for teachers/advisors, released time for advisors, more district support and more hands-on activities as program elements in need of strengthening
- Teachers/advisors most often indicated that more tutorial support, improved parent involvement, curriculum enrichment, and the establishment of a Junior MESA class period at their site would enhance the effectiveness of the program Nevertheless, 95 percent of the teachers/advisors who responded to the survey indicated that students improved their academic achievement since beginning to participate in Junior MESA and nearly 100 percent of the teacher/advisors indicated that Junior MESA had influenced positively their students' motivation and commitment to pursue a math-based career

A plausible explanation for the evidenced effectiveness of Junior MESA in achieving its objectives may be the frequency and structure of the program The teacher/advisor is a member of the instructional staff at the site Further, Junior MESA meetings are held often

- 25 percent of the schools have incorporated a Junior MESA period as a regular class Practice varies as to whether math, science, or elective credit is given for this class This classroom option provides the opportunity to develop frequent student contact, curriculum enrichment, and a viable peer support system
- At 10 percent of the sites, the Junior MESA meeting occurs bi-weekly
- Taken together, over 75 percent of the teachers/advisors responding to the survey indicated that Junior MESA meetings occurred weekly ei-

ther before classes, after school, or during the lunch period

The integral nature of this program within the school is one of its uniquenesses and deserves consideration in future programmatic development efforts

The future of Junior MESA relates to the expectation that the participating students will contribute to the effectiveness of the MESA concept in general With regard to that effectiveness, the *First Progress Report on the Effectiveness of Intersegmental Student Preparation Program*, published by the Commission in October 1989, provides evidence on the success of MESA in achieving its programmatic objectives of increasing the number of students prepared to major in math-based fields, as measured by enrollment in college preparatory math and science courses and enrollment in math-based fields in college

Display 9 summarizes that evidence It indicates that

- The proportion of students participating in MESA who were prepared for college, as measured by completion of advanced math and science courses in high school and who fulfilled the college admissions test-taking requirement, was substantially higher than that of all students in the State and of Black and Hispanic seniors
- Students participating in MESA enrolled in college in greater proportions than their classmates statewide or California Black and Hispanic seniors in 1988 In particular, the percentage of students served by MESA who enrolled in baccalaureate degree-granting institutions was higher than their statewide counterparts This fact is significant as a demonstration of the effectiveness of this program, however, this result is especially impressive when recalling that MESA serves students historically underrepresented in postsecondary education, while the comparison group consists of a majority of students from backgrounds that have traditionally enrolled in college

DISPLAY 9 Academic Performance of MESA Students and California Seniors in 1988 and 1989

	MESA Seniors	Black Seniors	Hispanic Seniors	California Seniors
1989 Completion Rates				
Advanced Mathematics	93 5%	6 8%	6 8%	14 8%
Chemistry	90 5	35 7	29 7	43 1
Physics	78 7	9 8	8 2	17 2
1988 Participation Rates for the Scholastic Aptitude Test	70 7	38 5	22 6	50 5
1988 Postsecondary Education Enrollment				
University of California	33 0	4 6	3 9	7 6
The California State University	30 0	7 4	6 2	10 7
California Community Colleges	10 7	33 2	29 7	34 4
Total Public Segment Enrollment	73 0	45 2	39 8	52 7

Source MESA Statewide Office

4 Conclusions and Recommendations

IN DRAWING conclusions for a program such as Junior MESA, methodological challenges are inherent in assessing effectiveness Schools are complex organizations and do not lend themselves readily to cause-and-effect relationships Students are influenced, motivated, and impacted by many factors both within and outside the schools There are few opportunities to isolate and manipulate influences on student or program outcomes

One can draw inferences, however, by using surveys, interviews, and demographic information, regarding (1) the program as it currently is constituted and being operated, and (2) the extent to which the program has met the established objectives

Previous sections of this report demonstrate that Junior MESA is improving and increasing the interest in, and accessibility to, higher education in math and science for students from underrepresented ethnic backgrounds Given the severe need to increase enrollments in mathematics, science, and engineering disciplines and to provide equal educational opportunity to all students in California, continuation and expansion of Junior MESA is justified For these reasons, the Commission offers the following conclusions and recommendations regarding the future of this program

Program quality and expansion

Conclusion 1 Junior MESA has had significant positive impact on participating students, as measured by their course selections, career planning, and aspirations for higher education Students identified the program as important in peer support and individual encouragement Further, Junior MESA is perceived to have a very positive effect on the senior high MESA component, as demonstrated especially at the Capitol (Sacramento), Fresno, Long Beach, and Santa Barbara centers

Recommendation 1: Given its effectiveness, Junior MESA should be continued and expanded. Every effort should be made both statewide and at individual centers to established opportunities to link all junior high schools from which students matriculate to senior high schools presently participating in MESA. Implementation of this recommendation would require an augmentation of approximately $396,000 in State resources to accommodate 49 additional junior high schools, based upon the current average cost of $8,079 to serve a school site.

Continued operational requirements

Conclusion 2 The operational requirements established for Junior MESA have served as effective guideposts for the development, maintenance, and improvement of the individual projects MESA field trips, curriculum enrichment, and the competitions associated with MESA Day are valued by students, advisors, and center directors

Recommendation 2.1: Junior MESA sites currently in operation that do not include significant district commitment -- class period, released time, or honorarium -- should be reviewed for their effectiveness in serving students.

Recommendation 2.2: A careful review should be conducted of the advantages and disadvantages of operating Junior MESA classes within the regular school day as contrasted with an enrichment activity outside of the school day.

Program administration and budgetary considerations

Conclusion 3 Although the program is viewed as being effective overall, there is considerable unevenness among various centers in terms of activities, and number of students, schools, and districts participating in the program With the growth in the program and the above recommendation for ex-

pansion, there is a need for enhanced attention to the staffing and budgetary requirements for Junior MESA that fosters centers' flexibility to respond effectively to local needs and exigencies

Recommendation 3.1: A task force composed of statewide and center leadership should be formed to review center and statewide staffing needs.

Recommendation 3.2: Consideration should be given to the provision of a basic budget for each center that administers Junior MESA activities. State support, beyond the basic budget, should be related to established criteria such as number of districts, schools, and students projected to be served as well as district, university, and corporate support.

Evaluation

Conclusion 4 Program evaluation is required by enabling legislation MESA's Statewide Office has established an excellent data base to conduct evaluation activities Evaluation activities to date have been both internal and external

Recommendation 4.1: A data bank should be maintained by MESA's Statewide Office; however, a task force composed of statewide personnel and center leadership should be formed to review data needs for program operation and evaluation. The University of California, Berkeley, and Capitol centers have developed exemplary data systems that should be reviewed as possible models for replication on a statewide basis. Convening such a review of the data base will allow for, and promote, greater use of the information by center level staff.

Recommendation 4.2: Centers not responding to data requests and deadlines should receive appropriate sanctions.

Recommendation 4.3: Annual reports should be required on each junior high MESA program. The report should be designed so as to help generate a comprehensive evaluation of the program on a three-year cycle. The Statewide MESA Office should consider an evaluation design that includes a control group analysis that compares MESA and non-MESA participants on various student performance measures. The comprehensive report should be the responsibility of MESA's Statewide Office and should be submitted to the Legislature, the Governor, and the Postsecondary Education Commission. The Commission should review and comment on the evaluations, as appropriate.

Parent involvement

Conclusion 5 Parents, although not extensively involved, exhibit more interest in school and their students' progress as a result of the program The centers at the University of California, Berkeley, and California State University, Los Angeles, have creative and innovative parent involvement programs

Recommendation 5: Priority should be given to parent involvement activities. Successful and innovative parent programs should be shared between center staffs.

Communication

Conclusion 6 Innovative and exemplary practices and activities are being implemented in Junior MESA at individual centers These need to be identified and shared among center directors School and district personnel are not as aware of the program and its impact as they should be

Recommendation 6.1: Regular opportunities should be established to allow teachers/advisors and directors to meet on a statewide basis. Agendas for these meetings should include adequate time for communicating successes, innovations, and sharing problems.

Recommendation 6.2: Special opportunities should be provided to insure that regular school counselors are aware of, and supportive of Junior MESA. Since counselors normally schedule the students, it is essential they understand student participation criteria, program activities, and goals.

Appendix A Assembly Bill 610 (1985)

CHAPTER 3.5. MATHEMATICS, ENGINEERING, AND SCIENCE ACHIEVEMENT PROGRAM

Article 1 General Program

8600 The Legislature hereby recognizes that the connections made between the public and private sectors through the Mathematics, Engineering, and Science Achievement (MESA) program have resulted in better preparation of underrepresented students for college in mathematics- and science-based fields

The Legislature further recognizes that the imposition of additional high school mathematics and English course requirements for admission to the University of California and the California State University requires that underrepresented students who aspire to professions in mathematics- and science-based fields be placed in the appropriate courses and receive comprehensive career counseling in grades 6 through 9

It is the intent of the Legislature that the MESA program continue to coordinate the efforts of private industry and the segments of public education to improve the preparation of underrepresented students for college in math- and science-based fields, and that the MESA program operate under the guidance of its advisory board composed of representatives from private industry and the segments of public education

8601 The Mathematics, Engineering, and Science Achievement (MESA) program is a cooperative effort by secondary and postsecondary educational institutions, working with private industry, to increase the number of students who graduate from college or university with the academic skills needed to gain employment in engineering, mathematics, and science-related professions in California. The goals of the program shall include, but not be limited to, all of the following·

(a) To increase the number of low-income and ethnic minority secondary school students who are adequately prepared in mathematics and science to pursue a mathematics-based course of study in college

(b) To provide supplemental services at the college and university level which will result in a higher retention rate of low-income and ethnic minority students majoring in engineering, computer science, and other mathematics-based fields

(c) To increase the number of college and university graduates from ethnic minority backgrounds who secure employment and careers in mathematics-based fields such as engineering, management, and computer service

8602. (a) To accomplish the goals set forth in Section 8601, the program shall include the following two components:

(1) Precollege programming, including, but not limited to, services provided to pupils in grades 6 to 12, inclusive

(2) College and university level programming, including, but not limited to, services provided to students who enter college after receiving MESA precollege services.

(b) The programming specified in subdivision (a) shall include, but not be limited to, services designed to accomplish all of the following:

(1) Encourage students in the secondary schools, with a particular emphasis on students in grades 9 to 12, inclusive, to acquire the academic skills needed to study mathematics, engineering, or related sciences at the postsecondary level.

(2) Promote students' awareness of career opportunities and the skills necessary to realize those opportunities sufficiently early in the students' educational careers to permit and encourage them to acquire those skills.

(3) Promote cooperation among postsecondary educational institutions, the Superintendent of Public Instruction, and school districts in working towards achieving the goals of the program

(4) Solicit contributions of time and resources from public and private postsecondary educational institutions, high schools, and private business and industry

8604. Subject to the approval of the Regents of the University of California, the MESA program shall be administered as a public service program through a cooperative effort involving the Superintendent of Public Instruction, the Regents of the University of California, the Trustees of the California State University, the Board of Governors of the California Community Colleges, private industry, engineering societies, and professional organizations.

8606. (a) A MESA advisory board shall be established, and shall include, but not be limited to, representatives from all of the following

(1) Private business and industry

(2) Secondary educational institutions

(3) Postsecondary educational institutions

(b) The MESA advisory board shall do all of the following.

(1) Develop and recommend goals, objectives, and general policies for the operation and improvement of MESA

(2) Assist in securing financial, human, and other resources for MESA from private and public sources.

(3) Review the fiscal affairs of MESA

(4) Continuously evaluate the success of MESA in meeting the goals specified in Section 8601

(5) Attract and enhance public, governmental, and industrial participation in MESA.

(6) Review general personnel plans for MESA

8608 State funding for the MESA program shall be provided on a matching basis, so that the total dollar amount received from private sources equals at least 50 percent of the total dollar amount provided by the state

8609. Prior to January 1, 1989, the California Postsecondary Education Commission shall report to the Legislature regarding all of the following

(a) Whether MESA is operating as a cooperative effort of secondary and postsecondary educational institutions working with private industry, as specified in Section 8604

(b) Whether the MESA advisory board is functioning as specified in Section 8606.

(c) Recommendations for the improvement of MESA operations, as appropriate and consistent with legislative intent stated in Section 8600

8610 Commencing on January 1, 1988, the Regents of the University of California shall submit an annual report to the Legislature regarding the number of students served by MESA, and the success of the program in fulfilling the goals specified in Section 8601 The report shall be submitted on or before January 1 of each year

Article 2 Model Engineering and Science Career Preparatory Program

8612 T supplement existing precollege programming, the MESA program shall develop a model comprehensive engineering and science career preparatory program designed to increase junior high school pupils awareness of, and preparation for. career options in engineering and science The objectives of the program shall be all of the following

(a) To increase the pool of low-income and ethnic minority students who complete junior high school prepared to embark upon a college preparatory high school program which includes four years of coursework in mathematics, English, and science, respectively

(b) To increase the number of low-income and ethnic minority junior high school students who complete prealgebra and pregeometry courses.

(c) To enhance the content and consistency of general mathematics and science junior high school curricula.

(d) To provide junior high school teachers with in-service and other training opportunities which improve the quality of their instruction and their interaction with students

The model program shall emphasize providing services to pupils in grades 6 to 9, inclusive, and shall include the involvement of industry and practicing engineers.

8614. In order to properly test and evaluate the model program developed pursuant to Section 8612, MESA shall establish pilot projects at a minimum of three centers located throughout California Each center shall serve an area which includes at least four junior high schools and approximately 130 students.

8616 The California Postsecondary Education Commission shall evaluate the effectiveness of the pilot projects established pursuant to Section 8614. On or before September 1, 1989, the commission shall submit to the Legislature a report summarizing the evaluation, including, but not limited to, its recommendations regarding the merits of the model program.

8618. The sum of one hundred seventy-five thousand dollars ($175,000) is hereby appropriated from the General Fund to the University of California for the 1985–86 fiscal year, for allocation to the Mathematics, Engineering, and Science Achievement (MESA) program for purposes of funding the pilot projects established pursuant to Section 8614:

(b) It is the intent of the Legislature that funding for the continuation of the pilot projects established pursuant to Section 8614 through the 1988–89 fiscal year be provided through the appropriation for the University of California provided in the annual Budget Act.

(c) The funds appropriated for purposes of funding the pilot projects established pursuant to Section 8614 shall not be available for expenditure in any fiscal year unless the MESA program obtains one hundred seventy-five thousand dollars ($175,000) in matching funds from the private sector for that fiscal year Upon certification by the program of the availability of matching funds, the Regents of the University of California shall transfer an amount equal to the amount of matching funds to the MESA program

Article 3. General Provisions

8620. No provision of this chapter shall apply to the University of California unless the Regents of the University of California, by

resolution, make that provision applicable

8622 This chapter shall become inoperative on June 30, 1990, and, as of January 1, 1991, is repealed, unless a later enacted statute, which becomes effective on or before January 1, 1991, deletes or extends the dates on which it becomes inoperative and is repealed.

SEC 2. This act is an urgency statute necessary for the immediate preservation of the public peace, health, or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting the necessity are.

In order to provide funding for the establishment of pilot projects pursuant to the provisions of this act in the 1985–86 fiscal year, it is necessary that this act take effect immediately

O

Appendix B Center Director Questionnaire

Dear MESA Center Director

The California Postsecondary Education Commission is responsible for conducting an evaluation of the junior high MESA program As a part of the evaluation, would you please complete the questionnaire by May 15th and return the questionnaire in the envelope provided Many thanks!

MESA Center

MESA CENTER DIRECTOR QUESTIONNAIRE

What types of support did the center provide in 1988/89 to the junior high MESA program? (Mark all that apply)

_____ Direct classroom instruction

_____ Speakers

_____ Tutors

_____ Field trips to Senior High/Colleges

_____ Field trips to business/industry

_____ Special recognition (Specify)

_____ Other (Specify)

On what basis were junior high schools selected to participate in your center's junior high MESA program? (Mark all that apply)

_____ Number of minority students

_____ Need for college-prep motivational programs in general

_____ Need for motivational programs in mathematics and sciences

_____ Support of school administration

_____ Availability of an advisor

_____ Other (Specify)

How often are student meetings generally held at the junior highs participating in your center's program?

_____ Weekly _____ Bi-weekly _____ Monthly

_____ Other (Specify)

Did you conduct staff development activities for teachers in the junior high MESA program?

_____ No

_____ Yes (Describe)

Did you conduct activities for parents of students participating in the junior high MESA program?

_____ No

_____ Yes (Describe)

Please describe the impact, if any, of the junior high MESA program on the senior high MESA program in the following areas

Articulation

Curriculum

MESA Programming

Other

Additional Comments

Appendix C Advisor Questionnaire

Dear Junior High MESA Advisor

The California Postsecondary Education Commission is responsible for conducting an evaluation of the junior high MESA program As a part of that evaluation, would you take a few minutes to complete the enclosed survey After finishing, please return the questionnaire by May 15 in the envelope provided. Many thanks.

MESA Center

Name of junior high/middle school

JUNIOR HIGH MESA ADVISOR QUESTIONNAIRE

1. On what basis was your school initially selected to participate in the junior high MESA program? (Mark all that apply)

   _____ Number of American Indian, Black, Mexican American, or Puerto Rican students

   _____ Need for general college preparatory motivational activities

   _____ Need for motivational program in Math and Science

   _____ Support by school administration

   _____ Support by teachers

   _____ Other (Specify)

   _____ Don't know

2. How often are regular junior high MESA meetings held at your school?

_____ Weekly

_____ Bi-weekly

_____ Monthly

_____ Other (Specify)

3 In what types of activities were the parents of junior high MESA students involved this year? (Mark all that apply)

_____ Participated in orientation meeting

_____ Hosted study group in their home

_____ Monitored tutoring center

_____ Conducted tutoring

_____ Car pooled students to junior high MESA activities

_____ Attended career-awareness activities

_____ Attended college advising workshops

_____ Attended a field trip

_____ Served on Parent Advisory Group

_____ Telephoned students or parents

_____ Raised funds

_____ Served as speakers for junior high MESA activity

_____ Helped organize or supervise field trips

_____ Attended study groups or learning workshops

_____ Planned or supervised social events for MESA students

_____ Other (Specify)

4. Has the junior high MESA program conducted staff development activities?

_____ No

_____ Don't know

_____ Yes (Describe)

5 What do you believe has been the impact of the junior high MESA on the following.

A. Number if students taking college prep courses-
_____ Increased _____ No change _____ Don't know

B. Course selections by students-
_____ Improved _____ No change _____ Don't know

C. Academic Achievement-
_____ Improved _____ No change _____ Don't know

6. Please indicate the activities listed below that have been conducted in your MESA program this year (1988/89) and how helpful the activity has been in encouraging students to pursue a math or science-based career

	Very Helpful	Somewhat Helpful	Not Helpful	A Hindrance	Not Sure	Not Applicable
Tutoring/ study groups	5	4	3	2	1	0
Field trips	5	4	3	2	1	0
Academic and career advising	5	4	3	2	1	0
Career presentations (speakers, films)	5	4	3	2	1	0
Incentive awards	5	4	3	2	1	0
Summer enrichment program	5	4	3	2	1	0

Additional Comments

Appendix D Student Questionnaire

Dear Student

The California Postsecondary Education Commission is responsible for conducting an evaluation of the Junior-MESA Program As a participant in the program, it would be appreciated if you would take a few minutes to complete this short survey When you have completed the survey, please return it to your MESA advisor by May 15 who will mail it to the Commission

Name of MESA Center

Name of School

JUNIOR MESA STUDENT QUESTIONNAIRE

I Have you attended junior high MESA meetings regularly this school year?

1 ___ Yes, about once a week
2 ___ Yes, about every two weeks
3 ___ Yes, about once a month.
4 ___ No, only once in a while
5 ___ No, hardly ever

II. How helpful have the following junior high MESA activities been in encouraging you to pursue a math- or science-based field? (If you have not participated in an activity, circle "O" under "not applicable")

		Very Helpful	Somewhat Helpful	Not Helpful	Harmful	Not Sure	Not Applicable
a	tutoring/ study groups	5	4	3	2	1	0
b	field trips	5	4	3	2	1	0
c	academic and career advising	5	4	3	2	1	0
d	career presentations (speakers, films)	5	4	3	2	1	0
e	incentive awards	5	4	3	2	1	0
f	summer enrich-ment program	5	4	3	2	1	0
g	summer job	5	4	3	2	1	0
h	involvement of your parents	5	4	3	2	1	0

Of the above activities, which one was the most important in encouraging you to pursue a math or science based career? (Indicate the letter of the activity above)

III For what classes have you received tutoring this school year as part of junior high MESA? (Mark all that apply)

_____ Math _____ Science _____ English _____ Other (Specify)

IV How often did you meet for tutoring in study groups?

_____ At least once a week _____ At least once a month
_____ At least once every two weeks _____ Less than once a month

V How many field trips have you taken this year as part of MESA? (If none enter "O")

_____ Number of field trips

Where did you go? (Check all that apply)

_____ Science or math-related business or industry (e g , aerospace company, engineering firm)
_____ Science or math-related museum
_____ Math or science-related research center
_____ College or university campus
_____ Other (Specify)

VI Check those statements below that are a result of participation in the Junior High MESA Program (Mark all that apply)

_____ I spend more time at the school or public library

_____ I am more concerned about completing my homework

_____ I am more interested in continuing my education in higher education either at a 2 year or 4 year institution

_____ I have given serious thought to the career choice I must make

_____ My parents are more interested in my education

VII Please indicate the grade that you usually receive in each of these courses

	A	B	C	D	F
English	___	___	___	___	___
Math	___	___	___	___	___
Science	___	___	___	___	___
Social Studies (History/Geography)	___	___	___	___	___
Foreign Language	___	___	___	___	___

Additional comments regarding your MESA experiences

Appendix E Coordinator Interview

MESA COORDINATOR

# of Junior Highs in Program

Center Location

# of Districts Participating

Individual Interviewed

Phone Number

1. Please describe your Junior High MESA Program.

2. A number of services are provided by MESA. What services are <u>most effective</u> in the Junior High Program?

3. Which services are least effective in the Junior High Program?

4. If you had the option, what would you do to improve the Junior High Program?

5. Describe the network currently in operation between:

Junior High/Senior High Program

Junior High Program/Community

Junior High Program/Parents

6. Has the presence of the Junior High Program influenced the following:

Change in curriculum

Staff development

Involvement of parents

Additional Comments:

Appendix F Advisor Interview

JUNIOR High

MESA ADVISOR

District

Center Location

Name of School

Name of Advisor

Phone Contact

1. In your own words, what do you believe is the primary objective of the Junior High MESA program?

2. What junior high MESA activities do you feel are most effective?

3. What junior high MESA activities do you feel are least effective?

4. What improvements would you like to see implemented in your school's MESA program?

5. Please describe network/activities between your junior high program and the following:

Senior High MESA

Business Community

Center MESA Program

MESA Parents

Other College Prep programs

6. What do you believe the influence of the MESA program has been on MESA students in the following:

Course Selection

Career Choices

Math/Science Curriculum

Parent Involvement

Academic Achievement

7. In your opinion, has the junior high MESA program influenced the school in the following:

School climate

Class climate

Non-MESA student

Teacher/Staff morale

Other

Any additional comments

Appendix G Student Interview

STUDENT INTERVIEW

# of students in programs _____

# of students interviewed

Center Location

School

District

1. What activities in the Junior High MESA Program have been the most helpful?

2. Which ones have been the least helpful?

3. What do you like best about the Junior High MESA Program?

4. Has the Junior High MESA Program impacted you in the following:

Course Selections
Career Plans
Higher Education
Parent Interest
Use of the Library
Homework

5. Do you participate in any other school activites?

Sports -

Music -

Drama/Speech -

ASB -

Other -

6. Additional Comments

CALIFORNIA POSTSECONDARY EDUCATION COMMISSION

THE California Postsecondary Education Commission is a citizen board established in 1974 by the Legislature and Governor to coordinate the efforts of California's colleges and universities and to provide independent, non-partisan policy analysis and recommendations to the Governor and Legislature

Members of the Commission

The Commission consists of 15 members Nine represent the general public, with three each appointed for six-year terms by the Governor, the Senate Rules Committee, and the Speaker of the Assembly The other six represent the major segments of postsecondary education in California.

As of February 1990, the Commissioners representing the general public are·

Mim Andelson, Los Angeles;
C. Thomas Dean, Long Beach;
Henry Der, San Francisco;
Seymour M. Farber, M.D , San Francisco;
Rosalind K Goddard, Los Angeles,
Helen Z. Hansen, Long Beach;
Lowell J Paige, El Macero, *Vice Chair*,
Cruz Reynoso, Los Angeles; *Chair*, and
Stephen P Teale, M D , Modesto.

Representatives of the segments are

Meredith J. Khachigian, San Clemente, appointed by the Regents of the University of California,

Theodore J Saenger, San Francisco, appointed by the Trustees of the California State University;

John F Parkhurst, Folsom; appointed by the Board of Governors of the California Community Colleges,

Harry Wugalter, Thousand Oaks; appointed by the Council for Private Postsecondary Educational Institutions;

Joseph D Carrabino, Orange; appointed by the California State Board of Education, and

James B Jamieson, San Luis Obispo; appointed by the Governor from nominees proposed by California's independent colleges and universities

Functions of the Commission

The Commission is charged by the Legislature and Governor to "assure the effective utilization of public postsecondary education resources, thereby eliminating waste and unnecessary duplication, and to promote diversity, innovation, and responsiveness to student and societal needs."

To this end, the Commission conducts independent reviews of matters affecting the 2,600 institutions of postsecondary education in California, including community colleges, four-year colleges, universities, and professional and occupational schools

As an advisory planning and coordinating body, the Commission does not administer or govern any institutions, nor does it approve, authorize, or accredit any of them. Instead, it cooperates with other State agencies and non-governmental groups that perform these functions, while operating as an independent board with its own staff and its own specific duties of evaluation, coordination, and planning,

Operation of the Commission

The Commission holds regular meetings throughout the year at which it debates and takes action on staff studies and takes positions on proposed legislation affecting education beyond the high school in California. By law, its meetings are open to the public Requests to speak at a meeting may be made by writing the Commission in advance or by submitting a request before the start of the meeting

The Commission's day-to-day work is carried out by its staff in Sacramento, under the guidance of its executive director, Kenneth B O'Brien, who is appointed by the Commission

The Commission publishes and distributes without charge some 30 to 40 reports each year on major issues confronting California postsecondary education. Recent reports are listed on the back cover

Further information about the Commission, its meetings, its staff, and its publications may be obtained from the Commission offices at 1020 Twelfth Street, Third Floor, Sacramento, CA 98514-3985, telephone (916) 445-7933

EVALUATION OF THE JUNIOR MESA PROGRAM

California Postsecondary Education Commission Report 89-30

ONE of a series of reports published by the Commission as part of its planning and coordinating responsibilities. Additional copies may be obtained without charge from the Publications Office, California Postsecondary Education Commission, Third Floor, 1020 Twelfth Street, Sacramento, California 95814-3985.

Recent reports of the Commission include

89-13 The State's Reliance on Non-Governmental Accreditation: A Report to the Legislature in Response to Assembly Concurrent Resolution 78 (Resolution Chapter 22, 1988) (3/89; reprinted in Report 89-21)

89-14 Analysis of the Governor's Proposed 1989-90 Budget: A Staff Report to the California Postsecondary Education Commission (March 1989)

89-15 Planning Our Future: A Staff Background Paper on Long-Range Enrollment and Facilities Planning in California Public Higher Education (April 1989)

89-16 Standardized Tests Used for Higher Education Admission and Placement in California During 1988: The Fourth in a Series of Annual Reports Published in Accordance with Senate Bill 1758 (Chapter 1505, Statutes of 1984) (April 1989)

89-17 Protecting the Integrity of California Degrees: The Role of California's Private Postsecondary Education Act of 1977 in Educational Quality Control (April 1989)

89-18 Recommendations for Revising the Private Postsecondary Education Act of 1977· A Report to the Legislature and Governor on Needed Improvements in State Oversight of Privately Supported Postsecondary Education (April 1989)

89-19 Mandatory Statewide Student Fees in California's Public Four-Year Colleges and Universities· Report of the Sunset Review Committee on Statewide Student Fee Policy Under Senate Bill 195 (1985), published for the Committee by the California Postsecondary Education Commission (April 1989)

89-20 State Policy Guidelines for Adjusting Nonresident Tuition at California's Public Colleges and Universities Report of the Advisory Committee on Nonresident Tuition Policies Under Senate Concurrent Resolution 69, published for the Committee by the California Postsecondary Education Commission (June 1989)

89-21 State Oversight of Postsecondary Education: Three Reports on California's Licensure of Private Institutions and Reliance on Non-Governmental Accreditation [A reprint of Reports 89-13, 89-17, and 89-18] (June 1989)

89-22 Revisions to the Commission's Faculty Salary Methodology for the California State University (June 1989)

89-23 Update of Community College Transfer Student Statistics, 1988-89 The University of California, The California State University, and California's Independent Colleges and Universities (August 1989)

89-24 California College-Going Rates, Fall 1988 Update: The Twelfth in a Series of Reports on New Freshman Enrollments at California's Colleges and Universities by Recent Graduates of California High Schools (September 1989)

89-25 Overseeing the Heart of the Enterprise: The Commission's Thirteenth Annual Report on Program Projection, Approval, and Review Activities, 1987-88 (September 1989)

89-26 Supplemental Report on Academic Salaries, 1988-89: A Report to the Governor and Legislature in Response to Senate Concurrent Resolution No 51 (1965) and Subsequent Postsecondary Salary Legislation (September 1989)

89-27 Technology and the Future of Education. Directions for Progress A Report of the California Postsecondary Education Commission's Policy Task Force on Educational Technology (September 1989)

89-28 Funding for the California State University's Statewide Nursing Program A Report to the Legislature in Response to Supplemental Language to the 1988-89 Budget Act (10/89)

89-29 First Progress Report on the Effectiveness of Intersegmental Student Preparation Programs. One of Three Reports to the Legislature in Response to Item 6420-0011-001 of the 1988-89 Budget Act (10/89)

89-30 Evaluation of the Junior MESA Program A Report to the Legislature in Response to Assembly Bill 610 (Hughes) of 1985 (10/89)

89-31 Legislation Affecting Higher Education During the First Year of the 1989-90 Session A Staff Report of the California Postsecondary Education Commission (10/89)