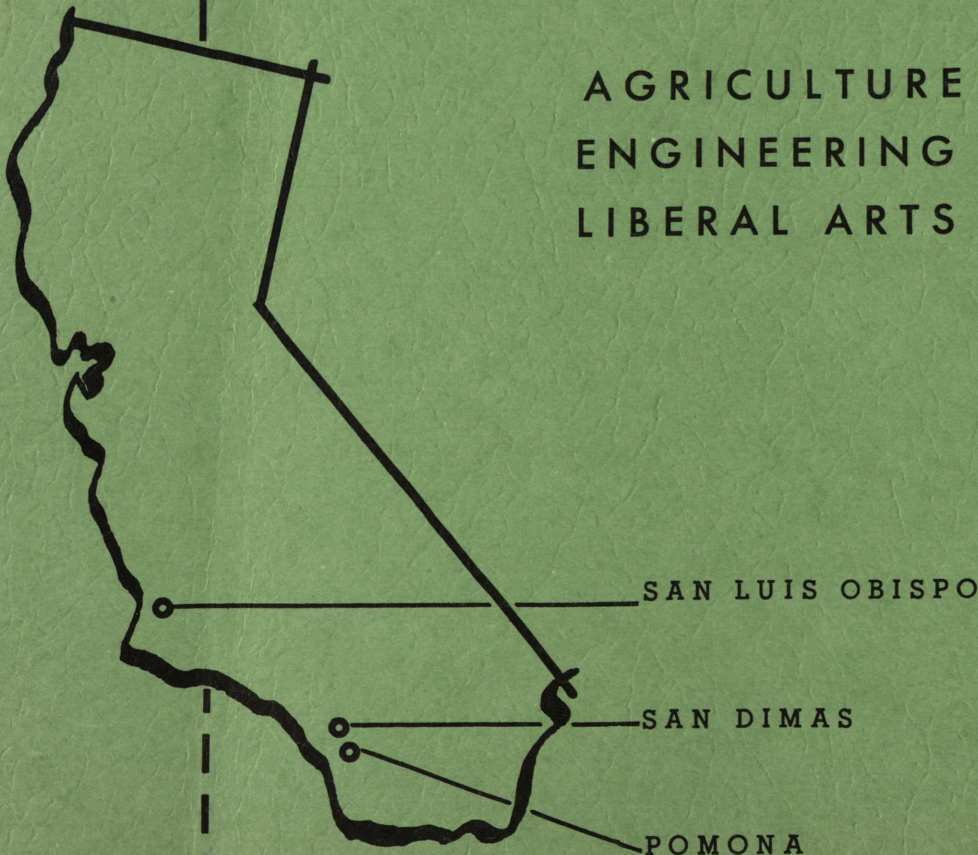


1953-54 | ANNUAL REPORT

CALIFORNIA STATE POLYTECHNIC COLLEGE

One of California's Ten State Colleges,
Administered by the Board of Education
And the State Department of Education

AGRICULTURE
ENGINEERING
LIBERAL ARTS



CALIFORNIA STATE POLYTECHNIC COLLEGE

ANNUAL REPORT

1953-54

to the

CALIFORNIA

STATE BOARD OF EDUCATION

AND THE

STATE DEPARTMENT OF EDUCATION

San Luis Obispo, California

May, 1954

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FOREWORD

To be the bearer of good tidings is always a privilege and a pleasure. In transmitting the Annual Report of the California State Polytechnic College for 1953-54, I feel strongly that I am bringing to you such tidings.

Unusual progress was achieved during the year on the long delayed building program of the College. The new Dairy and Poultry units were completed and the new Power Plant and Mechanical Engineering Laboratory will be ready for occupancy during the summer of 1954. Plans are ready and site preparation begun for the Science and Classroom building on the San Luis Obispo Campus. The Kellogg-Voorhis staff has worked with the State Division of Architecture and the State Department of Finance to complete plans for the first building in the development of the Kellogg Campus.

Enrollment which began a decline from its all-time high with the opening of the Korean campaign began to climb back up again during the year. Winter quarter registration was larger than that of the year preceding, while in the spring quarter the increase over the 1953 figure was greater than 8 per cent. Surveys made during the year by government and educational agencies revealed that the undergraduate enrollment in the Agriculture Division was the largest in the 11 western states, that the Engineering Division has the third largest undergraduate student body in the West, and that the Agricultural Engineering Department has become the largest in the nation.

Increasing evidence of the quality of the graduates of the College has accumulated during the year. The most convincing evidence on this point is found in the continuing demand for the services of the graduates and in the character of the employment opportunities offered them. Especially heartening was the collection of testimonials received this year from employers of agriculture graduates of the College. To prepare material for the State College Agricultural Education Survey Committee which visited both campuses this spring, letters of inquiry were sent to employers of all graduates during the last twelve years. The evaluations received in reply were gratifying beyond all expectations.

The increase in enrollment, the demand for graduates of the College and the excellent performance of alumni on the job are all fruits of the consistent application by the College of its philosophy of occupationally centered education. These favorable results are further indication of the soundness of bringing the freshman student into immediate contact with practical aspects of his major field, of learning by doing, and of the project method of instruction.

Nor could these results have been attained without the contributions to the work of the College made by the State Board of Education, State Department of Education and the Legislature. To these good friends of the College I express my sincerest appreciation for their cooperation and support.

Respectfully submitted,

Julian A. McPhee

Julian A. McPhee
President

ENROLLMENTFall Quarter 1953

A total of 2259 full-time students registered at the San Luis Obispo campus of the college for the fall quarter, 1953, while a total of 423 men registered at the Kellogg-Voorhis campus during the same period--a total for both campuses of 2682.

San Luis Obispo Campus Enrollment

<u>By Division</u>		<u>By Year</u>	
Engineering Division	1039	First Year	799
Agricultural Division	986	Second Year	528
Liberal Arts Division	185	Third Year	458
Graduates	49	Fourth Year	425
	<u>2259</u>	Fifth Year	0
		Graduates	49
			<u>2259</u>

Enrollment by Departments

<u>Agricultural</u>		<u>Engineering & Industrial</u>	
Agricultural Engineering	173	Aeronautical Engineering	164
Horticultural Services & Inspection	7*	Architectural Engineering	153
Animal Husbandry	438	Air Conditioning & Refrigeration	74
Field Crops Production	77	Electrical Engineering	94
Truck Crops Production	18	Electronics & Radio	267
Dairy Husbandry	86	Mechanical Engineering	243
Dairy Manufacturing	21	Printing	44
Fruit Production	13		<u>1039</u>
Ornamental Horticulture	49		
Poultry Husbandry	42		
Soil Science	58		
Citrus Fruit	4*		
	<u>986</u>		
<u>Liberal Arts</u>		<u>Graduate</u>	
Biological Science	35	Agricultural Education	32
Mathematics	14	Education	17
Physical Education	68		<u>49</u>
Physical Science	7		
Social Science	36		
Agricultural Journalism	25		
	<u>185</u>		
			<u>Total</u>
			<u>2259</u>

* First three years of instruction given at Kellogg-Voorhis campus and only senior year given at San Luis Obispo campus.

PLACE OF LEGAL RESIDENCE (SAN LUIS OBISPO)

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COUNTY	Nov. 1 1947	Oct. 1 1948	Oct. 1 1949	Nov. 10 1950	Oct. 80 1951	Nov. 18 1952	Nov. 16 1953
ALAMEDA	63	85	108	106	93	87	82
ALPINE	0	0	0	0	0	0	0
AMADOR	0	1	2	0	0	1	1
BUTTE	4	6	10	10	8	7	14
CALAYERAS	0	0	0	1	2	5	2
COLUSA	1	2	3	12	4	5	4
CONTRA COSTA	12	30	37	45	36	36	31
DEL NORTE	0	1	1	1	0	0	0
EL DORADO	7	14	14	12	5	2	3
FRESNO	65	73	71	50	43	35	40
GLENN	5	10	16	14	14	10	16
HUMBOLDT	13	17	14	8	11	12	12
IMPERIAL	12	16	15	17	26	40	22
INYO	3	3	3	7	7	4	1
KERN	27	50	66	51	47	67	73
KINGS	17	17	15	17	13	15	20
LAKE	1	3	2	5	2	4	1
LASSEN	3	10	11	6	4	3	5
LOS ANGELES	439	588	651	596	481	454	429
MADERA	11	3	5	4	5	4	11
MARIN	10	11	17	14	12	15	10
MARIPOSA	2	1	2	1	2	0	3
MENDOCINO	13	7	6	6	8	17	10
MERCED	27	41	26	31	25	15	12
MODOC	4	4	6	5	3	1	1
MONO	1	0	0	0	0	0	0
MONTEREY	41	52	50	57	38	37	42
NAPA	4	7	10	5	2	9	8
NEVADA	4	5	6	5	2	3	5
ORANGE	59	78	93	84	51	50	67
PLACER	5	7	2	5	6	5	7
PLUMAS	0	0	1	0	0	0	0
RIVERSIDE	35	81	64	68	56	49	49
SACRAMENTO	27	38	42	46	47	54	54
SAN BENITO	9	11	10	7	3	4	7
SAN BERNARDINO	44	54	65	64	51	46	45
SANTA CLARA	53	53	73	79	55	55	58
SAN DIEGO	78	125	114	95	89	80	93
SAN FRANCISCO	61	53	66	68	57	48	45
SAN JOAQUIN	28	27	33	39	26	27	18
SAN LUIS OBISPO	427	225	218	199	186	185	202
SAN MATEO	28	37	42	43	35	53	48
SANTA BARBARA	64	89	108	120	91	116	104
SANTA CRUZ	33	32	31	34	34	25	24
SHASTA	5	5	5	5	8	8	6
SIERRA	2	2	2	1	2	0	0
SISKIYOU	4	3	7	6	3	8	7
SOLANO	5	11	11	12	7	11	12
STANISLAUS	38	43	63	46	32	36	27
SONOMA	21	25	38	31	26	31	30
SUTTER	9	11	12	9	6	7	6
TEHAMA	5	4	6	8	3	5	3
TRINITY	1	0	1	2	1	1	2
TUOLUMNE	3	1	1	3	4	3	3
TULARE	56	56	68	67	53	42	55
VENTURA	33	46	50	47	36	38	41
YOLO	4	2	4	4	4	2	7
YUBA	7	11	5	6	3	2	5
OTHER STATES	231	301	390	307	219	206	197
FOREIGN COUNTRIES	21	31	54	48	60	123	133
U. S. TERRITORIES		34	59	76	52	49	46
	2185	2553	2902	2715	2199	2257	2259

NOT ALL STUDENTS REGISTERED AT THE SAN LUIS OBISPO CAMPUS WERE INCLUDED IN THIS SURVEY AS SOME CARDS WERE NOT AVAILABLE AT THE TIME THE STUDY WAS MADE. IN 1947 ACTUAL ENROLLMENT WAS 2229, IN 1948 IT WAS 2575, IN 1949 IT WAS 2909, IN 1950 IT WAS 2767, IN 1951 IT WAS 2213, AND IN 1952 IT WAS 2259. HAD THE BALANCE BEEN INCLUDED IN THIS STUDY, SOME ADDITIONAL COUNTIES WOULD BE REPRESENTED.

Summary of Enrollment Distribution Within the State

Following the trend which began in 1903 and has continued ever since, Cal Poly's enrollment is wide-spread throughout the state--in contrast to that of the regional state colleges. At the San Luis Obispo Campus 53 of the 58 counties in the state were represented in the fall of 1953. At the Kellogg-Voorhis campus fall quarter, 1953, enrollment distribution shows students from 32 of California's counties.

Enrollment by Classes and Curriculum Level
(San Luis Obispo Campus Only)

<u>Agricultural</u>	<u>2 yr Technical</u>	<u>3 yr Technical</u>	<u>Degree</u>
Freshmen	79	0	265
Sophomores	42	0	188
Juniors	0	10	170
Seniors	0	0	232
Fifth Year	0	0	0
Graduate	0	0	0
	<u>121</u>	<u>10</u>	<u>855</u>

Total Agriculture 986

<u>Engineering and Industrial</u>	<u>Technical</u>	<u>Degree</u>
Freshmen	0	403
Sophomores	0	262
Juniors	2	226
Seniors	0	146
Fifth Year	0	0
	<u>2</u>	<u>1037</u>

Total Engineering 1039

<u>Liberal Arts</u>	<u>Degree</u>
Freshmen	52
Sophomores	36
Juniors	50
Seniors	47
Fifth Year	0
	<u>185</u>

<u>Graduates</u>	
Agricultural Education	32
Education	<u>17</u>
	49

(All Total - 2259)

Enrollment of Veteran and Non-Veteran Students

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	<u>Veterans</u>	<u>Non-Veterans</u>	<u>Total</u>
Freshmen	174	625	799
Sophomores	126	402	528
Juniors	114	344	458
Seniors	134	291	425
Fifth Year	0	0	0
Graduates	<u>21</u>	<u>28</u>	<u>49</u>
	569	1690	2259

Enrollment of Married Students

Public Law 346	142
Public Law 16 and 894	8
Public Law 550	130
State Veterans	<u>33</u>

Married Veterans 313 Approximately 55.0% of veterans enrollment

Married Non-Veterans 256

Total Married Students 569 Approximately 25.2% of total enrollment

Comparative Enrollments by Years (San Luis Obispo)

<u>5-Yr. Intervals</u>	<u>1-Yr. Intervals</u>	<u>1-Yr. Intervals</u>
1903-04---- 20	1938-39---- 651	1946-47---- 1571
1908-09---- 151	1939-40---- 780	1947-48---- 2229
1913-14---- 194	1940-41---- 739	1948-49---- 2575
1918-19---- 110	1941-42---- 711	1949-50---- 2909
1923-24---- 114	1942-43---- 570	1950-51---- 2767
1928-29---- 399	1943-44---- 80	1951-52---- 2213
1933-34---- 239	1944-45---- 128	1952-53---- 2259
1938-39---- 651	1945-46---- 819	1953-54---- 2259

Comparative Enrollments by Years (Kellogg-Voorhis Campus)

<u>5-Yr. Intervals</u>	<u>1-Yr. Intervals</u>	<u>1-Yr. Intervals</u>
1938-39---- 113	1938-39---- 113	1946-47---- 280
1943-44---- (Closed W. War II)	1939-40---- 137	1947-48---- 393
1948-49---- 411	1940-41---- 136	1948-49---- 411
1953-54---- 423	1941-42---- 117	1949-50---- 438
	1942-43---- 69	1950-51---- 405
	1943-44---- (Closed W. War II)	1951-52---- 331
	1944-45---- (Closed W. War II)	1952-53---- 413
	1945-46---- (Closed W. War II)	1953-54---- 423

Kellogg-Voorhis Campus Enrollment

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Fall Quarter, 1953-54Enrollment by DepartmentsMajor

Animal Husbandry	112
General Crops Production	80
Fruit Production	43
Ornamental Horticulture	90
Horticultural Services & Inspection	79
Soil Science	19
Total	423

Enrollment by Classes and Curriculum Level

<u>Agricultural</u>	2 yr Technical	3 yr Technical	Degree
Freshmen	0	0	181
Sophomores	0	0	108
Juniors	0	0	71
Seniors	0	0	63
	0	0	423
Total Agriculture			423

Enrollment of Veteran and Non-Veteran Students

	Veteran	Non-Veteran	Total
Freshmen	21	160	181
Sophomores	22	86	108
Juniors	25	46	71
Seniors	31	32	63
	99	324	423

Enrollment of Married Students

Public Law 346	23
Public Law 16 and 894	9
Public Law 550	25
State Veterans	9

Married Veterans 66

Approximately 15.6% of veterans enrollment

Married Non-Veterans 39

Total Married Students 105

Approximately 24.8% of total enrollment

CALIFORNIA STATE POLYTECHNIC COLLEGE
KELLOGG-VOORHIS CAMPUS

Place of Legal Residence

<u>COUNTY</u>	<u>Nov. 10</u> <u>1950</u>	<u>Oct. 30</u> <u>1951</u>	<u>Nov. 18</u> <u>1952</u>	<u>Nov. 9</u> <u>1953</u>
Alameda	1	0	5	2
Contra Costa	1	0	1	0
El Dorado	0	0	1	1
Fresno	2	2	0	2
Imperial	1	5	1	4
Kern	3	2	2	2
Los Angeles	239	185	226	234
Marin	0	0	1	1
Mendocino	1	2	1	1
Merced	1	0	0	0
Modoc	0	1	0	0
Monterey	0	0	1	1
Napa	1	1	2	2
Orange	31	31	34	35
Placer	0	1	1	1
Riverside	11	15	35	29
San Bernardino	33	21	36	40
San Diego	13	9	16	19
San Francisco	0	4	1	1
San Luis Obispo	1	0	0	0
San Mateo	1	0	1	1
Santa Barbara	9	8	9	8
Santa Clara	2	2	1	1
Santa Cruz	1	0	0	1
Solano	0	0	1	1
Sonoma	1	0	0	0
Stanislaus	0	0	0	1
Sutter	0	0	1	1
Tehama	1	0	0	0
Tulare	5	3	1	0
Ventura	21	14	6	5
Yolo	0	0	1	0
Other States	16	13	10	12
U. S. Territories	2	1	6	6
Foreign Countries	<u>3</u>	<u>9</u>	<u>8</u>	<u>11</u>
Total	401	329	409	423

DEGREES AND CERTIFICATES

Number of Degrees and Certificates Granted
(June, 1953--both campuses)

<u>Division and Department</u>	<u>Bachelor of Science</u>	<u>Voca- tional</u>	<u>Tech- nical</u>	<u>Master of Arts In Education</u>
Agriculture				
Agriculture Engineering	25	1	5	0
Agricultural Inspection	13	0	2	0
Animal Husbandry	52	3	17	0
Dairy Manufacturing	3	1	1	0
Dairy Husbandry	11	1	4	0
Ornamental Horticulture	22	0	1	0
Poultry Husbandry	11	1	2	0
Crop Production, General	12	0	0	0
Citrus Fruit Production	7	0	0	0
Deciduous Fruit Production	6	0	1	0
Soil Science	13	0	1	0
Truck Crops	6	0	0	0
Field Crops	7	2	2	0
Engineering				
Aeronautical Engineering	10	0	0	0
Air Conditioning and Refrigeration	13	0	3	0
Mechanical Engineering	39	0	2	0
Electrical Engineering	15	0	0	0
Electronics & Radio Engineering	22	0	0	0
Printing	10	0	0	0
Architectural Engineering	28	0	1	0
Maintenance Engineering	1	0	0	0
Liberal Arts				
Biological Science	8	0	0	0
Health & Physical Education	7	0	0	2
Mathematics	2	0	0	1
Social Science	5	0	0	2
Physical Science	2	0	0	0
Education Agriculture	0	0	0	8
Agricultural Journalism	6	0	0	0
	<u>356</u>	<u>9</u>	<u>42</u>	<u>13</u>

Grand Total Graduates, June, 1953 -- 420

FACULTYCombined Campuses

204 persons are on the teaching staff at the San Luis Obispo and San Dimas (Kellogg-Voorhis) campuses. The following tables indicate the distribution of the teaching staff according to degrees, as of April 6, 1954.

<u>San Luis Obispo</u>		<u>Kellogg-Voorhis</u>	
Degrees:			
Doctorates	29	Doctorates	6*
Masters	71	Masters	20
Bachelors	53	Bachelors	11
None	14	None	0
Total	<u>167</u>	Total	<u>37</u>

*This includes one D. V. M. degree.

FUNCTIONS AND OBJECTIVES

While certain functions and objectives of the California State Polytechnic College are held in common with the other state colleges, there is ample official recognition that the functions of this college are not to be limited except within the boundaries established in the founding act. Examples of such official recognition of broadness of scope are:

"The primary function of the California State Polytechnic College is to educate young people in the arts and sciences, including agriculture, mechanics, engineering, business methods, domestic economy, teaching and such other branches as will fit the student for the non-professional walks of life." (Section 900, Adm. Code (1951) Title 5, Education, Chapter 1, Subchapter 4.)

"The California State Polytechnic College may, in accordance with the organic act establishing the college and upon recommendation by the Director of Education and approval by the State Board of Education, establish and maintain course patterns requiring college work of such length as is appropriate for the educational curriculum leading to each objective. The college may, upon recommendation by the Director of Education and approval by the State Board of Education, establish and maintain pre-professional curriculum patterns which require college attendance for the length of time, but not to exceed four years, appropriate to the objectives of each pre-professional curriculum." (Section 906, Adm. Code (1951) Title 5, Education, Chapter 1, Subchapter 4.)

"The California State Polytechnic College is an exception to the statement that the (state) colleges are primarily regional institutions. Although it by no means neglects the educational needs of its area, the institution is a state-wide institution in its appeal and student patronage." (Page 33, A Report of a Survey of the Needs of California in Higher Education, Strayer and Others, 1948, State Printing Office, Sacramento.

General Objectives of the College

The primary function of instruction at California State Polytechnic College is to impart to students those techniques and sciences necessary to perform successfully the occupations in which they will be employed. To balance this concentration on offerings designed primarily for occupational competence, the curricula also emphasize general education subjects which help the student to understand the world in which he lives, assist him to express himself, help him to live harmoniously with other people, and to assume his appropriate citizenship and community leadership responsibilities. Currently, the offerings at the San Luis Obispo campus are grouped under three divisions of instruction, as follows: Agriculture Division, Engineering Division, and Liberal Arts Division. The agricultural and general education offerings at the Kellogg-Voorhis campus are combined into one division for administrative purposes.

EDUCATIONAL PHILOSOPHY

The educational philosophy of the California State Polytechnic College is occupationally centered and is reflected in a plan of education sometimes described as "upside-down". This term, while perhaps misleading to some, is an outgrowth of the fact that a student who completes a four-year curriculum will have covered substantially the same material as that covered in a similar major in a typical agricultural and mechanic arts type college - but in a somewhat inverted order. The following outline of the Cal Poly Plan which was prepared by the Dean of Instruction for presentation at the 1953 Fall Staff Meeting, illustrates the college philosophy and particularly its effect on curriculum.

1. Occupationally centered curricula and methods geared to job requirements.
 - a. The educational program is occupationally centered in that the jobs for which students are being prepared are identified year by year.
 - b. Educational experiences offered are dictated by the requirements of the job rather than by the requirements of professional graduate schools.
 - c. Practical laboratory experiences under job conditions are emphasized.
 - d. Instruction is pointed toward increased competence in the managerial and technical jobs which arise out of changes in our agricultural, industrial, business, and social world.
2. Job preparatory skills early in the program.
 - a. The curriculum is "upside-down" in that major work designed to prepare for jobs begins in the freshman year and continues throughout the four years.
 - b. Introduction of major work early in the program:
 - (1) Provides the student with saleable skills in the field of his interest even though he may drop out of school before completing a full 4-year program.
 - (2) Gives motivation resulting in relatively fewer drop outs.
 - (3) Makes the student aware of the need for related sciences.
3. Supporting courses correlated with major instruction.
 - a. Through systematic committee study of supporting courses made by instructors who offer the courses working with those whose majors enroll in them.
 - b. Through planned correlation:
 - (1) Major courses can be developed to actually use the prerequisite supporting material.
 - (2) Supporting courses can be developed to actually provide the support determined to be essential.
4. Related general education throughout the four years.
 - a. General education courses are offered throughout the four years in order that concepts requiring greater maturity and experience can be understood by the student.
 - b. General education is planned to provide students with experience designed to develop competence as individuals, as citizens, and as effective community leaders.
5. Acceptance of placement and follow-up responsibility.
 - a. Placement of graduates and periodical follow-up visitations provide close contact with employer and graduate resulting in:
 - (1) On the job assistance to the new graduate.
 - (2) Better understanding of changes in the occupations for which the college prepares its graduates.
 - (3) Better balance between the "how" and "why" phases of instruction.
 - (4) More effective public relations.

Project System

The practical objectives of the occupational instruction in the college are realized in part through the use of "learn by doing" and "earn while learning" methods of instruction. Students practice in the laboratories and shops and on the ranch the techniques they have studied in the classroom. They are encouraged to undertake projects on a commercial scale which enable them to gain occupational competence and at the same time to earn part of the money to defray the expenses of their education. The project system leads students to put forth their best efforts to acquire further skills and knowledge so that they may earn more rapidly.

Early in 1953 the State Department of Finance requested the State Department of Education to prepare a statement of principles to guide in the establishment and operation of local foundations or non-profit corporations in the State College system.

The Department of Education called upon the Cal Poly administration to provide the leadership in developing such a statement of principles for all types of auxiliary organizations. It was felt that the more than twenty years of experience in handling funds used for student project financing and for cafeteria and dormitory operations at Cal Poly had resulted in guidelines that could be generalized to apply to the organization and operational policies of all State College Foundations.

Since October, 1953, a committee of State College representatives, under the chairmanship of Cal Poly's president, has been working to develop statements of principles for all auxiliary organizations which will be acceptable to all of the State Colleges, the Department of Education, and the Department of Finance. Guidelines for the study have been taken primarily from Cal Poly's Foundation "manual of operations," the State-Foundation lease under which Cal Poly's Foundation operates, and the College's administrative handbook which defines Foundation functions and areas of responsibility.

The first need for "foundation-type" operations at Cal Poly was an outgrowth of the project-method of instruction. The fund used for project operations began with a loan in 1931 from the Citizen's State Bank with faculty members acting as co-signers to protect the bank. Until 1933 students continued to borrow money through the bank to finance many of the projects. After 1933 the college's rapid growth made it necessary to provide a special project revolving fund to handle project operations.

Prior to 1931 the State operated the cafeteria and dormitories at Cal Poly. However, a growing deficit which reached a total of about \$9,000 made the Department of Finance refuse to continue state operation of cafeteria and dormitories. To continue these operations a Cafeteria-Dormitory Committee of faculty and students was established and all operations of cafeterias and dormitories were handled from 1931 until 1943 through a special Cafeteria-Dormitory Fund. During this same period, three separate funds were utilized to facilitate necessary financial operations not provided for in the State budget:

- 1) An agricultural project revolving fund, 2) the Cafe-Dorm Fund, and 3) an Incidental Fund.

In 1940, under provisions of Education Code 20354, a non-profit corporation was established under the name California Polytechnic School Foundation. During World War II the college conducted two different naval training programs, with financial arrangements handled by the Foundation. On September 1, 1943, a lease agreement was drawn up between the Foundation and the State Department of Education and State Department of Finance. It was at this time that the three funds were consolidated and included as operations to be financed by the Foundation. This lease agreement was for a period of five years and has been extended with little or no change except for dates.

Although Education Code 20354 did not, until 1953, require approval of the Director of Finance as authorization for activities conducted by a non-profit organization composed of students and/or members of the faculty of the college, the California State Polytechnic College Foundation Board of Directors has always obtained approval by the Director of Finance on all such activities.

The Cal Poly Foundation is a non-profit corporation organized to further the educational aims and administrative objectives of the college. Corporate powers are vested in a board of seven directors, chosen from the California State Polytechnic College Staff, who serve for a term of not more than four years. Directors are nominated for office by the President of the Board of Directors and the nominations are approved or rejected by members of the board.

The relationships of the College and the Foundation are subject to the provisions of the State-Foundation lease and have been defined in an agreement. This agreement pinpoints areas of responsibilities in respect to use of facilities, maintenance of facilities, provision of Foundation herds and flocks, provision of other services to the College, financing of projects, keeping of accounts and other acts or services that aid in instruction or service.

A Foundation manager, under direction of the Board, initiates and is responsible for carrying out services, and for establishing, conducting and accounting for the operation of Foundation properties. He manages the properties so that facilities are provided for instructional purposes as well as for such special student services as post office, infirmary, housing, feeding, etc.

STUDENT PERSONNEL DIVISION

The Student Personnel Division is a service organization designed to further the interests of students in all phases of their college life and work. Its services are integrated closely with the academic and co-curricular activities of the student body.

The Division serves students through programs in the following areas:

Guidance and Counseling

Activities

Admissions, including academic records, statistics, scheduling and evaluations.

Placement, including on-campus, off-campus and follow-up.

Health, including Health Center operation, environmental sanitation, and medical work for athletic teams.

Room assignment

Residence hall morale and supervision (other than maintenance and custodial work)

Intercollegiate athletics

Graduate Manager's office

Loans and scholarships

Alumni activities

Counseling Center Report

A high percentage of students continue to use the services of the Counseling Center. This past year there has been an increase in the number of students requesting this service on their own initiative. There is evidence to indicate that our general quality of counseling is also improving.

All of the new students are being invited to the Counseling Center for the "Freshman Interview". Quite a large number have come in before being invited.

Approximately 71 percent felt quite certain about their choice of major; twenty-eight percent felt uncertain hence needed vocational guidance. Thirty-three percent expressed a need to learn how to study. This includes information on actual study techniques as well as learning how to organize their time more effectively. This need has not been fully met to date. Approximately 40 percent felt a need for refresher work in mathematics - the results of the placement tests indicate approximately the same percentage. Approximately 35 percent of the students were placed in preparatory English as a result of the placement test. Thirty-four percent stated they had a reading deficiency. Forty-two percent felt they had a weakness in vocabulary and expressed a need for doing something about it.

This sampling of students was also asked to indicate the approximate time spent on studying various courses. The information revealed a great difference in the amount of time students study various courses.

Admissions and Records

Procedures have been established as guide lines to be followed in holding articulation meetings with California junior colleges. The course comparisons developed at such meetings apply if the student chooses to enroll at either campus and are helpful to the junior college student and counselor in planning the student's program. They then become the basis of the student's transfer evaluation. Articulation meetings were held with eight junior colleges during the year.

Student Activities

Although the student activity program of a campus does not change drastically from year to year, the year 1953/54 has given the college several important programs which are worthy of special mention.

(1) An **ACTIVITY TRANSCRIPT** was established to keep a record of a student's participation in activities. Each recognized activity evaluates and reports its membership on the basis of interest, cooperation, dependability, thoroughness, tact, and force and leadership. This record is an integral part of a student's personal folder and will be used in the placement program, scholarship-fellowship awards and in follow-up studies of graduates.

(2) **LEADERSHIP TRAINING** through conferences and non-credit courses is beginning to show results in the quality of leaders being elected to office and through the meetings they conduct. A two-day fall leadership conference off campus developed understandings and set goals, and a one-day spring conference on campus reported results of group activities. Quarterly extra-curricular courses in group dynamics and parliamentary procedure reached 92 students. Participation in conferences with students from other colleges continues to increase this year. Cal Poly was represented at conferences of: (a) National Student Association, Oakland; (b) California Intercollegiate Press Association, Sacramento; (c) Model United Nations, Los Angeles; (d) Pacific Student Presidents Association, San Francisco.

(3) A College Union Board was developed and recognized by the Student Affairs Council and a budget was set up to support the activities sponsored by this group. (Dances, convocations, outings, socials, movies, etc.)

(4) An Associated Student Body Finance Code was adopted to outline and define policies and procedures of developing, approving and extending the budget. Further, it establishes procedures for handling of other student affiliated accounts, and the responsibilities and authorities of the various groups and individuals concerned.

(5) The Associated Students established a Cal Poly Blood Bank which will be maintained at a level of 150 to 200 pints for the use of students and staff and their dependents.

The 22nd annual **POLY ROYAL** displayed to the public the educational offerings of the college and the results of the student-operated project system of instruction. This two-day event embraced 22 departmental displays and numerous special events from barbeques and rodeos to mathematics contests, carnivals and dances.

The annual **MUSIC TOUR** between the winter and spring quarters featured the College Glee Club and Dance Band in the northern Sacramento valley. The group performed to a combined audience of 18,000 people in 12 high schools, two colleges and two military bases.

Twenty nine issues of **EL MUSTANG**, the college weekly newspaper were published on a self-financing basis. A 188-page yearbook was published and distributed in April, with a "summer supplement" to be distributed in July which will cover the spring quarter activities.

Placement

Placement is the co-responsibility of the Placement Office and the respective department heads. The Placement Office provides central facilities and information service to students and employers. An effort is made at all times to have the employment process of educational value to the students.

Major stress during the past year has been on the following services

1. Coordination of visits to the campus by employers. Each employer representative, whether from a large firm or a small ranch, is assisted in meeting students who will fit the requirements of the position he has to offer, and also in meeting staff members who can advise him on the personal qualifications of the applicants. In turn, the staff is able to learn from the employer concerning employment trends and needs, information which is of great assistance in curriculum development.

2. Vocational information and counseling. The office has added considerably to its files of vocational material which is essential in informing students of opportunities which various companies have to offer and in counseling the student on job possibilities consistent with his abilities and training.

3. Follow-up program. A survey of graduates in all divisions to determine type of employment, name of employer and job title has been completed. This provides current information as to the actual work our graduates are doing in the field.

Also, a survey has been made of employers of our Agriculture Division graduates to measure the success of these graduates. The response on this has been most helpful and will provide fundamental information for further use in counseling and in the evaluation of the various curricula.

4. Teacher placement. To help meet the continuing demands for qualified teachers, the Placement Office has encouraged students of high caliber to enter the teacher training program and has worked with teacher candidates to inform them of opportunities and orient them in procedures and ethics in teacher placement. To assist them in the latter, a booklet, "Placement Office Pointers for Teacher Candidates," has been developed. Aid also has been given to student wives eligible for credentials by putting them in contact with vacancies in the schools in this area.

As a member of the Western Institutional Teacher Placement Association, the Placement Officer has served on a committee with school superintendents to develop a standardized teacher placement folder in answer to a request for standardization of such material by school superintendents.

5. Summer work. The Placement Office has expanded its program of summer placement with emphasis on helping students find work related to their major field and vocational goal. In many cases, agriculture, industry and business are setting up summer programs to employ undergraduates in a productive work program to bridge the gap between education and employment.

6. Part-time work. The aim has been to develop as many on-campus opportunities for employment as consistent with the needs of the college. Where possible, such employment is related to work in the major field. A central listing of off-campus jobs is also maintained. During the past year a decrease in the number of employment opportunities occurred when Camp San Luis Obispo became inactive.

Health Center

The work load in the Health Center in 1953-54 was six times that of two years ago. The admission physical examination has been greatly refined and made more comprehensive so it compares favorably with that given by some of the better clinics. The X-ray department has been fully installed with a registered X-ray technician, who also has had training in laboratory work. Recently, a plan has been developed wherein all films taken are reviewed by an X-ray specialist at two week intervals. The center looks forward to extending this type of service to other specialized branches of medicine.

A Clinical Laboratory has been established with facilities to do most of the regular clinical laboratory procedures. The newest equipment is a photo-electric colorimeter. Recognition of a hospital by the Hospital Division of the American Medical Association has been received and is the first step towards full accreditation by the Joint Hospital Groups. Each student entering the hospital is given a complete and thorough examination, including the laboratory procedures. The purchase of the electro-cardiogram, basal metabolism machine and diathermy prove to have been excellent investments, and they have paid for themselves several times in the short time they have been in use. An allergy testing facility has been established. The center hopes sometime in the future to have an electro-encephalogram to improve our diagnostic ability.

The tuberculosis survey conducted with the assistance of the State Department of Health in January was well worthwhile. Of 1,836 X-rays taken, 29 showed abnormal chest conditions. The persons concerned received complete examinations, including X-ray and laboratory work and were seen in consultation with our consulting staff and Dr. Thatcher of the Public Health Department. Two active cases were found; eight others were not active but will require frequent follow-up examinations. One case of Hodgkins disease was found, and three persons with cardio-vascular abnormality. We are on a constant look-out for tuberculosis on this campus, since one active case could contaminate a great number of people in a very short time.

Food handlers are given a complete and thorough examination.

The college continued to participate in 12 major sports. Approximately 15 per cent of the student body was active in them. The intramural program with over 30 basketball teams, 26 softball teams, 24 six-man football teams, as well as a number of other sports, provided wholesome outlets for many students.

The football team repeated as champions of the California Collegiate Athletic Association. In fact, the team was the highest scoring undefeated team in the nation. One player, center Stan Sheriff, was invited to participate in the Shrine Bowl Game in San Francisco and the Hula Bowl in Honolulu.

ACCREDITATION

The College is fully accredited by the Western College Association and the Northwest Association of Secondary and Higher Schools.

It is also accredited by the State Board of Education to give the training and make recommendations for the following credentials:

Special Secondary Credential in Vocational Agriculture
Special Secondary Limited Credential in Agriculture
Special Secondary Credential in Physical Education
General Secondary Credential with majors in: Agriculture, Health and Physical Education,
Life Science and General Science, Mathematics, Physical Science and General Science, and
Social Studies.

Work will begin shortly on the preparation of the application for reaccreditation by the Western College Association. The present accreditation expires in June, 1956. It is expected that this application will be done jointly for the Western College Association and the State Board of Education.

CURRICULUM DEVELOPMENT

The college is continuously striving to bring about improvements in curricula through every means available. Information concerning fields of employment and their requirements is obtained through the use of such methods as field trips, visitations and consultation with visitors from agriculture and industry, with recruitment officers, and with other educators. Suggested changes in courses or curricula resulting from such contacts are carefully reviewed by the deans of instruction to determine their value.

During the past year an extensive follow-up program was begun which involves both graduates and their employers. Information from this source is valuable since it deals with up-to-date requirements of agriculture, industry, business, and education. It points out both strengths and weaknesses in existing curricula and therefore may be used to bring about improvements in courses and curricula.

Since it is the desire of the administration that the college become co-educational as soon as possible, a study has been started on the curricular problems which result from such a step. This study is concerned with the possible use of existing curricula as well as additional curricula, such as homemaking education, physical education, and business education.

LIBRARY

The college Library maintained its steady growth during 1953 continuing its policy of expanding as rapidly as possible within the ability of the staff to process fully all materials received. The book collection contains approximately 44,000 volumes, and the periodical subscription list 490 current titles.

Average number of loans per student for the school year was 21.7 with a total circulation of 51,802. This figure of course does not show the heavy usage within the library. The actual use of the library has shown a very considerable increase in the number of students using reference materials, periodicals and documents in the reading rooms.

A handbook for students on use of the library is in preparation, and tests are being devised by the guidance center and the library staff to check the knowledge of new students and transfer students in library use to determine their needs for further instruction. The results of these tests will be of assistance in the preparation of a course in formal library instruction.

The educational approach used at Cal Poly not only prepares men for positions in the production field but endeavors to place special emphasis towards thorough training in those managerial skills and techniques which are becoming so very important in the changing agricultural picture. The knowledge of these basic factors in the agricultural industry not only enables the student to reach the top in industry but it also gives him a practical grasp of the significance of all agricultural processes, and further builds up a tolerant attitude towards the social and political problems faced by the industry.

The Agricultural Division is making a particular effort to contact lay persons in the production field to adjust the curriculum to fit the fast-changing agricultural methods and economic conditions. The graduates of this division are instilled with a full understanding of those basic factors involved in production, management and marketing, together with the necessary skills experienced in related subjects to make such a graduate an efficient agricultural producer and a valuable citizen in an agricultural community.

The Foundation program at Cal Poly is a flexible facility to provide for student projects in order that additional experience and practice may be secured to supplement regular production courses. Every effort is made to keep all college farm operations on a truly practical level, one which the students will experience in their field on graduation.

Highlights of a successful year's operations in the Division during 1953-54 follow.

Additions to Facilities

Improved facilities were provided during the year for maintenance of the dairy herds and for the college creamery operated by the Dairy Department. A new unit of dairy barns was completed during the year for the college breeding herd and now houses the 180 registered Guernsey, Holstein and Jersey cattle. It is located in the center of the College farm where more room for corrals and pastures is available. Included are a bull barn with modern insemination laboratory, judging pavilion, calving barn, milk cow feed and shelter barns and milking barn. The latter is equipped with floor sprinklers to wash the cows, the latest pipe-line model milking machine and an insulated milk tank trailer. The milking machine takes the milk directly from the cows over a cooler in the milk house where it flows by gravity into the tank trailer outside. A dormitory which houses students who work regularly at the dairy has been moved from the site of the old dairy unit to that of the new. The dairy project farm has been improved by the construction of new corrals and roads.

The College creamery has been equipped with milk pump and large refrigerated storage tank where the milk may be stored in bulk as it is brought from the dairy farm for processing and distribution. A new and larger homogenizer has been purchased with adequate capacity to process the milk sold on the campus.

A new unit was completed for the Poultry Department also during the year and all of the 1954 flocks are being raised at the new location. Facilities at the new plant include new hatchery, a special purpose rooms, and a new shop and feed building. The new unit will provide equipment for approximately 5,000 layers and breeding birds in addition to well balanced equipment for maximum teaching needs.

The Crops Department added several new varieties of new peaches, dwarf peaches, grape root-stock varieties, and apples to the 200 varieties of fruit in the College orchards. A honey laboratory and fruit handling building consisting of a Dallis hut on concrete base equipped with water, water heating, and electrical connections was completed. Before July 1 an additional reservoir will be installed near the field crops and truck crops projects. This reservoir will facilitate irrigation from two sources at the same time and will be very helpful in the project program.

The Soil Science Department devoted time during the year to final development of plans for the Science and Classroom Building in which it will have space on completion of the structure in the fall of 1955. Several essential pieces of laboratory equipment were added to the departmental facilities.

The Agricultural Engineering Department also has been considering plans for the new building for that department which the State Division of Architecture is designing for occupancy in the fall of 1955.

Graduates of the Agriculture Division continued to be in good demand for employment. Aside from those called to military service immediately upon completion of their college course, 90 per cent of the agriculture graduates in 1953 whose occupations are known are employed in the field of their major. In the Dairy and Soil Science Departments the placement was 100 per cent in the major field.

In line with the primary objective of the Animal Husbandry Department to provide training for livestock farmers and ranchers, the farm and the ranch have claimed the largest percentage of its graduates. The remainder of the Animal Husbandry graduates have entered industries and services allied to livestock production and agricultural teaching at the high school or college level.

Graduates of the Agricultural Engineering Department have been employed in the farm equipment industry, soil and water conservation, irrigation work, teaching, and by large mechanized farms where a practical knowledge of agriculture combined with mechanical and engineering know-how are important.

Crops Department majors are engaged in farming and supervision of farm operations, teaching agriculture in high schools and junior colleges, and in the seed industry. Many work as fieldman for such firms as the California Rice Growers Association, the sugar beet companies, and for various commercial crop pest control and fertilizer firms.

The Dairy Department has been unable to meet the demands of the dairy industry for its graduates. The shortage of applicants for these commercial jobs is due in part to the fact that a considerable percentage of graduates operate their own enterprises or obtain positions as teachers of agriculture.

The majority of the year's Ornamental Horticulture graduates were called to military service immediately after completion of their college course. Those who were able to accept employment were equally divided between the teaching of agriculture and employment in large nurseries in the Bay area.

The Poultry industry is such a rapidly growing branch of agriculture in California that it is requesting more Poultry Husbandry graduates each year. Requests for graduates exceed the number of students prepared in this field. The number available for employment is reduced by the fact that many poultry graduates find an opportunity to start ranches or other businesses of their own. Employment opportunities for poultry graduates are with broiler and egg producing ranches, hatcheries, poultry and egg processing plants, distributing and marketing organizations, and feed, supply, and equipment companies. Each year several graduates enter the agricultural teaching profession.

The Soil Science Department made a study during the year of the employment of its graduates which revealed not only that all were employed but that the pattern of employment correlated closely with the objectives of the departmental curriculum.

Student Project Operations

Student projects of a commercial nature were carried on by students of the Animal Husbandry, Agricultural Engineering, Crops, Dairy Husbandry, Ornamental Horticulture, and Poultry departments. These projects are of such nature as to give students practical application of their major work in an organized operation. The projects involve managerial skills as well as the skills connected with the production in the various fields.

In the Animal Husbandry Department approximately 180 students carried on feeding enterprise activities.

In beef cattle, approximately 65 students fed and marketed 300 head of beef cattle. These projects were marketed at livestock shows, union stockyards, local slaughter plants, and at the college meat lab. Total sales were approximately \$60,000.

Sixty students carried on swine feeding projects, marketing approximately 600 animals with sales value of \$30,000.

Fifty-three students carried on sheep projects involving some 500 head of animals with sales value of \$15,000.

In the Dairy Department, 24 students carried projects at the student project dairy farm. Projects included approximately 100 animals with 60 cows and 40 head of young breeding stock.

Total milk sales through the college creamery amounted to approximately \$24,000. In addition, several senior students completing their college work took home approximately 30 head of breeding cattle started as projects while at college.

Students in the Agricultural Engineering Department completed a large number of construction projects including trailers, feed lot equipment, and miscellaneous farm equipment for their home ranches. They were employed also on construction projects of leveling new sites for the Dairy and Poultry units.

The Crops Department had 11 students who completed field crop projects. These projects included sugar beets, 22 acres of oat and vetch hay, 17 acres of corn silage. Sugar beet yields averaged 22 tons per acre, oat and vetch hay 2 1/2 tons per acre, and corn silage in excess of 20 tons per acre. In the truck crop area, projects were completed by 12 students. The projects consisted of two acres of peas, 1 1/2 acres of tomatoes, 1 1/2 acres of celery, two acres of sweet corn and eight acres of miscellaneous vegetables. The produce from these projects was marketed through the crops store, the college cafeterias, local stores and a Los Angeles commission firm. Operations of this kind give students a picture and understanding of the full scope of the industry.

In the Poultry Department, 37 students completed over 50 projects with a gross income of \$28,186. These projects included laying hens, incubation and brooding, breeding stock and brooding and fattening meat birds. They also brooded and marketed over 400 turkeys. All poultry students had an opportunity to participate in all forms of commercial poultry management and production.

Twenty-four Ornamental Horticulture students carried on projects of growing bedding plants and ornamentals, with the gross sales value of \$3,100.

Special Activities

In addition to making many field trips, students and faculty of the Agriculture Division engaged in many related activities aside from the usual procedures of the classroom, laboratory and College ranch. Animal Husbandry students have exhibited livestock at major fairs and expositions in the state and conducted a student managed show in connection with Poly Royal. Judging teams from both the Animal Husbandry and the Dairy Department competed in national and international contests.

Crops Department personnel supervised and conducted the weed control and pest and rodent control program for the entire College farm. These operations were used as a basis for some of the teaching laboratories in courses concerned. The Department made its facilities available for three of the State Future Farmer Judging contests. All its staff participated either as managers of the contests or as judges. The Cal Poly orchard furnished the trees for the Tree Judging contest and vegetables grown in the program of the Crops Department provided part of the basis for classes and identification in the Vegetable contest. Thirty-nine teams from all parts of California participated in the contests.

The Ornamental Horticulture Department Club was active in area flower shows and received numerous special awards. The Club was particularly active in community projects and furnished decorations for many occasions. Five majors in the department were clerks for the jurors at the California International Flower Show.

Students from the Soil Science Department visited ten high schools to demonstrate the technique of land judging. This activity was so well received that it will be extended to other sections of the state next year. In cooperation with the Crops Department, Soils Science established and carried out a program of cover-green manuring for all the orchards on the College farm.

A growing number of students from many foreign countries are being sent to the College sponsored and financed by various foreign aid programs to study mechanized farming methods with particular emphasis on tractor and farm machinery operation and maintenance. The largest group (13) is from Turkey with others from Palestine, Indochina, South America and other areas. The Agricultural Engineering Department has done considerable pioneering in this field of instruction and already the results of the practical training given these men from other nations so that they may improve the agricultural production of their home countries is evident in several areas of the world.

Top quality breeding herds and flocks are maintained by the Animal Husbandry Department not on a "show case" basis but as working tools for use in laboratory periods for the training in managerial skills and practices and as producing units for economic analysis and study in the classroom. The other facilities of the department, including barns and corrals, feed lots, feed mill, stock pavilion and slaughter plant were all working classrooms during the year for student usage. The department is cognizant of the transition of the age-old occupation of animal husbandry to a modern efficient mass production industry and the curriculum is designed to adapt and train the undergraduates to fit the modern picture.

Because of a critical need for trained men in floriculture, the Ornamental Horticulture Department has set up a new course in Floricultural Crop Production. A large gift of greenhouse rose plants was received to aid in the instruction in this course. The acting head of the Ornamental Horticulture Department, was on sabbatical leave during the year to study for his Master of Science in Horticulture degree at Ohio State University.

During the year 1953-54 the Engineering Division continued to increase in size, prestige and effectiveness of instruction. Much of the impetus for the advancement of the Division came from the action of the State Board of Education itself. At its meeting on July 9 and 10, 1953, the State Board of Education approved the request of the California State Polytechnic College for offering the Bachelor of Science degree in engineering with majors in the following fields: Aeronautical Engineering, Air Conditioning and Refrigeration Engineering, Architectural Engineering, Electrical Engineering, Electronic and Radio Engineering, and Mechanical Engineering. At its meeting on January 4 and 5, 1954 the State Board of Education officially approved the curriculum of the Printing Department. These decisions mean that the Engineering Division as a whole now bears the official approval and sanction of the State Board of Education.

As a result of this approval, the Division was encouraged to work enthusiastically to produce a maximum number of improvements and new ideas. Some of the more interesting developments are summarized in the following statements:

Restatement of the Divisional Objectives

Although there was no departure from the well-established approach to engineering education at the College, the philosophy and process were crystalized into a summary statement which clearly indicates the aims and objectives of the Division. These are:

- a. To teach a thorough understanding of physical science, mathematics, and economics.
- b. To teach the application of these laws to engineering problems involving structures, machines, processes, circuits, and systems.
- c. To teach good judgment in the application of these laws.

Emphasis is placed on the phases of engineering sometimes called the "practical" phases which are concerned with planning, product development, production, operation, management, service, and sales.

Belief was reaffirmed in the four characteristics of the engineering program which help to meet the above objectives and to ensure a well-rounded engineering graduate:

- a. All freshmen have required courses in the shop and laboratory where they learn to use tools, instruments, and machines characteristic of their major. Initial emphasis is on skills and techniques which provide background for more advanced courses.
- b. The student begins his major work early in his freshman year. Emphasis on the major continues throughout the entire four year program together with the related work in mathematics, science, and general education courses.
- c. Fundamentals and basic principles are taught in terms of typical problems encountered in industry. In this way, students learn general principles through practice in applying them to practical situations. Each student engages in constructive project work which results in an appreciation of the mechanical, analytical, and economic aspects of engineering.
- d. All majors are required to take courses in economics and the social sciences because engineers work with men and money as well as materials and equipment.

One particular point of interest in the restatement of divisional objectives is the heavy emphasis placed on the element of good judgment. Throughout the entire division a concentrated effort is being made to make certain that each course makes a contribution to the growth of the student's ability to exercise sound judgment in making his decisions. This is in keeping with the opinion of responsible men in industry that the success of an engineer depends not only on his thorough understanding of engineering principles but on his ability to make sound decisions based upon these principles.

Industry's appreciation of the practical training offered at Cal Poly was reflected in a series of gifts ranging from contributions to a scholarship fund to large pieces of instructional machinery.

In the Air Conditioning and Refrigeration Engineering Department two \$1,000 scholarships have been established for the year 1954-55. Donors to the scholarship fund are: Drayer-Hanson Corporation; C and S Equipment Company; Richard S. Dawson Company; Hess, Greiner and Pollard, Inc.; Industrial Refrigeration Company of California; Refrigeration Engineering, Inc.; Thermal Products Company; Wescott and Holliday, Engineers. One \$1,000 scholarship and another for \$350 were awarded to entering students in the fall of 1953. Donors of these scholarships were Hess, Greiner and Pollard, Inc.; Thermal Products Company; Refrigeration Engineering, Inc.; Western Fibrous Glass Company. The Air Conditioning and Refrigeration Engineering Department has also received excellent cooperation from the Farr Company and Pur-Air Corporation who have from time to time supplied the College with expendable filters for laboratory experiments.

In the Electronic and Radio Engineering Department a \$300 scholarship sponsored by the West Coast Electronics Manufacturers' Association was awarded to a freshman student in the fall of 1953. As a result of the College's cooperation with the WCEMA, the value of the scholarship has now been increased to \$600 for the 1954-55 school year.

The Aeronautical Engineering Department received a \$150 scholarship grant from the Exchange Club of San Luis Obispo.

The Welding Department has recently received a \$300 scholarship to be awarded to a student registering in Mechanical Engineering for the year 1954-55. Donor of the scholarship is the Victor Equipment Company.

The Mechanical Engineering Department was the recipient of a special chrome-plated petroleum pump valued at \$500 from the Axelson Manufacturing Company. This pump is used for demonstration purposes in courses covering petroleum production.

The Printing Department not only received a Heidelberg printing press from the Heidelberg Western Sales Company valued at \$5,200 but also was assisted in the installation and initial operation by a factory engineer who spent three days on the campus at company expense.

Student Activities

With the increasing enrollment in the Engineering Division it has become necessary to take special steps to ensure that the students in all departments work together harmoniously. To accomplish this result an Engineering Club Council was formed consisting of representatives of each engineering department club. This Council acts as a coordinating body in promoting student activities of a divisional nature. Examples of coordinated activities are an Engineering Division magazine which is published annually at the time of commencement and a special division-wide program arranged in recognition of National Engineers' Week.

At the request of engineers in the welding industry, a student chapter of the American Welding Society has been recently established on the campus.

Students were very active in developing exhibits for various engineering expositions. Examples of these exhibits are: Architectural Engineering exhibit at AIA Convention in Coronado; Welding Department exhibit at the Western Metals Congress in Los Angeles; Electrical Engineering exhibit at the Electrical Industry Show in Los Angeles. At this latter show, the Cal Poly exhibit was given first award of \$500 for being the outstanding college exhibit. The \$500 is to be used for scholarships for worthy students.

No significant changes were made in the Engineering faculty during the past year. The summer of 1953 was marked, however, by continued efforts on the part of faculty members to keep themselves up-to-date by taking industrial employment during the summer months. Companies at which faculty members worked during the summer were: Douglas Aircraft Company, El Segundo; Hilburg Hengstler and Turpin, Los Angeles, air conditioning firm; Wm. D. Holdredge, Architect, San Luis Obispo; W. F. Cody Architect, Palm Springs; National Bureau of Standards, Secret Missile Section; Pacific Gas and Electric Company, San Francisco; Fluor Corporation; Los Angeles; X-Ray Engineering Company, Mill Valley; Division of Highways, San Luis Obispo.

Although the program at Cal Poly is not intended to produce many publications, occasionally faculty members are asked to prepare articles for technical journals. Examples of these during the 1953-54 year were: "The Human Element in Welding" by Richard C. Wiley, The Welding Journal, November, 1953; "Good Maintenance and Operator Procedure in Cold Storage Plants" by Harold P. Hayes, Industrial Refrigeration, October, 1953; "Ceramic Stress Coating" by Harry J. Jackson, Machine Design, March, 1954; "Electronic and Radio Engineering Department. California State Polytechnic College" by Clarence Radius, The Bulletin of the Institute of Radio Engineers, April, 1954; "Electronic Engineering Salaries" by Clarence Radius, Tele-Tech, February, 1954; "The Economics of Air Purification" by Norman Sharpe, Refrigerating Engineer, October, 1953.

Placement

Placement remained at the high level which has been characteristic of engineering for the past three years. At this writing, virtually all of the engineering seniors have a choice of at least two positions. Since the list of companies who sent recruiters to the campus would be too long to include in this report the following companies are listed merely as an example of companies who have made offers to members of this year's senior class: Lockheed Aircraft Corporation; Southern California Gas Company; Fluor Corporation; RCA; Pacific Gas and Electric; General Electric; Westinghouse; Mergenthaler Linotype Company; Ludlow Typograph Company; Minneapolis Honeywell; Frigidaire Corporation; Linde Air Products; Douglas Aircraft Company; State of California, Division of Architecture.

Reports from employers continue to remain enthusiastic, the common expression being "Send us more".

Although no exact figures are available for summer employment of students, this, too, remains at a high level. As an illustration, the Printing Department each summer places virtually all of its students in jobs in the printing industry. This practice, of course, is encouraged to the utmost not only to teach students to make themselves self-supporting but to encourage them to gain valuable industrial experience.

Enrollment

Although enrollment figures have been mentioned previously in this report, there are several points worthy of additional note. The Engineering Division showed an enrollment increase of about eight per cent in 1953 over the corresponding date of 1952. Most significant was the very large increase in the Electronic and Radio Engineering Department. This department now has the largest enrollment of any engineering department. Also showing a very marked increase was the Electrical Engineering Department. The increase in enrollment is attributed partly to the nation-wide demand for engineers and partly to the fact that Cal Poly graduates have established a sound reputation for the College. A most encouraging sign is the fact that many employers of Cal Poly graduates are now sending their own sons to the College to study engineering.

Unfortunately, the high increase in enrollment has tended to overload certain of the College facilities. Most overloaded of these is the Machine Shop which operates laboratory sections from 8:00 to 11:00 A. M., 12:00 to 3:00 P. M., 3:00 to 6:00 P. M. daily and 7:00 to 10:00 P. M. four nights a week. The Electronics Department also found it necessary to hold night classes to accommodate the large influx of students.

It is interesting to note that almost fifty per cent of the engineering students entering in the fall of 1953 were transfers from other institutions primarily junior colleges. The caliber of these students was quite high and indicates that the Cal Poly program is drawing more and more students of particularly high caliber.

Two innovations in instructional procedures are worthy of particular note. One of these was the development of a complete master plan for the city of Morro Bay. With the aid of Simon Eisner, nationally known city planning consultant, and under the supervision of the departmental staff, the senior students in Architectural Engineering developed the master plan as a coordinated class project.

The other outstanding innovation was the undertaking of a parking survey for the city of San Luis Obispo. Working with the local Chamber of Commerce, senior students in Architectural Engineering are helping to solve the city's parking problems.

Both of the above are illustrations of the learn-by-doing philosophy of the College.

Buildings, Facilities, and Equipment

The Mechanical Engineering Department is looking forward to the completion of the new boiler plant and Mechanical Engineering Laboratory which is expected to be ready for occupancy by July 1. This new building will relieve a crowded laboratory situation and enable the department to put into effect many new ideas which have been held in abeyance because of a lack of adequate facilities. One highlight of the move to the new laboratory will be the fact that students will do the major portion of equipment installation as part of the Cal Poly project system of instruction.

As a result of the large increase in enrollment in the Electronic and Radio Engineering Department, a temporary building will have to be equipped as an electronics laboratory. Money for this has been approved as a CIRE project.

Numerous pieces of equipment were developed by students in their senior project work. Examples are: small demonstration wind tunnel; vacuum pump tester; fuel flow tester; hydraulic pump tester; (the last three items were obtained from war surplus and are being reconditioned by the students); refrigerator coil test unit; phase analyzer; radio frequency power unit; Polariscope for photoelastic studies of structures and structure members; and laboratory equipment for vibration studies.

Objectives of the Division

The Liberal Arts Division always has as its main purpose the support of the major programs in Agriculture and Engineering. Because of the Cal Poly philosophy and the fact that this College look upon citizenship as a main vocation of every American, it has a strong program in general education that is developed in the same way as our major curricula, by analyzing the job and programming to meet its needs.

After the Liberal Arts Division has met the general education and support needs of the students in the other divisions, it undertakes the equally important jobs of producing its own majors and carrying out a program in teacher education. These two functions are becoming increasingly important as the number of majors and teacher candidates increases.

The place of the Liberal Arts Division in the overall program of California State Polytechnic College is best measured by the fact that it serves every student in the college throughout his four years of higher education. The majors in this division are very important to it, but its prime function is to try to bring together the entire educational program of the college into a unified "learn by doing" experience.

Teacher Education

The Teacher Education program is divided into two general areas. A program in the Liberal Arts majors leads to the General Secondary Credential and the Special Secondary Credential in Physical Education. Many of the graduates with the latter credential go into elementary teaching, although now that teacher shortages are developing in secondary education most of them are staying in higher schools. The General Secondary candidates are increasing in number, and a large portion of them are taking jobs in teaching. As young men are attracted to teaching as a profession we are able to develop a stronger general secondary program and produce an increasingly large number of teachers for the schools of California.

Most of the current majors in the Health and Physical Education Department are working toward teaching credentials. The number of majors in Social Science who are preparing for careers in teaching is increasing rapidly. Smaller groups of majors in the Biological Science Mathematics and Physical Science Departments are pursuing programs preparatory to teaching. Many students working toward the General Secondary Credential now are using Biology as a teaching minor. This program is especially popular with students whose major is Health and Physical Education.

The other major area in Teacher Education produces teachers of Agriculture. This program has as its objective the development of graduates holding the Special Secondary Credential in Vocational Agriculture and the Special Secondary Limited Credential in Agriculture. The program is developed in close cooperation with the State Bureau of Agricultural Education and the Agriculture Division of the college. The program in Agriculture teaching has been designed in such a way that the student receiving his credential has highly developed skills in teaching as well as a solid foundation in Agriculture as a basis for his professional activity.

The Masters Degree

To date the California State Polytechnic College has granted thirty masters degrees in Education. This number will be approximately forty when this year's candidates have completed the requirements for the degree. While subject-matter competence is included in the program for the Master of Arts Degree in Education, its main emphasis is on giving teachers better instructional skills.

Reserve Officers Training Corps

With the end of warfare in Korea, enrollments in ROTC have decreased slightly. The program at Cal Poly is a voluntary one and is affected, therefore, by the immediate military situation. Despite this fact, total enrollment in the unit for 1953-54 is approximately the same as that for the previous year. The unit received a superior rating at its first Federal Inspection in 1953 and gives evidence of repeating this year. The full four-year program of the Military Science and Tactics Department will be in effect in 1954-55, one year ahead of schedule. The Army's Branch General ROTC unit at Cal Poly is based on a philosophy of careful selection and the production of outstanding graduates, both military and academic.

The Biological and Physical Science faculties have been planning the use of facilities in the Science and Classroom Building which should become available in the fall of 1955. The Biological Science Department has been enlarging its botanical garden also.

Plans for a gymnasium annex for women students are complete and when this addition is completed the College will have available a Physical Education plant that can be used for the present male enrollment and a limited number of women students. A new boxing room has been added to the facilities of the Health and Physical Education Department and was used for the first time in 1953-54. Situated in the Field House, it provides additional space for the boxing team and for boxing instruction in the Physical Education program.

Service to Co-Curricular Activities

The Agricultural Journalism Department has worked closely with the student body publications (the weekly newspaper and the yearbook) and with the student news bureau. Departmental majors provide most of the personnel for these activities which are integrated closely with the regular courses of the department. The department also has provided field teams to handle publicity at fairs and shows throughout the State and at the annual meeting of the State Farm Bureau.

Although the Music Department has no major students as many as 400 students have participated during the year in the activities of the musical organizations under its direction. All these groups the Glee Club, Collegiate Quartet, Majors and Minors, Collegians (dance band), and the marching band have had very active programs throughout the year providing entertainment on and off the campus.

The English Department has supervised public speaking activities of the entire student body and the Health and Physical Education Department has performed a similar function in connection with the 12 sports in which students of the College engage in intercollegiate competition and with the extensive intramural sports program.

Double Majors

Curricular programs making possible completion of majors in a Liberal Arts department and also in a department in another division are proving increasingly popular. Mathematics majors select a double major from the engineering fields and thus become exceptionally qualified to meet the demand of industry for men qualified in mathematics. Agricultural Journalism majors, all of whom take many courses in agriculture as essential background, may elect double majors from the agriculture departments thereby acquiring preparation for an even more sharply specialized field of agricultural journalism employment.

Placement of Graduates

Teaching is the occupation entered by the largest group of Liberal Arts graduates. Government agencies and industry, however, currently are employing the graduates of the Biological Science, Mathematics, Physical Science and Social Science Departments. Health and Physical Education graduates also find employment with government agencies.

Agricultural Journalism, newest department in the Liberal Arts Division, graduated its first class in June, 1953. The work these seven men are doing indicates the wide range of careers for which a degree course in Agricultural Journalism prepares. Two are on the advertising staff of the Santa Maria Times. Another is a public relations free lance in Los Angeles. Jobs of the others are: editor of livestock magazine, field representative of livestock magazine, chief photographer for a TV station, secretary-manager of a county chamber of commerce.

Other Departmental Activities

The Health and Physical Education Department will be host in May, 1954 to a state-wide conference of the California Driver Education Association. The annual Physical Education Workshops for men and women met on the campus under auspices of the department in the summer of 1953 and will do so again in 1954. In conjunction with the Health Center, the department is carrying out a program of physical achievement testing which has produced excellent results by discovering those students who need corrective work and placing them in special classes. The Mathematics Department conducted a mathematics contest for high school students in connection with the 1953 Poly Royal in which 11 schools had representatives competing. The venture proved so successful that it is being repeated this spring on an enlarged scale which will permit 25 to 30 schools to participate.

California State Polytechnic College has operated a branch campus at the Voorhis Unit in San Dimas since 1938 and at the Kellogg Unit in Pomona since 1949. These two units just one air-mile apart, are administered jointly as the Kellogg-Voorhis Campus and carry out the same educational philosophy, pattern of courses, and requirements as does the Agricultural Division of the college at San Luis Obispo.

The Kellogg-Voorhis Campus offers three-year programs of instruction in Fruit Production, General Crops Production, Horticultural Services and Inspection, and Ornamental Horticulture. Two-year programs of instruction are given in Animal Husbandry and Soil Science. Students seeking the Bachelor of Science degree are required to transfer to the San Luis Obispo campus to complete their degree requirements.

In addition to work in the six agricultural majors the Kellogg-Voorhis Campus offers instruction in related agricultural subjects and in such liberal arts areas as Biological Science, English, and Journalism, Health and Physical Education, Mathematics, Music, Physical Science, Psychology, and Social Science.

Information concerning current enrollments at the Kellogg-Voorhis Campus may be found on page 6 of this report, and building plans are included in the section on Major Construction Program on page 27.

Administrative Developments

The first phase of a ten-year planning program for the development of the Kellogg-Voorhis Campus was implemented during 1953-54. College representatives worked closely with representatives of the State Division of Architecture and the State Department of Finance to complete plans for the first new building to be constructed at the Kellogg Unit. Pending the completion of this and other buildings, present facilities at the Kellogg-Voorhis Campus limit enrollment to approximately 400 students.

To make for the greatest efficiency in the joint operations of the Voorhis Unit and the Kellogg Unit, a plan of functional organization was developed and modified during the year. The executive dean, who is the chief administrative officer on the Kellogg-Voorhis Campus, reports directly to the president. The dean has operating under his direction personnel who are responsible for the operation of five main areas of activity -- the Agricultural Division, the Related Services Division, the Student Personnel Program, the Accounting and Stenographic Department, and the Maintenance and Operations Department. All activities and personnel of the Kellogg-Voorhis Campus are assigned to one of these areas.

The conference committee program, introduced two years ago, has been continued and has worked well with the functional organization of the campus. Every member of the staff has a committee assignment along departmental lines, and a semi-monthly staff bulletin reports all committee actions. Final approval on a committee recommendation is given by a top administrative committee whose membership includes the executive dean and his five administrative assistants. In addition, three staff conference groups which cut across departmental lines have been established -- the Instructional Council, the Student Personnel Council, and the Public Relations Council.

To improve coordination between the main campus at San Luis Obispo and the Kellogg-Voorhis Campus, a liaison program was instituted this year, providing for meetings between personnel handling similar problems at each campus.

A fire of unknown origin completely destroyed a large hay barn at the Kellogg Unit on November 10, 1953. Damage was estimated at \$25,000. Emergency funds were obtained to rebuild the feed mill to purchase needed equipment, and to hire additional student labor.

Three new employees were added to the staff -- a registrar, a stenographer, and a clerk-typist.

The Kellogg-Voorhis Campus was visited by the State College Agricultural Education Survey Committee on March 16 and 17. The group, consisting of outstanding representatives of various areas of agriculture, met with representatives of the college, toured both units, and talked with students and staff members. They were supplied with materials outlining the educational program and providing information concerning teaching methods and facilities, staff qualifications, and student success after graduation.

Second-year courses in Animal Husbandry and Soil Science, the two newest majors at the Kellogg-Voorhis Campus, were offered during 1953-54. Instruction in Animal Husbandry was expanded to include work with sheep and swine as well as beef cattle, and two new instructors were added to this department to handle these specialties.

Application of the staffing formula made it possible for the Kellogg-Voorhis Campus to increase the instructional staff from 29 to 37 instructors for the 1953-54 school year. In addition to the two instructors in Animal Husbandry, instructors also were obtained for work in the fields of Agricultural Engineering, Biological Science, Economics, English, Mathematics, and Poultry. A staffing formula also was applied to the library, indicating a need for additional help in that area.

The president and other administrative representatives of the college met with administrators of eight Southern California junior colleges on December 15, 1953. Mutual problems of articulation were discussed at this meeting, and it has been followed by meetings with individual junior colleges to facilitate transfer of students from one institution to another.

A survey to determine the possible need for a major in Poultry Industry on the Kellogg-Voorhis Campus was instituted and is being continued. It is anticipated that similar studies in other areas may be developed from time to time.

Instructors are continuing to write, evaluate, and rewrite expanded course outlines for each course and achievement lists and job lists for each major curriculum. Efforts are now being directed toward developing even greater integration between major departmental courses and related liberal arts courses.

Project Operations

Additional student projects, particularly in Animal Husbandry have been made possible through increased staff. Continued emphasis has been given to this important area of instruction with projects in Ornamental Horticulture, General Crops Production, and Fruit Production.

Special Services

A new activity introduced this year was a special course in Ornamental Horticulture for high school agricultural teachers. Twenty-five teachers attended the class which offered eleven two-hour sessions through April, May, and early June. The Pest Control Operators of California again held their pest control conference at the Voorhis Unit during the Christmas holiday with 110 persons in attendance. The Arabian Horse Association of California held its spring All-Arabian Horse Show at the Kellogg Unit. A Light Horse Judging Clinic, sponsored jointly by the college and The Western Livestock Journal, was a one-day event at the Kellogg Unit during the summer vacation and attracted 100 participants. The fourth annual Agricultural Education Field Day was held on April 3 at the Kellogg Unit, with more than 1,000 high school and junior college agriculture students competing in various judging events.

The college also cooperated with the Young Farmers Association, the Future Farmers of America, and other groups in making facilities available for many of their activities.

MAJOR CONSTRUCTION PROGRAM

The old axiom, "It takes time to build," certainly is applicable to the State College Building Program and Cal Poly's program is no exception. The report on the current status of the college building program embraces both the San Luis Obispo and the Kellogg-Voorhis campuses. At San Luis Obispo it is the problem of building a new campus within an old one and at the same time keeping the old one operating, even at an accelerated rate. At Kellogg-Voorhis the problem is to continue operating the overcrowded Voorhis Unit plant for some 450 students in certain limited agricultural majors while at the same time maintaining the Kellogg Unit farm and pushing for completion of plans for the major construction that must be secured to serve the first contingent of 700 students planned there for the Fall of 1956.

In the following paragraphs is a more specific explanation of the building program status at San Luis Obispo and Kellogg-Voorhis.

In the 1952 legislative session a total of \$2, 636, 000 was appropriated for the following major construction items: Science & Classroom Building, Site Development & Site Clearance in connection with the Science Building and the Central Boiler & Power Plant which had been financed previously. During this past year working drawings for the Science Building have been developed and the construction contract along with site clearance for the building is scheduled to go out to bid this April. A completion date of August 1, 1955 has been requested in order that the building will be available for use in September, 1955. Several buildings have been moved already or are under contract to be moved from the site of the new building. These include: Bull Barn, two student dormitory cottages, and the Dairy Judging Pavilion. The latter building is being converted into a temporary horseshoeing and blacksmith shop for the Agricultural Engineering Department and will be ready for use by September, 1954.

During the past year the new Dairy and Poultry Units were completed except for the addition of certain items deleted arbitrarily when the Division of Architecture found the funds then available for the buildings were not sufficient to complete them. The Dairy herd was moved recently to the new unit and the new hatchery at the Poultry Unit has been in use for approximately two months. Other facilities of the new Poultry Unit will be occupied during the summer and fall of 1954. Total cost for these units, including the work done by the college through its Maintenance Department and students projects in farm carpentry and farm electricity, is approximately \$500, 000.

Construction of the Central Boiler & Power Plant was begun this past fall and the building should be completed early this coming summer. This building will provide for one additional classroom and two laboratories for the Mechanical Engineering Department as well as the power and heating requirements for the campus.

In the 1953 legislative session a total of \$1, 016, 744 was appropriated for major construction at the San Luis Obispo campus. This amount was to provide for: completion of Ornamental Horticulture Unit; construct and equip Agricultural Engineering & Mechanics Building; construct and equip for women an addition to the Physical Education facilities. Working drawings are being developed at the present time for all of these items. A completion date of August 1, 1955, has been requested in order that the facilities will be available for the increased enrollments predicted for that fall.

The college's capital outlay budget for 1954-55 just recently passed by the legislature makes provision for the development of working drawings for the first unit of a new Engineering Building. In the preliminary stages of the preparation of the budget, it appeared as if construction costs would be included in the Governor's Budget for two urgently needed buildings--namely, the Engineering Building and the Agricultural Classroom Building. Both buildings were deleted, however, before the budget was presented to the legislature. In the closing hours of the regular budget session \$185, 000, item 304.1 of the Budget Act, was added to the 1954-55 budget for the preparation of plans for major construction at all of the state colleges with the exception of Los Angeles State. This figure was based on the State College Building Priority List of July 10, 1953 and is presumed to include the items on that list through 28a that were not otherwise financed in the current year's budget. If these funds are used as planned Cal Poly, San Luis Obispo, can anticipate having drawings for its Engineering, Agricultural Classroom, and Home Economics Buildings ready for the appropriation of construction funds at the 1955 legislative session.

The postponement of the appropriation of construction money for the First Unit of the Engineering and the Agricultural Classroom Buildings is quite serious in view of the additional facilities needed to serve the numbers of students predicted for this campus within the next two years and to replace inadequate facilities. It must also be recognized that after funds are appropriated for a building there is usually a lapse of at least four years before the building is ready for use.

In spite of the hurdles, however, it is particularly gratifying to note the steady progress that is being made from year to year.

The following chart shows the number of permanent classrooms now in use and the number that will be available after the buildings now financed are built:

Permanent Instructional Room Summary

	<u>General Purpose</u>	<u>Special Purpose</u>	<u>Total</u>	<u>Accumulated Percentage</u>
Number existing, 4/20/54	11	12	23	13
Number under construction (Boiler & Power Plant)	1	2	3	15
Number financed (Science, Ag. Engineering)	<u>14</u>	<u>35</u>	<u>49</u>	<u>45</u>
TOTALS	<u>26</u>	<u>49</u>	<u>75</u>	<u>45</u>
Number approved in Master Plan (1949)	57	110	167	

Kellogg-Voorhis

During the past year the State Division of Highways acquired some 22 acres of the Kellogg unit for the widening of Garvey Boulevard as a part of the Ramona Freeway. In exchange for this narrow strip of land and an additional \$7,000 provided by the College, the Division of Highways has arranged for the purchase of a 37.78 acre block of level land adjacent to that section of the Kellogg unit that has already been selected by the College for its building area. The transaction is scheduled to be completed sometime during the summer.

Because of accessibility and terrain, it is possible that part of the new tract will be used for the physical education facilities instead of the one earlier selected as a possible site. A final decision on this cannot be made until the Division of Architecture has had an opportunity to study the new site in relation to the entire master building plan.

One million dollars was appropriated at the 1952 legislative session for construction of the first unit of the Science Building at Kellogg. A second million was in the 1953 Governor's Budget but was deleted from the budget bill passed by the legislature. However, authorization was given to permit the development of preliminary plans for the entire building. As those plans were being developed during the past year, it was found that much of the first million would be used in the development of essential utilities thus leaving a relatively small amount for the building itself. As a consequence, it was decided that the first million should not be used until more significant construction money was made available. At the 1954 legislative \$1,037,000 was appropriated for constructing and equipping the complete Science Building. Hence, construction plans can now proceed.

In view of the progress made on the preliminary plans for this building, it is expected that the working drawings will be completed and the construction contract let in time to have the building ready for occupancy in the Fall of 1956.

From the \$185,000 appropriated in item 304.1 of the 1954 Budget Act, mentioned in the discussion of the San Luis Obispo program, the College expects to have plans at Kellogg completed during 1954-55 for Agricultural Production Units, Cafeteria and Kitchen, and Physical Education, that can be used by the 1955 legislature in determining the capital outlay appropriation for 1955-56.

Plans for these buildings must be made during the current calendar year if the program for the 1000 students is to be established in 1957-58 as indicated in the latest state college projected enrollment estimates.

MINOR CONSTRUCTION

The 1953-54 budget shows \$217,942 was available at the three campuses for work in this category. The construction projects that are classified under the heading of minor construction are those which are estimated to cost less than \$20,000.

These projects are carefully reviewed by the College's instructional divisions for the purpose of selecting those that will provide valuable experiences for students to supplement their regular classroom instruction. For example, the electronics department of the Engineering Division has in cooperation with the College Maintenance Department planned and erected an electronics signal tower; the Air Conditioning Department, also in the Engineering Division, has overhauled specific items of air conditioning equipment on the campus; while in the Agricultural Division the soil conservation class has planned and constructed an earth dam reservoir; and the ornamental horticultural classes have drawn the plans for the landscaping of campus building, grown the plant materials, and made the plantings. Other projects of less instructional nature which are valuable from the standpoint of providing essential job responsibility have been done by students for pay under the supervision of the maintenance staff. Still other minor construction projects have been done by private contractors. The college views its minor construction project program as one of the essential implements in helping it to accomplish its educational objective of practical and applied education.

SPECIAL SERVICES

During the past year the college has continued to carry on its program of special services for various areas of education and industry.

Agriculture

The special services to agricultural education are particularly broad in their scope. They include

1. Training of teachers for both the Vocational and the Limited Special Secondary Credentials in Agriculture; and
2. In-service training of credentialed teachers through
 - A. A specially planned week of concentrated work in basic agricultural production skills and teaching techniques applied to agriculture, held on the San Luis Obispo campus during the summer. Over 200 teachers enrolled in the program last summer.
 - B. Cooperation with the Bureau of Agricultural Education and the California Agricultural Teachers' Association in holding on the San Luis Obispo campus a one-week's summer conference for the discussion of professional subjects. Some 400 agricultural teachers participated in last summer's conference.
 - C. A program of visitations to high school and junior college agricultural departments by instructors of the College's Agricultural Division to furnish technical assistance and information. By the close of the present school year, four different staff members from the San Luis Obispo and Voorhis campuses will have visited during the year over 100 different secondary school agricultural departments.

- D. The offering at the Voorhis Unit of a basic plant propagation and home landscape planning course for 26 high school agricultural teachers in Los Angeles, Orange, Riverside, and San Bernardino Counties.
- 3. Providing facilities, personnel, and management for various Future Farmer of America activities, such as
 - A. State Final Judging Contest in which over 1,000 high school boys, coming from as far south as El Centro and as far north as Eureka, participate.
 - B. Annual State Convention at which two delegates each from most of the 233 chapters attend.

Special Education

- 1. Last summer and again this summer the College will conduct, in cooperation with the California Association for Health, Physical Education and Recreation and the State Department of Education, two workshops for physical education teachers. Each of the workshops is for a two-weeks period, one for men and one for women. Over 200 teachers per year participate in these programs.
- 2. This summer the College is cooperating with the State Department of Education School Lunch Program in providing facilities and personnel for a one-week's workshop for school lunch personnel in the operation and management problems of school feeding.
- 3. The College will be host May 29-31 to a state-wide conference of Driver Education teachers and consultants under auspices of the California Driver Education Association.

Industry

- 1. Western Fairs Judges Conference which is held on the San Luis Obispo campus every other year.
- 2. Nurseryman's Refresher Course.
- 3. Dairy, Swine, Beef, Sheep, Horse, and Poultry Breeders meeting and conferences at all three campuses.
- 4. County horticultural commissioners' conferences and workshops.
- 5. A Pest Control Conference was held at the Voorhis Campus on December 14, 15, 16. The National Pest Control Association cooperated in the conference which was jointly sponsored by the Pest Control Operators of California, the Structural Pest Control Board, and Cal Poly.

The above items of special services are by no means complete but do serve to illustrate the type and scope of the program that Cal Poly is able and willing to provide for education and industry in the areas related to its offerings.

McPhee, Julian

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CALIFORNIA STATE POLYTECHNIC COLLEGE:

Pioneer in Occupational Education

JULIAN A. MCPHEE, President



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CALIFORNIA STATE POLYTECHNIC COLLEGE: Pioneer in Occupational Education

JULIAN A. McPHEE, *President*

Occupationally centered education which stresses preparation to meet actual job requirements is the special function of California State Polytechnic College at each of its three campuses. The original and main campus, now 2,850 acres in extent, is at San Luis Obispo. The college, which is one of California's ten state colleges, has a branch unit in eastern Los Angeles County operating on two campuses, the 157-acre Voorhis Campus at San Dimas, and the 800-acre Kellogg Campus at Pomona.

"Cal Poly," as the college is informally known, was established by the state legislature in 1901 as a state-wide rather than a regional institution. It serves the needs of students from all 58 of California's counties with specialized occupational offerings in its three divisions—agriculture, engineering, and liberal arts—leading to the degree of Bachelor of Science with a major in any of 28 subject fields. The college is also authorized to grant the Master of Arts degree and to recommend candidates for teaching credentials in six teaching fields. The college is fully accredited by the Northwest Association of Secondary and Higher Schools and the Western College Association.

The legislative act which created Cal Poly defined its purpose in these words:

... the purpose of this school is to furnish to young people of both sexes mental and manual training in the arts and sciences, including agriculture, mechanics, engineering, business methods, domestic economy, and such other branches as will fit the students for the nonprofessional walks of life.

The establishing act further stated that

This act shall be liberally construed, to the end that the school established hereby may at all times contribute to the industrial welfare of the State of California.¹

Pursuant to this purpose, the college through its more than half a century of service has sought the realization of four objectives:

1. To prepare students for specific occupations
2. To develop in students the attitudes that will enable them to understand the relationship and importance of the individual and his work to the economic and social responsibilities of citizenship
3. To contribute to the general welfare of the state by providing a continuous program of educational service to agriculture, industry, and education

¹ Chapter 101, Statutes of 1901.

✓ 4. To demonstrate the effectiveness of the Cal Poly philosophy and pattern of education

Cal Poly prepares its students for managerial, technical, and teaching occupations by training the hands as well as the head, by adding "know-how" to "know-why." The training is specific and practical. Each year of study is planned to prepare the student for additional jobs in the training area of his major department. Requirements of the job, rather than those of professional graduate schools, determine the educational experiences to be offered to each student. Practical laboratory work under job conditions is emphasized. Students learn by doing. They may also earn while learning through the project system of instruction in which Cal Poly is a pioneer.

In order to make maximum use of the student's interest in his field of specialization as an incentive to study, and also to ensure job preparation for the student who cannot spend four years at college, work in the major department is begun in the freshman year. The course of study, therefore, is "upside-down" in comparison with the conventional college program. The college seeks to make the student aware, through early contact with the practical phases of his major subject, of the value to him of courses in the sciences and the advantage of applying himself diligently to the study of these and other basic subjects. The general education courses which supplement the occupational instruction are offered in each of the four college years.

Cal Poly accepts responsibility not only for the occupational education of its students but also for helping them to obtain the best possible opportunities for careers. Through follow-up visits to the graduate and his employer, the college also provides on-the-job assistance to the Cal Poly alumnus during his first years in the field.

ESTABLISHMENT OF THE COLLEGE

Under the name of California Polytechnic School, Cal Poly opened its doors to students for the first time on October 1, 1903. When the cornerstone for the administration building was laid on January 31 of that year, the road to the campus was a wagon track through a muddy field. On the opening day, the main building was not completed and the debris left by the builders had not been cleared from the dormitory. Nevertheless, Director and Mrs. Leroy Anderson moved into the dormitory and called together the three faculty members and 15 students to meet in the unfinished parlor of the building.

This beginning, humble and small though it was, had been attained only after long effort. The first bill to establish a polytechnic school at San Luis Obispo had been introduced in the California State Legislature in 1895 by Senator S. C. Smith of Bakersfield, but the Legislature adjourned without taking action on the bill. In 1897 another bill by Senator Smith was approved by the Legislature, but was pocket-vetoed

by Governor James H. Budd. In January, 1901, Senator Smith again introduced his bill in the Senate, and it was also introduced in the Assembly by Warren M. John of San Luis Obispo. The Senate bill was passed by both houses and was signed by Governor Henry T. Gage. The school was governed until 1921 by a local board of trustees appointed by the governor. In 1921, control of this institution, as well as of the state schools for the deaf and blind and the state teachers colleges, was transferred to the State Board of Education.

No level of instruction was specified in the legislative act which created the California Polytechnic School. It opened as a state vocational high school in keeping with the educational concepts of the time. In 1927, because district high schools were providing vocational education along agricultural and industrial lines at the same level as the Cal Poly program, it was found necessary and desirable to raise the level of instruction at Cal Poly to that of a junior college. In 1929 the enrollment of new students was limited to young men.¹ In 1933 the institution was changed from a junior college to a two-year technical college offering terminal instruction in agricultural and industrial fields. In 1936 a third year of terminal instruction was added, and in 1940 a fourth year, and the college was authorized by the State Board of Education to grant the Bachelor of Science degree. The first baccalaureate exercises were held in 1942.

The Voorhis Unit of Cal Poly came into being in 1938, when a two-million-dollar school and farm, completely equipped, were deeded to the college by the owners, Charles B. Voorhis of Pasadena and his son, former congressman Jerry Voorhis, for the express purpose of providing an expanded program of collegiate occupational training. This campus, designed for 150 students, has grown to the point where every facility is now taxed by enrollment of more than 400 students who have been drawn there for the study of animal husbandry, fruit production, general crops, horticultural services and inspection, ornamental horticulture, and soil science.

The Cal Poly approach to collegiate occupational training was again recognized by a substantial gift in November, 1949, when the W. K. Kellogg Foundation donated to the college its 800-acre Arabian horse ranch near Pomona. This property, valued at \$4,000,000, was deeded to the State of California to be used for occupational training consistent with the philosophy and educational objectives of California State Polytechnic College. The Kellogg ranch and the Voorhis campus are now operated as the "Kellogg-Voorhis unit."

ADMINISTRATORS OF THE COLLEGE

During the first half century of development, the college has had seven administrative heads. The first director, Leroy Anderson, served from 1902 to 1907. He was succeeded by Leroy Burns Smith who had

¹ Chapter 282, Statutes of 1929.

charge until 1914. Robert W. Ryder was appointed director in 1914 and was followed in 1921 by Nicholas Ricciardi who served until January, 1924. Miss Margaret Chase served as acting head from January, 1924, to June, 1924. Benjamin R. Crandall was president of the college for ten years from 1924 to 1933. The incumbent president was appointed in 1933.

PRESENT INSTITUTION

The college this year is serving 2,259 students at San Luis Obispo of whom 987 are in agriculture, 1,039 in engineering. Of the 233 majors in liberal arts, 49 are graduate students. The Kellogg-Voorhis unit has 423 students, bringing the total college enrollment to 2,682. The locations of the homes from which the students come indicate clearly the more-than-regional character of Cal Poly's service area. Of the students on the San Luis Obispo campus, more than 83 per cent come from 53 California counties, 8.7 per cent of the students come from 22 other states, and 7.9 per cent from 31 territories and foreign countries. More than 93 per cent of the students at the Kellogg-Voorhis unit come from 24 California counties, 2.8 from 8 other states, and 3.8 from U. S. territories and foreign countries.

Students and instructors at San Luis Obispo work on a ranch-style campus of some 2,800 acres—a sharp contrast with the 281 acres with which the college began. Additional land purchases brought the campus to a total of 1,113 acres by the time the college was 15 years old. The only addition to the campus during the next two decades was the 175-acre Fiscalini ranch purchased in 1929. Although four small purchases were made during the 1940's, the college's holdings at San Luis Obispo totaled only about 1,250 acres at the close of the decade. The first four years of the 1950's, however, brought the purchase of the Peterson, Serrano, Cheda, and Irwin ranches, with a combined area of 1,585 acres, thus more than doubling the ranch-style campus.

On-campus housing is available at San Luis Obispo for 1,340 single men and for 263 families. The single men are housed in 21 dormitories of which five, each accommodating 96 men, are now in only their second year of use. Many students live in off-campus quarters.

FACULTY

In the last 20 years Cal Poly has increased its faculty from 20 to 201. Distribution of the teaching staff according to degrees finds approximately 20 per cent with the doctorate, 45 per cent with the master's degree, and 30 per cent with the bachelor's degree. Because the primary emphasis in occupational instruction is upon mastery of the use of knowledge in practical working situations, the college selects faculty members who have had successful and extended work experience in the occupational fields in which they will teach, as well as sound academic training in those fields.

TRENDS IN ENROLLMENT

The current enrollment of approximately 2,300 on the San Luis Obispo campus is expected to increase to 2,700 next year and to 3,000 by 1955-56. Steady growth to an enrollment of 3,600 students in 1959-60 is forecast. Part of this growth is to be achieved through resuming the admission of women students, operating Cal Poly on a coeducational basis as it was before 1929.

PROGRAM OF THE COLLEGE

The college applies its practical methods and philosophy of higher education to all its instruction, which includes, on its main campus, the divisions of agriculture, engineering, and liberal arts.

The Division of Agriculture offers majors in agricultural engineering; animal husbandry; dairy husbandry and manufacturing; field, fruit, and truck crops; ornamental horticulture; poultry husbandry; and soil science. Majors offered by the Division of Engineering are in aeronautical engineering, air conditioning and refrigeration engineering, architectural engineering, electrical engineering, electronic and radio engineering, mechanical engineering, and printing. Supporting courses in engineering include machine shop and welding.

Majors in the Division of Liberal Arts are offered in agricultural journalism, biological science, health and physical education, mathematics, physical science, and social science. Supporting courses are offered by departments of English and public speaking, education and psychology, music, and military science and tactics.

INSTRUCTIONAL PHILOSOPHY AND METHODS

Throughout its occupational education, Cal Poly uses the "upside-down" curriculum in which the student begins work in his major department in his freshman year and is given ample instruction in the practical phases of his field of specialization during the first two years of his course.

By enabling the student to get right at the primary thing for which he came to college, the "upside-down" plan keeps him from feeling thwarted by numerous hurdles which at first seem to him unrelated to his interests. The Cal Poly plan also helps the student to develop interest in theory and background courses which are taken concurrently or after his practical instruction. He is able to see from his own experience with his major subject why he needs the supporting courses.

Another important advantage of the unconventional curriculum is that it enables the student to earn a living, using the skills he has learned, at whatever point he may be forced to leave school. This educational pattern definitely improves the immediate earning capacity of those students, who, for various reasons, complete their formal education after one or two years of college, as so many of them in all colleges do. If

the student is able to complete the four-year course, his opportunities for success in the more highly paid positions will be greatly increased.

Spreading of general education courses throughout the four college years instead of grouping them in the first two also is made possible by the "upside-down" plan. Thus students take the more advanced general courses in the later years when they are better prepared to appreciate what they are studying.

To make its occupational education practical and effective, Cal Poly has developed the "learn by doing" method of instruction. Students practice in the laboratories and shops and on the college ranch the techniques they have studied in the classroom. When, after college, the students start work on their jobs, they have the confidence that comes from experience and know-how.

THE PROJECT SYSTEM

Closely associated with "learn by doing" instruction is the project method of teaching in which Cal Poly has pioneered. The project system consists of self-owned or managerial projects operated by students in such a way as to give knowledge in the commercial production and marketing of agricultural products or in the construction, rebuilding, repair, or maintenance of industrial machinery and equipment on an equally commercial basis. This combination of the very practical "learn by doing" and "earn while you learn" philosophies not only enables a student to earn money while doing work directly related to his major academic interest, but also creates an added incentive for the more rapid acquisition of further skills and knowledge to the end that the projects will be more profitable.

In each major department students are encouraged by their instructors to take part in project activities, either individually or as a group. A revolving fund for projects is available from which students may borrow money for an investment in livestock, ornamental plants, seeds, feed, machinery to be rebuilt, etc. No cosigner is required for a student who borrows from the project fund, and the fund is so operated as to guarantee the individual student against loss from project operation.

The most popular agricultural projects are those of fattening livestock, raising beef, sheep, swine, or dairy cattle; conducting individual dairy projects or working as members of a group in management of a dairy herd; operating a poultry unit as a project; growing ornamental or field and truck crops.

The field of engineering also makes use of the project method, as is illustrated by the radio-repair service project operated in the Electronics and Radio Engineering Department and by the student-operated program of repair and maintenance of campus air-conditioning and refrigeration equipment.

Another feature of Cal Poly's educational method is its insistence that supporting courses in its curriculum must be closely correlated with

major instruction. Three methods are used to ensure that supporting courses really support. These courses are systematically studied by committees made up of instructors who offer the courses, working with those instructors whose majors enroll in them. Major courses are so developed as actually to make use of the prerequisite supporting material. Supporting courses are so developed as to make certain that they provide the support determined to be essential.

STUDENT ACTIVITIES

Supplementing formal instruction in the teaching of citizenship and leadership at Cal Poly is a system of student government which controls a wide range of campus activities. Student government, through four boards of control, operates the college-wide activities—athletics, music, publications, and “Poly Royal,” the two-day open house staged by students annually.

The Poly Royal is a unique event nationally known as “the country fair on a college campus.” The crowd of visitors it attracts annually overflows the capacity of hotels and motels in San Luis Obispo and vicinity. Among the Poly Royal attractions are exhibits of the work and facilities of all the college departments; a country fair carnival; a giant barbecue; stock-judging contests for farm centers in San Luis Obispo and adjoining counties; a nail-driving contest for women; flower, poultry, and livestock shows; a swimming meet; farm equipment demonstrations; and an intercollegiate rodeo.

Cal Poly’s activity program is rounded out by the operations of a group of special-interest clubs, including student chapters of many professional societies. The faculty and administration of the college provide guidance for the activity program through an activities officer, an assistant activities officer, and faculty sponsors for each activity, all working in conjunction with the office of the dean of students.

ENTRY INTO INTERCOLLEGIATE ATHLETICS

Athletics became a part of the life of the college in its early years. Intercollegiate competition was begun with a Rugby game against the University of Southern California in 1911. Five years later Cal Poly switched to the American style of football, as did most Pacific coast colleges.

A full program of intercollegiate sports developed gradually until now Cal Poly fields teams in football, basketball, baseball, cross country, track, swimming, water polo, golf, tennis, gymnastics, soccer, boxing, and wrestling. The Boots and Spurs club, made up of majors in the Animal Husbandry Department, has developed an intercollegiate rodeo team. Since 1946 the college has been a member of the California Collegiate Athletic Association.

Intercollegiate athletics have not been overemphasized but have been maintained on a basis of sportsmanship and recreation. The result has been that Cal Poly has had its good teams and its poor ones, with its share of victories and its share of defeats. The most successful year probably was 1953 when the Cal Poly football team was undefeated in winning its second consecutive California Collegiate Athletic Association championship and its boxing team won the Pacific Coast Intercollegiate championship.

ACCREDITATION

California State Polytechnic College has been fully accredited by the Northwest Association of Secondary and Higher Schools since September 1, 1948. The Western College Association has granted Cal Poly full accreditation for the five-year period ending in 1956. The college is fully accredited by the California State Board of Education for a five-year period, ending June 30, 1956, to offer training leading to the following credentials: General Secondary Credential with majors in agriculture, health and physical education, life science and general science, mathematics, physical science and general science, or social science; Special Secondary Credential in Vocational Agriculture; Special Secondary Limited Credential in Agriculture; Special Secondary Credential in Physical Education. The American Association of Collegiate Registrars and Admissions Officers reports that Cal Poly has an "A" rating among the members of that association.¹ The "A" rating means "Transcript of record given full value," and this applies to college units earned at levels up to and including that of the master's degree.

TEACHER EDUCATION

The college is also a teacher-training institution, although it differs from the other state colleges in that it did not have its beginning as such an institution. When state colleges were authorized in 1946 to give a fifth year of instruction, Cal Poly, which for many years had offered skills and methods courses for agriculture teachers, was accredited by the State Board of Education to recommend its graduates as candidates for the Special Secondary Credential in Vocational Agriculture and the Special Secondary Limited Credential in Agriculture. Early in 1947 the State Board of Education approved the Cal Poly program for training prospective physical education teachers and authorized the college to recommend candidates for the Special Secondary Credential in Physical Education.

In April, 1928, the State Board of Education authorized the college to recommend its graduates for the General Secondary Credential with a major in any of the following fields: social studies, mathematics, physi-

¹ *Report on the Credit Given by Educational Institutions, 1952*, edited by Ronald B. Thompson, Ohio State University, published by American Association of Collegiate Registrars and Admissions Officers, 1952, p. 6.

cal science and general science, life science and general science, agriculture, and physical education.

The college was approved on October 1, 1949, to grant the Master of Arts degree in education with concentrations in agriculture, biological science, mathematics, health and physical education, physical science, and social science.

Despite its late entry into the field as a full-fledged teacher-training institution, 165 of its graduates have been recommended for the vocational agriculture credential, 29 for the limited agriculture credential and 54 for credentials in other subject-matter fields. Currently, 118 students are preparing for the vocational agriculture credential, 17 for the limited credential in agriculture, and 40 for credentials in other subjects.

STUDENT PERSONNEL SERVICES

The student's education through formal course work is supplemented also by the efforts of well-staffed counseling, testing, and health centers under direction of the dean of students. Another student service is provided by the placement office.

Counseling Service

A Counseling Center is maintained to aid the student in understanding himself and to give the advisers and instructors information to help them advise their students. The counseling service consists of occupational, educational, and personal counseling, which is provided for all the students who request it and also for those referred to the Center by faculty members. The procedure consists of interviewing, testing, and providing occupational information. Emphasizing preventive rather than remedial counseling, the Center interviews most new students during their first year.

The Counseling Center also provides precollege counseling service for prospective students. The emphasis in this area is on aiding students in choosing the most appropriate major based upon their interests, abilities, personal traits, and background.

Testing Service

Entering students are given a battery of placement tests that is designed to indicate subjects and sections in which they will have the best chance for success. The series includes tests of academic aptitude, tests in reading, mathematics, English, agricultural mechanics, animal husbandry, and chemistry, as well as personal inventories and interest inventories.

In addition to administering the entrance placement tests and those used by the counseling center, the Testing Center also administers, scores, and interprets interest and reading tests for any student who requests this service; corrects tests for the remedial reading classes; aids

in administering and correcting a battery of tests used in the selection of prospective teachers; and administers tests for Selective Service and other special tests for the Educational Testing Service¹ on a regional basis.

The Testing Center also provides assistance to instructors in improving their regular course tests, by item analysis of test results, by supplying sample test items, and by providing samples of standardized tests for various departments.

Health Service

The Cal Poly Health Center is a member of the American College Health Association. It gives each student a complete health examination on his admission to the college. Any unusual findings which may influence the student's welfare either while he is a student or in later life are carefully investigated and steps are taken to correct the conditions. The facilities consist of a well-equipped hospital and clinic located in one building. It is recognized as a registered hospital by the American Medical Association and is operated on a 24-hour basis when the college is regularly in session. The student health service is responsible for the environmental sanitation on the campus. Sanitary inspections are made in the food preparation and dining areas on at least a weekly basis. Inspections of the dormitories and other campus areas are made periodically.

Placement Service

The Placement Service assists students in obtaining part-time and summer employment to meet college expenses and in finding the most desirable permanent employment possible at graduation. It also provides a continuous follow-up program with graduates and their employers.

An effort is made to place students in part-time jobs that have some relationship to their major fields of interest. This provides additional opportunity for students to make practical use of their education and to prepare for full-time work in a field of major interest after graduation. Of equal importance is the development of proper work habits and attitudes in each individual. To encourage this, the college has established a policy of providing supervised work experience for a maximum number of students by employing them in phases of campus and farm operations. The Placement Service maintains constant contact with employers in agriculture, industry, and business to develop summer job opportunities for students in their various fields of interest.

Graduating seniors are given opportunities to investigate possibilities of employment through interviews with representatives of companies in

¹ Educational Testing Service, a nonprofit corporation of Princeton, N. J., with a western office in Los Angeles, operates co-operative testing programs for educational institutions and organizations, and conducts confidential examinations for the armed services and the Selective Service System.

California and many other parts of the country who come to the campus for these interviews.

FUTURE PLANS OF THE COLLEGE

Progress must be made rapidly toward realization of Cal Poly's entire master building program if the college is to provide the ever-increasing opportunities for higher education sought by the young people of the state. Although the college has some excellent buildings, such as its administration and classroom building, physical education building and swimming pool, library, dormitories, and farm buildings, including dairy and poultry units recently completed, it is badly in need of permanent classrooms. Only 23 of the 90 classrooms now available have been approved by the State Department of Education as meeting permanent classroom requirements. A total of 167 permanent classrooms will be required for the enrollment predicted for 1960, to meet the standards of adequacy recommended by the presidents of the state colleges. Cal Poly, therefore, must build 144 additional classrooms in the next six years to bring its physical facilities to the standard agreed upon.

In addition to the buildings already named, permanent facilities of the college now include an air-conditioning and refrigeration engineering building, machine shop, greenhouses for ornamental horticulture, stock-judging pavilion, airplane hangar, farm machinery shop, meat laboratory, and feed mill. Under construction and to be occupied late this spring is a new heating and power plant and mechanical engineering laboratory. Site clearance has begun for a science and classrooms building to cost some \$2,400,000, for which the State has provided funds. Other improvements for which state funds are now available are a women's physical education facility, an agricultural engineering and mechanics building, and site development for an ornamental horticulture unit.

Other buildings to be constructed and facilities to be developed (listed here in the order of their priority in the college's master plan) are the following: engineering building; agriculture classroom building; men's dormitory unit and cafeteria; home economics building; aeronautical engineering and industrial shop; a unit of women's dormitories; men's physical education facilities; health center; a second unit of men's dormitories; auditorium and music building; classroom building; president's home; a second unit of women's dormitories; food processing building; maintenance engineering building; an additional engineering building; "corporation yard" facilities; cafeteria, kitchen, and student activity building; swine and sheep pavilion; crops field house, administration building; a third unit of men's dormitories; welding and industrial arts building; library annex; residences for 24-hour employees; stadium, track, and field; additional facilities for poultry husbandry; additional facilities for ornamental horticulture; and a beef cattle breeding unit.

Larger enrollment is predicted also for the Kellogg-Voorhis unit at San Dimas and Pomona. The present enrollment of some 400 students is expected to increase to 700 by 1955-56 and to 1,000 the following year. Planning for the Kellogg-Voorhis unit is based on an estimate of 1,500 students in 1958-59, 2,000 by 1959-60, and 3,600 by 1964.

Land and facilities at the Voorhis campus are adequate only for the present Kellogg-Voorhis student body of a little more than 400 students. To accommodate increased enrollment, to prepare for the admission of women students, and to make diversification of the curriculum possible through addition of instruction in engineering occupations, home economics, and other subject fields in which needs develop, a complete educational plant must be constructed on the Kellogg campus. The master plan for this campus includes buildings and other facilities for science instruction, health and physical education, business education, home economics education, agriculture classrooms, agricultural engineering, agricultural units, engineering occupations, library, administration, cafeteria, dormitories, and "corporation yard." The State already has set aside \$3,000,000 to start this construction.

CONTRIBUTIONS OF THE INSTITUTION

The contributions of Cal Poly to the State of California and to the nation are best revealed in the achievements of the thousands it has trained to serve in agriculture, in education, and in industry. The college has been a major source of trained manpower for agriculture and through its many former students in this occupational field has helped California to push forward in scientific farming.

Graduates in Agriculture

Most of the alumni are engaged in production as owners or managers of ranches, hatcheries, nurseries, and dairies, but the following representative list of other jobs held by graduates of the college indicates the breadth of the occupational field which is opened by the type of agricultural instruction offered at Cal Poly:

Farm editor, Modesto *Bee*
Head of University of Florida's animal husbandry and nutrition program
Agricultural equipment manufacturer
Superintendent, San Francisco stock yards
County farm adviser
Assistant, National 4-H Club Foundation
Field representative, Rice Growers Association
Head Gardener, Los Angeles Board of Education
Field superintendent and co-owner, Merit Packing Company
Field editor, *Pacific Stockman*
Senior Agricultural Inspector, Stanislaus County
Marketing economist, California State Department of Agriculture
Farm adviser, California Milling Corporation
Dairy Inspector, State of California
Cotton gin manager, Anderson, Clayton and Company

Agronomist, Brea Chemicals, Inc.
District supervisor, Dried Fruit Association of California

If you visit the agriculture department of a California high school, the chances are fifty-fifty that you will meet a Cal Poly graduate teaching there. In 9 of 10 high school agriculture departments you will find a teacher who has studied for at least five months at Cal Poly.

Graduates in Business and Industry

In accordance with the legislative act creating the college, which specified as one objective that it "may at all times contribute to the industrial welfare of the state," Cal Poly has been sending its recruits into industry and business throughout its half-century history. The degree to which the college continues today to be a substantial source of trained personnel for business and industry is indicated by the fact that some 200 companies send representatives to the campus each year for employment interviews with members of the senior class. Included among these companies are many of the largest in California as well as nationally known industrial corporations from other states.

Alumni in business and industry are serving in a tremendously wide range of capacities. The full list of them would read like a catalog of contemporary occupations. The following list of positions held by Cal Poly people is offered merely as indication of the variety and significance of their achievements:

Control designer, General Electric Company
Flight engineer, Pan American Airways
Resident manager, branch office, Pacific Northwest Company
Manager, Palmdale Irrigation District
District sales manager for six western states, Duncan Electric Manufacturing Company
Color television development engineer with the National Broadcasting Company
Foreman for Peter Kiewit Sons on construction of Garrison Dam
Vice president, International Correspondence Schools
Technical secretary, American Society of Refrigerating Engineers
Vice president in charge of operations, Delaware, Lackawanna and Western Railroad Company
Pilot, American Airlines
Instrumentation engineer, Shell Development Company (developed new viscometer for quality control)
President and owner, Portable Aluminum Irrigation Company, "world's largest" manufacturers and distributors of irrigation equipment
Principal electrical engineer, Department of Water and Power, City of Los Angeles
President and general manager, Earth Equipment Company
Chairman of the Board of Directors and director of the Tube Research Laboratory, Varian Associates (co-inventors of the Klystron tube, an important improvement in radar operations)

Cal Poly alumni have two qualities in common for the development of which the college can accept credit: they are active in civic affairs

(two alumni are mayors of California cities), and they are occupationally stable. Of Cal Poly alumni who have received teaching credentials in fields other than agriculture, 68.5 per cent are now teaching. This figure is well above the average for occupational stability among teachers but is low compared to the statistics for Cal Poly's agricultural and engineering alumni. Of agricultural graduates, 95 per cent are in work for which their college education was direct preparation, while 95.3 per cent of the engineering graduates are employed on jobs to which their college training is directly applied. The Cal Poly student prepares himself for an occupational field and then, except in rare instances, uses what he has learned to achieve a life-time career.

The cover illustration is a sketch of a portion of the Administration Building on the San Luis Obispo campus of California State Polytechnic College, by R. L. Graves, Jr., Instructor in the Architectural Engineering Department of the college.