

REPORT OF THE  
OFFICE OF THE AUDITOR GENERAL  
TO THE  
JOINT LEGISLATIVE AUDIT COMMITTEE

906.2

THE CALIFORNIA AGRICULTURAL EXPERIMENT STATION:  
AN ANALYSIS OF RESEARCH PROGRAM ACTIVITIES

MARCH 1980



# California Legislature

## Joint Legislative Audit Committee

GOVERNMENT CODE SECTION 10500 et al

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March 21, 1980

906.2

The Honorable Speaker of the Assembly  
 The Honorable President pro Tempore of the Senate  
 The Honorable Members of the Senate and the  
 Assembly of the Legislature of California

Members of the Legislature:

Your Joint Legislative Audit Committee respectfully submits the Auditor General's report concerning the California Agricultural Experiment Station.

The Auditor General found that the CAES:

- Has no current management plan for detailing research objectives and evaluating the effectiveness of research
- Does not routinely provide to the Legislature information on research programs supported by state appropriated research monies
- Provides limited research support in the Community and Economic Development program area and in urban pest problems
- Fails to recover indirect costs for privately-sponsored research due to weaknesses in gift, grant, and contract procedures
- Uses restricted pesticides without permits.

The auditors are William M. Zimmerling, Audit Manager; Robert J. Maloney; James H. McAlister; Noriaki Hirasuna; and Karen Strand.

Respectfully submitted,

S. FLOYD MORI  
 Chairman, Joint Legislative  
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## SUMMARY

The California Agricultural Experiment Station (CAES) is the largest in the nation conducting research on agriculture, rural life, and agriculturally related problems. Most of this research is conducted at the Berkeley, Davis, and Riverside campuses of the University of California. The CAES has approximately 900 researchers and, in fiscal year 1978-79, had a budget of over \$63 million; 62 percent of these expenditures were state general fund appropriations. Research is conducted under seven major program goals in research areas ranging from agricultural production and marketing to community and economic development.

The CAES has contributed significantly to agriculture in certain areas of research. But, while the CAES has extensively supported research in the agricultural production, product improvement, and protection of plants and animals, it has provided only limited support in the community and economic development research area--including research concerning the rural poor. Limited support has also been provided for the research of urban pest problems. Furthermore, the CAES does not routinely apprise the Legislature of research expenditures supported by state appropriations.

Our review also disclosed weaknesses in the gifts, contracts, and grants area. For example, by classifying as gifts funds to support specific research, the station has failed to recover indirect costs. Funds meant to support specific research projects should be classified as grants or contracts. In addition, inequitable assessments of indirect charges on certain grants and contracts have exempted certain organizations from paying indirect costs.

We further found that some CAES researchers were using restricted pesticides without permits. Also, no systematic records were maintained at the University on persons who could have been exposed to restricted pesticides during testing.

To correct these deficiencies, we recommend that the California Agricultural Experiment Station consider establishing both a management plan detailing research priorities and a system to evaluate the effectiveness of research. These should be made available for legislative and public review.

In addition, we recommend the CAES

- Develop and implement improved procedures (1) to ensure that projects funded for specific research interests are classified as grants or contracts and (2) to guarantee that appropriate overhead charges are assessed.

- Implement and enforce more effective controls over pesticide use and maintain records on all restricted pesticides. These activities should be coordinated through one central office with branches on each campus.

## INTRODUCTION

In response to a resolution of the Joint Legislative Audit Committee, the Office of the Auditor General has reviewed certain operations of the University of California. Our review, conducted under the authority vested in the Auditor General by Government Code Section 10527, focused on research activities conducted by the California Agricultural Experiment Station (CAES).

During this audit of the California Agricultural Experiment Station, we reviewed the sources of funds supporting research projects, evaluated research policies and procedures relating to the CAES, and analyzed the prioritization of research. We also evaluated controls over restricted chemicals.

Furthermore, we reviewed CAES research funding by individual projects, determined the source of funds over a three-year period, analyzed the procedures researchers used to obtain funding, reviewed gift and grant documentation, and interviewed researchers and administrative staff within the CAES.

## BACKGROUND

This section of the report traces the history of agricultural research in California. Also, it details the organizational structure of the California Agricultural Experiment Station and discusses the station's research contributions, program goals, and sources of funding.

### Program History

Education and research in agriculture have been supported in California by federal and state legislation. At the federal level, Congress approved the Morrill Act in 1862 which gave public lands to states for the benefit of agriculture and the mechanical arts. Following this act, the California Legislature passed the Organic Act of 1868. This act established the University of California and mandated that the College of Agriculture be the first college established within the University.

Then in 1887, Congress passed the Hatch Act which provided federal funding for agricultural research through the establishment of state agricultural experiment stations (SAES). Through this act, Congress set policy to promote research in



agriculture and rural life. Specifically, the act emphasized research contributing to an effective agricultural industry, research focusing upon broad problems of agriculture, research developing and improving rural life, and research contributing to the welfare of the consumer. The act further required that the State provide support at least equal to the federal contributions. In 1955, Congress continued support for agricultural research by passing Public Law 84-352 (69 Stats. 671, 7 U.S.C. 361a-361j) which incorporated the Hatch Act and subsequently related acts.

### Organization

The Division of Agriculture and University Services within the University of California is responsible for coordinating research and extension activities throughout the University. The Vice President of Agriculture and University Services, University of California, has overall administrative responsibility for the activities of the California Agricultural Experiment Station, which conducts research at the Davis, Berkeley, and Riverside campuses within the University of California system. The Vice President also serves as the Director of the California Agricultural Experiment Station and as the Director of the Cooperative Extension Service.

Associate Directors of the CAES are located at each of the three campuses. Each Associate Director is also the Dean of the College of Agriculture on each campus.\*

Approximately 900 CAES academic personnel are located in over 50 academic departments and organized research units at the three campus sites and at nine field stations and other facilities. These personnel, most of whom hold joint research and teaching appointments, conduct research in the various agricultural colleges and in the other facilities. Their time is allocated between teaching duties in the University and research activities in the CAES. In fiscal year 1977-78, these researchers devoted the equivalent of 534 scientist years to 1,148 research projects within the CAES.\*\*

#### CAES' Contributions to Research

The California Agricultural Experiment Station has made substantial contributions to agricultural research. The CAES has assisted in the development of agriculture within the State and has contributed to California's achievements in agricultural production through research, extension, and teaching activities.

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\* An organizational chart of the Office of Agriculture and University Services is presented as Appendix A.

\*\* A scientist year is the equivalent of one scientist working full time for one year.

California's prominence in agricultural production serves to emphasize the importance of CAES' contribution to research. As the number one agricultural state in the United States, California produces approximately 20 percent of the nation's food crop. Virtually none of the food and fiber crops now produced in California is native; nonetheless, research has contributed to the State's commercial production of over 200 different commodities.

CAES researchers have wide latitude and independence in determining the subject and direction of their research activities, even though their projects are approved by their peers, the departmental chairperson, the Dean of the College, and the Vice President of Agriculture and Services. Most CAES researchers obtain extramural funding to support their research activities. These sources of funding provide additional support for research needs and for such necessities as research assistant salaries, travel, and other project expenses.

#### Federal Reporting Requirements

The Federal Government imposes certain reporting requirements on agricultural experiment stations. In 1966, the United States Department of Agriculture (USDA) developed the Current Research Information System which established systematic classification categories for the broad areas of research being conducted throughout the country. Appendix B

describes this system and lists the research areas. All state research projects are coded to this system. The resources and expenditures for all research projects, narrative information on the type of research being conducted under each project, and a list of publications resulting from the research are reported to the USDA yearly. Agricultural researchers throughout the country apply to the USDA for approval of their research projects. If the USDA determines that the research does not meet national research goals, the project may be conducted as a state project.

#### Program Goals

The USDA has classified national research efforts in agriculture into nine research goals. Under each research goal, individual research problem areas more specifically describe the type of research conducted. Appendix B lists the research goals and problem areas.

The California Agricultural Experiment Station groups the USDA research goals into three categories:

- Natural Resources and Environmental Quality;
- Commercial Agriculture--Production, Processing, and Marketing;
- People-Oriented Research--Consumer, Family, and Community.

The CAES has also established seven broad program goals. These consist of a number of research problem areas which are common to both the USDA and the CAES classification systems. Table 1 below lists the seven goals of the CAES.

TABLE 1

CALIFORNIA AGRICULTURAL EXPERIMENT STATION  
RESEARCH PROGRAM GOALS

- I. Renewable Natural Resources Conservation and Management
- II. Environmental Enhancement and Recreation
- III. Production Capacity and Efficiency of Domestic Plants and Animals
- IV. Product Improvement and Marketing
- V. Protection of Plants and Animals
- VI. Family and Consumer Welfare
- VII. Community and Economic Development

Funding

The California Agricultural Experiment Station is the largest of all the state agricultural experiment stations with expenditures in fiscal year 1976-77 accounting for approximately 9.3 percent of the total national SAES budgets (\$55,407,000 out of \$594,220,000). The Davis campus, one of the three campuses of the CAES, has a larger budget than any other state agricultural experiment station. Its 1976-77

fiscal year expenditures totaled \$28,296,860. In comparison, the Florida station, the second largest state experiment station, had expenditures of \$28,151,000 in fiscal year 1976-77.

Expenditures for the CAES for fiscal year 1978-79 totaled \$63,783,213.\* The sources of these funds are detailed in Table 2.

TABLE 2  
CALIFORNIA AGRICULTURAL EXPERIMENT STATION  
EXPENDITURES  
FISCAL YEAR 1978-79

<u>Source</u>	<u>Amount</u>
State Appropriations	\$39,645,201
Other State Monies	3,836,958
Federal funds	14,949,797
Endowments	1,002,571
Gifts and Private Grants	3,596,836
Other	<u>751,850</u>
TOTAL	<u>\$63,783,213</u>

\* See Appendix C for a schedule of these funds by fund source and by campus.

## AUDIT RESULTS

### CALIFORNIA AGRICULTURAL EXPERIMENT STATION RESEARCH PRIORITIES ARE NOT CLEARLY DEFINED AND RESEARCH IN CERTAIN AREAS IS LIMITED

The California Agricultural Experiment Station does not have current clearly defined and updated research priorities or program assessment procedures which are available for legislative and public review. Without such priorities or procedures, it is difficult to assess the performance of the CAES. While the CAES has accomplished much worthwhile research, it has neither met previously established objectives in community and economic development research nor supported needed research in urban areas. Scientist years in the area of community and economic development, for example, declined by nearly 50 percent, from 16.1 years in fiscal year 1975-76 to 8.41 years in fiscal year 1977-78.

The California Agricultural Experiment Station conducted research in fiscal year 1978-79 with a \$63.78 million budget. Sixty-two percent or \$39.65 million of this amount was provided by the state general fund and was approved by the Legislature within the overall University of California budget. The University of California is a constitutionally created agency which has been historically free from legislative

control. This independence is reflected in the University's budget submissions which have provided little detail on the use of state funds for research.

Current Research  
Plans and Procedures

Since the issuance of a five-year plan in 1972, the CAES has not formally updated its research objectives. In 1972, the Vice President of Agriculture and University Services issued a five-year plan which established broad programs for research in the California Agricultural Experiment Station. Subsequent to this plan, the three campuses in the CAES issued their own plans in an attempt to specify the research objectives they hoped to accomplish and the means by which those objectives would be reached. However, except for the Davis station research plan which was published in 1979, these plans were not updated and did not project goals and objectives for research conducted in 1978 or 1979.\*

The most recent plan for the CAES station at Davis, issued in March 1979, updated the goals listed in the 1972 plan, noting that "since 1972, when the Five-Year Plan for the California Agricultural Experiment Station was written, significant changes have taken place in the state, the nation,

\* Updated plans for the CAES as well as for the Berkeley and Riverside campuses were being prepared but had not been issued during the preparation of this report.



and the world." The 1979 Davis plan, by far more comprehensive than earlier plans, projects research efforts for 1980-81 and notes broad research program goals that require increased resource allocations.

Aside from these limitations in current planning, the CAES also lacks procedures for evaluating research objectives. The CAES has been operating under broad research goal classifications and reporting systems as established by the USDA, but it has no current published managerial plans by which to establish specific project research priorities or by which to evaluate the research operations of the three campuses within the CAES.

#### Application of Research Resources

Our analysis disclosed substantial variation in the distribution of resources for various types of research programs. One way of measuring the amount of CAES resources devoted to an area of research is to examine the number of scientist years expended on that area. The following table lists the scientist years for fiscal year 1977-78 and shows how fund expenditures and scientist years have been applied within the seven program goals.

TABLE 3

CALIFORNIA AGRICULTURAL EXPERIMENT STATION  
 SCIENTIST YEARS AND EXPENDITURES BY RESEARCH PROGRAM GOAL  
 FISCAL YEAR 1977-1978

Research Program Goal	Scientist Years	Expenditures				Total	Percentage by Goal
		State	Federal	Gifts	Other		
I. Renewable Natural Resource Conservation and Management	51.48	\$ 3,694,427	\$ 1,527,702	\$ 274,831	\$ 205,794	\$ 5,702,754	10%
II. Environmental Enhancement and Recreation	66.00	5,753,988	2,033,236	436,649	611,315	8,835,188	15%
III. Production Capacity and Efficiency of Domestic Plants and Animals	132.22	11,381,759	2,882,129	836,843	898,551	15,999,282	27%
IV. Product Improvement and Marketing	56.78	3,611,574	1,174,484	397,105	304,990	5,488,153	9%
V. Protection of Plants and Animals	156.07	10,866,437	3,047,874	896,735	1,170,446	15,981,492	27%
VI. Family and Consumer Welfare	63.37	3,778,867	2,490,528	326,536	97,358	6,693,289	11%
VII. Community and Economic Development	8.41	479,946	142,576	56,858	7,066	686,446	1%
TOTALS	534.33	\$39,566,998	\$13,298,529	\$3,225,557	\$3,295,520	\$59,386,604	
Expenditure Percentage by Fund Source		67%	22%	5%	6%		100%

Table 3 demonstrates where CAES research efforts have been focused. The CAES has strongly supported research activities in the goals of production capacity and efficiency of domestic plants and animals and the protection of plants and animals. About 54 percent of CAES' resources were devoted to research in these goals.

Limited Support for  
Research in Community and  
Economic Development  
and Urban Areas

Although the CAES has emphasized the program goals of agricultural production and plant and animal protection in its research efforts, it has provided limited support to other important program goals and areas. For instance, it has offered only limited support to the program goal of community and economic development even though research areas within this goal are mandated by the Hatch Act. The CAES has also provided limited support to research in the area of pests in the urban sector.

Research in Community and  
Economic Development

The research program goal of community and economic development has received limited research support in the California Agricultural Experiment Station. Although the 1972 five-year plan projected that the number of scientist years

devoted to this goal would more than double between fiscal years 1970-71 and 1975-76, this increased level of effort had not been reached. Scientist years in the area of community and economic development declined by nearly 50 percent, from 16.1 years in fiscal year 1975-76 to 8.41 years in fiscal year 1977-78.

The Hatch Act directed that agricultural experiment stations conduct "such investigations as have for their purpose the development and improvement of the rural home and rural life." The California Agricultural Experiment Station's commitment to this research was demonstrated when, in 1972, the Division of Agriculture and University Services' five-year plan stated that one of its missions was "to contribute to the improvement of man's health and his economic and social surroundings, particularly in rural areas...." In 1977, the Director of the CAES restated the commitment to conduct research in the area of community and economic development.

Research program areas within the community and economic research goal include the economic potential of rural people, causes of poverty among rural people, and improved income opportunities in rural communities. Expenditures and scientist years for the entire community and economic development program goal are shown in Table 4.

TABLE 4  
 COMMUNITY AND ECONOMIC DEVELOPMENT RESEARCH  
FISCAL YEAR 1977-78

<u>Research Problem Areas</u>	<u>Total Expenditures</u>	<u>Scientist Years</u>
Technical Assistance to Developing Countries	\$ 32,008	1.10
Competitive Interrelationships in Agriculture	10,525	.18
Causes of Poverty among Rural People	32,378	.32
Improvement of Economic Potential of Rural People	80,765	1.06
Structural Changes in Agriculture	91,758	1.15
Improved Income Opportunities in Rural Communities	204,799	2.89
Improvement of Rural Community Institutions and Services	91,475	1.11
Research on the Management of Research	<u>142,738</u>	<u>.60</u>
TOTAL	<u>\$686,446</u>	<u>8.41</u>

These research areas constitute only 1.57 percent of the total scientists years and only 1.16 percent of the total CAES expenditures for fiscal year 1977-78.

As previously mentioned in this section, the 1972 five-year plan projected that the number of scientist years in the community and economic development goal would be increased

from 7.4 in fiscal year 1970-71 to 21.0 in fiscal year 1975-76. This increased level of research effort was not reached; moreover, there has been a decline of almost 50 percent in actual scientist years devoted to this goal between fiscal years 1975-76 and 1977-78.

An example of the limited support in this goal is illustrated by the program area causes of poverty among rural people. Recent research indicates that California's poor are concentrated in areas of large-scale high-yield agriculture, with the exception of the poor in the Los Angeles area.\* However, the CAES expended only \$32,378--.05 percent of the total CAES expenditures and .32 scientist years researching this area.

#### Research in Urban Area Pests

The CAES has conducted studies of urban area pest problems since these problems are similar to those in the agricultural environment and affect Californians at large. The CAES has approved research on urban pests, the effects of pesticide use within urban areas, and the problems of rodents. The Federal Government has also approved urban research projects for funding under the Hatch Act. However, while the

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\* Draft report -- Poverty in the State of California, D. MacCannell, University of California, Davis.

economic loss due to urban area pests is significant, the CAES directs only a limited amount of resources toward research in this area.

Economic loss to California crops from plant pests totaled \$589 million in 1977. For fiscal year 1977-78, the CAES conducted research on projects to control agricultural pests; this research was supported by 45.1 scientist years and \$4.6 million. In contrast, research efforts in the urban pest area during fiscal year 1977-78 amounted to approximately 5.3 scientist years and \$.5 million. Yet the cost to the general public from pests in the urban sector amounted to over \$300 million. For example, termite problems in the urban sector result in over \$137 million worth of damage a year in California and vertebrate pests (chiefly rodents) destroy about \$93 million worth of foodstuffs in the State in agricultural and urban settings. Despite these losses, only about 1.5 scientist years are devoted to termite research, and about 1.2 scientist years are devoted to rodent research annually.

Aside from the verifiable dollar losses resulting from pests in the urban sector, there are also the costs of the general public's attempt to control pests. It is estimated that the cost of these materials alone is \$45 million. Urban Californians use an estimated 35 to 40 million pounds of

pesticides a year. Recent research indicates that very little is known about homeowners' uses of pesticides. CAES support for research in this area has been limited.

#### CONCLUSION

The California Agricultural Experiment Station has no current formal plans which outline its research efforts and which are available for public and legislative review. Since the 1972 five-year plan is outdated and the CAES has no formal plan on the relative importance of all areas of research, we could not ascertain why support for research in the community and economic development and urban pest areas was limited while other research areas were emphasized. Likewise, the Legislature cannot determine what research programs are funded equitably because the University requests funds for unspecified agricultural research.

#### RECOMMENDATION

The California Agricultural Experiment Station should consider (1) preparing a management plan which contains overall research priorities for funding and (2) establishing a system to measure the effectiveness of the California Agricultural



Experiment Station in fulfilling its research objectives. This plan should be periodically updated for purposes of management evaluation and measurement and should be available for legislative review and public study.

MATTERS FOR CONSIDERATION  
BY THE LEGISLATURE

The Legislature may wish to require the University of California, in its agricultural research budget request, to specify how state monies will be used to support specific California Agricultural Experiment Station research programs.

CALIFORNIA AGRICULTURAL EXPERIMENT STATION  
IS NOT RECOVERING INDIRECT COSTS

The California Agricultural Experiment Station does not always recover appropriate indirect costs for research activities as required by University regulations.\* A previous Auditor General report issued in September of 1978 reported this failure to recover indirect costs, and this deficiency still exists.\*\* Furthermore, certain funds received from private sponsors to support specific tests and investigations are being incorrectly classified as gifts, which under University policy are not subject to indirect cost charges. Many private grants and contracts which are subject to indirect costs have been exempted from these costs. As a result, some private sponsors who do pay indirect costs are receiving inequitable treatment. Moreover, these practices have caused the State to subsidize certain privately sponsored research activities.

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\* Indirect costs include costs not readily identifiable with or incurred as the result of specific research activity but those costs generally applicable to research activity. This category includes such costs as maintenance and operation, building and equipment use allowance, administration, libraries, and student services.

\*\* Review of Privately Supported Research, Report No. 715.9, Office of the Auditor General, California State Legislature, September 1978.

## University Regulations

The University of California is required to recover direct and indirect costs from outside agencies for research conducted by the University. University Regulation No. 4 states in part that "for all tests and investigations made for agencies outside the University, a charge shall be made sufficient to cover all expenses, both direct and indirect." The practice of recovering indirect costs from the sponsors of research is to ensure that such costs associated with that research are not borne by the State. The University's current base rate for indirect costs is 29.6 percent of direct costs.

Previous Auditor General  
Report No. 715.9

The Auditor General's report, Review of Privately Supported Research, issued in September of 1978, examined research activities throughout the UC system. The report noted that certain funds received from private sponsors in support of a large number of research projects were classified as gifts. These projects, however, exhibited characteristics normally associated with grants and contracts. By incorrectly classifying as gifts funds received from private sponsors to support specific research activities, the State was subsidizing privately supported research. Furthermore, the report disclosed that the University reduced or eliminated indirect costs on some privately sponsored grants and contracts.

To correct these problems, the report recommended that the University recover full indirect costs of privately sponsored research, develop a clear definition of a gift, and vigorously enforce university policy so that privately sponsored research will not be classified as gifts.

The University's official response to the report's conclusion and recommendations said in part

More rigorous enforcement of this policy is clearly needed and is being put into effect.

Funds received from private entities for the support of research should be subject to review to determine that such research conforms to University regulations and, when appropriate, is subject to policies and procedures governing the conduct of sponsored research. The University is currently developing a policy which will provide more specific guidance concerning such reviews including application of indirect cost rates where sponsored projects are involved, as contrasted to outright gifts for support of research.

#### Research Funds Improperly Classified as Gifts

We reviewed correspondence from the period prior to the issuance of report 715.9 and found that sponsors might specify one or more of the following conditions:

- The experiment would be carried out under conditions specified by the sponsor;

- The sponsor's personnel would direct certain activities;
- Certain reports were required; and
- The final report would be furnished to the sponsor before being published.

We then reviewed gifts, grants, and contracts received by the California Agricultural Experiment Station during the year following the issuance of report 715.9, and we determined that many research projects are still partially supported by funds in the form of gifts from private sponsors.\* Moreover, some sponsors still specified in writing certain terms and conditions to be followed. Once classified as gifts, the funds received were not subject to indirect cost charges and the total amount could be used to support the research objectives.

The following letter which accompanied a gift from a chemical company to the CAES illustrates the practices criticized by report 715.9.

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\* Certain research projects receive extensive gift funds. Gift money to support CAES research for fiscal year 1977-78 was provided to 460 projects out of 1,148 and amounted to \$3,262,176. One hundred and fifty projects expended more than \$6,000 each in gift money. These 150 projects, representing 13 percent of the total projects, received 85 percent of the total gift funding. This concentration of gift money was primarily in the areas of production capacity and efficiency of domestic plants and animals, and protection of plants and animals.

It was a pleasure talking to you this morning and discussing our cooperative research program on (crop) and (crop) with our (pesticide) and (pesticide).

I think the rates of (pesticide) in (crop) of 1, 2 and 3 gallons per acre in the row should prove very successful. I also feel that the rates which we discussed for the (pesticide) and (pesticide) should be equally successful.

I am enclosing a grant-in-aid of \$1,500 to help defer some of your expenses in these tests.\*

Eight months after report 715.9 was issued, the University continued to classify money received from this chemical company as a gift, although it was intended to fund the same type of research on the same pesticide. This letter from the University verifies the classification:

This will acknowledge receipt of your check No. 0643 dated April 12, 1979 in the amount of \$2,000.00 to establish a grant-in-aid in support of (pest) control studies with (chemical name) under the direction of Dr. (name), (department), University of California, (campus).

On behalf of the President and The Regents of the University of California, I am pleased to accept this gift and to assure you of our sincere appreciation for the generous support and interest of (company) in our research efforts.

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\* The University defines grant-in-aid as a gift.

The next letter indicates that the CAES was conducting specific tests and investigations for a chemical company; however, no indirect costs were recovered as required by University Regulation No. 4. Dated seven months after the issuance of report 715.9, this correspondence from a chemical company representative preceded a check for \$1,000 which was classified as a gift to a UC researcher.

I would like to briefly summarize our conversation concerning your work with (company product) on (weed). We understand you will apply (company product) at rates of 2 and 4 lbs. ai/A, and (company product) plus (chemical), at 1 + 1 lbs. ai/A. These rates will be applied at two locations in California.

Thank you for your interest in (company) products.

#### Fees for Service

Other correspondence indicates that UC researchers have received fees for certain services in the form of gifts. In analyzing correspondence within this department, we discovered these letters which the CAES sent to a private company. The first letter returned the check to the company because the sender had indicated a fee for service on the check.

I am returning your check for \$125 payable to the Regents of the University of California as a fee for (activity). We cannot accept this check as a gift or grant to the University for (activity) because of

the nature of the information on the check. Would you please send to me a check of the standard type, made out to the Regents of the University of California for the \$125, and if you wish to state the purpose for which the \$125 is being paid for your records, please give that in a separate letter or note.

I am sorry to put you to this trouble and look forward to receiving the replacement check.

The second letter is the standard acknowledgement which the CAES sent after the company had submitted the replacement check.

I am writing to acknowledge receipt of your firm's check in the amount of \$125 received as a grant-in-aid in support of research in (research area and research area) at (department). This expression of your interest in our efforts at the (department) is very much appreciated.

Another illustration of charging fees for a study is evidenced by excerpts from two letters from the CAES to a private company.

With this letter I am forwarding two copies of Final Report No (xxx) entitled (title) by (researcher) and (researcher). This is the final report of the study concerning your company's pesticides, (names of pesticides).

In accordance with earlier agreements, costs for this study totalled \$885.



After receiving the payment for the service, the University acknowledged the receipt of funds as though it was a gift by dispatching the following letter.

I am writing to acknowledge receipt of your company's check in the amount of \$885 as a grant-in-aid in support of research here at (department) in the area of (research title).

Your interest and support of our efforts here at (department) is greatly appreciated.

In this example, as in those above, no indirect costs were recovered for research expenses. Thus, the CAES subsidized this research by absorbing the costs for utilities, administration, and facilities.

Another example of the practice of accepting gifts to support specific research activity is illustrated by the following letter from a private company to the CAES. In this example, the company specified that its representative would work on campus conducting research for the company.

(Company) wishes to award a gift for the amount of \$20,024 to cover the total project cost of construction of a prefabricated greenhouse unit. It is agreed by (company) that the greenhouse facility will be the property of the Regents of the University of California and will be managed by and assigned to the (department) upon completion of construction. Further, it is agreed that the (company) representative, (researcher), will have a courtesy University appointment and in general will use the greenhouse for

three years in conjunction with the (department) with provision for extension of use by (company) for an additional two years in cooperation with (department) use.

The company representative was given the courtesy appointment within the CAES but remained a full-time paid employee of the donor company during his tenure at the CAES. His research centered around a specific interest of his employer, and his employer provided funds to the CAES to support the direct costs of his research activities, staff, and supplies. At the time of our field work, this project was still ongoing. Again, since these funds were classified as gifts, the CAES subsidized this research because it absorbed various indirect costs.

Grants and Contracts  
Exempted From Indirect Costs

Our review of grants and contracts within the CAES revealed that indirect costs are not always recovered for privately sponsored research under these classifications. Specifically, the CAES did not recover indirect costs from most private companies and associations representing agricultural interests. At the same time, it did require many charitable organizations to pay these costs.

The University grants and contracts policy, which includes agreements with the State and with the Federal Government, states that effort is to be directed toward the full recovery of indirect costs. Inconsistent with the above policy, however, indirect costs are not always recovered. Indirect cost rates are individually negotiated for application to projects. Deviations from the University's rates are allowable if the sponsor will not negotiate his rates and if the sponsor consistently applies this policy in dealing with other universities. Therefore, the University will not attempt to recover indirect costs if the sponsor's policy is to pay no indirect costs.

An addendum to the University's official grants and contracts policy exempts state marketing orders from paying indirect costs. Although no specific policies have been formulated, federal marketing orders and associations of agricultural growers and processors have also been routinely exempted from paying indirect costs.

We analyzed all contracts and grants at one campus of the CAES for the period between October 1, 1978 and September 30, 1979. Three hundred thirty of the 392 contracts and grants reviewed were from the state and federal government. These contracts and grants were assessed standard indirect charges. The 62 remaining contracts and grants were from

private sponsors; these included private companies, foundations, and agricultural growers and processors. The CAES did not recover indirect costs on 41 of the 62 contracts and grants.

Table 6 gives a complete list of sponsoring organizations and indirect rates assessed if any.

TABLE 6  
**CONTRACTS AND GRANTS**  
**CALIFORNIA AGRICULTURAL EXPERIMENT STATION**  
10/1/78 - 9/30/79

With No Indirect Charges				With Indirect Charges			
<u>Organization</u>	<u>Contracts or Grants</u>	<u>Amount</u>	<u>Percentage of Indirect Costs Assessed</u>	<u>Organization</u>	<u>Contracts or Grants</u>	<u>Amount</u>	<u>Percentage of Indirect Costs Assessed</u>
National Steel Corporation	1	\$ 12,000	0%	American Cancer Society	1	\$ 64,134	19.7%
James Dole Corporation	1	12,000	0%	Muscular Dystrophy Association	5	148,276	8.0%
Canner's League	7	121,906	0%	Pacific Gas & Electric	1	12,001	19.0%
Heinz, USA	1	2,475	0%	Chino Basin Municipal Water District	2	45,343	26.0%
California Tomato Research Institute Incorporated	5	54,500	0%	Republic Geothermal	1	45,430	26.0%
Pistachio Association	1	17,000	0%	University of Hawaii	1	107,910	29.0%
Grower-Shipper Association	1	32,369	0%	Dow Chemical USA	1	25,000	29.6%
Continental Grain	2	60,000	0%	American Heart Association	1	1,906	10.0%
3M Company	1	6,000	0%	Golden Empire Heart Association	1	4,685	10.0%
Artichoke Industries, Inc.	1	17,527	0%	California Heart Association	1	10,065	10.0%
Hunt-Wesson	1	18,711	0%	W.R. Grace Company	1	15,759	29.6%
Northern California Flower Shippers Association	1	15,000	0%	Ergotex	3	31,310	26.0%
California Sugar Beet Association	1	8,200	0%	Lilly Research Foundation	1	7,600	29.6%
Pet Food Institute	1	56,427	0%	Foundation for Child Development	1	17,250	19.7%
Monsanto Fund	1	12,955	0%				
California Lung Association	1	4,882	0%				
Pacific Coast Canned Pear Association	1	8,313	0%				
National Chicano Council	1	10,000	0%				
Nutrition Foundation	1	20,000	0%				
World Health Organization	1	30,000	0%				
Ford Foundation	1	12,200	0%				
California Commission on the Relationship of Energy to Agriculture	2	57,250	0%				
Rockefeller Foundation	1	5,712	0%				
Boswell Foundation	1	5,000	0%				
Fats and Protein Foundation	1	8,000	0%				
Canadian Forestry Service	1	6,000	0%				
National Livestock Meat Board	2	16,200	0%				
University of Hawaii	1	5,000	0%				

Our analysis disclosed that many charitable organizations, such as the American Cancer Society were paying indirect costs for research conducted under grants and contracts. However, the CAES did not recover indirect costs from certain private companies and associations representing agricultural interests. Had indirect costs been recovered for research done under all 62 contracts and grants at the University's basic rate of 29.6 percent, it would have collected over \$300,000.

#### CONCLUSION

Because the University of California has failed to ensure (1) that funds received as contracts, grants, or gifts are properly classified and (2) that indirect cost rates are appropriately applied, the State has subsidized certain research projects of private sponsors. These practices deprive the University of funds for its own support or for sponsoring additional research.

## RECOMMENDATION

We recommend that the California Agricultural Experiment Station

- Develop and implement improved policies and procedures to ensure that funds received from private sponsors to promote specific research interests are classified as grants or contracts rather than as gifts;
- Enforce Regulation No. 4 which requires in part that "for all tests and investigations made for agencies outside the University, a charge shall be made sufficient to cover all expenses, both direct and indirect;"
- Implement a policy which applies indirect cost rates for grants and contracts in a fair and consistent manner.

CAES DOES NOT ADEQUATELY CONTROL  
THE USE OF RESTRICTED PESTICIDES

Some researchers of the California Agricultural Experiment Station using restricted pesticides are not complying with state laws concerning registration and use permits. Although the University's Environmental Health and Safety Officers provide control and assistance in pesticide storage and use, CAES researchers receive, store, and use certain pesticides without permits or centralized control. As a result, it is not known who has been exposed to restricted pesticides in case they prove harmful over time.

The Cooperative Extension Services' (CES) Office of Pesticide Information and Coordination is responsible for disseminating current information and directives to the Cooperative Extension. This office, however, does not have line authority over the CAES and, as a result, CAES researchers are not constrained to follow their directives. Campus Environmental Health and Safety Officers are responsible for recording and maintaining permits for using restricted pesticides at each campus.



Required Permits  
Not Always Obtained

Permits for possessing and using restricted pesticides are required under state law.\* However, we found that some CAES researchers do not always obtain the required permits. For example, in one instance, a researcher tested two restricted pesticides (DBCP and the herbicide 2,4,5-T) but neither he nor the University had permits to store or use these substances. Another instance concerned a researcher who tested two restricted pesticides (Nemacur and Temik) in a county other than where his University campus was located. This researcher did not obtain the required permit from that county's agricultural commissioner. In discussions with the county commissioner, we learned that he thought the University was exempt from obtaining permits. On the contrary, the University is not exempt from obtaining permits to store, use, or transport restricted pesticides.

Some of the chemicals researchers use in their experiments are given to them by chemical companies as gifts. University officials are not aware of the presence of some of these materials. Serious problems could result from this practice. Graduate students and University staff are exposed to these materials. If a restricted pesticide should prove

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\* Title 3, California Administrative Code, Section 2450 as well as Agricultural Code, Sec. 14006.6 require permits for using restricted pesticides.

dangerous over the course of time, no formal records exist to document who used the compound, how long it was used, or where it was used.

Environmental and Safety Officers of the University obtain permits to test restricted pesticides in certain instances. These permits, however, are based upon information supplied by researchers who are conducting tests which require the use of restricted pesticides. The researchers do not always notify the office when testing certain substances. No formal records are maintained at the University documenting the use of pesticides or information on persons who came in contact with restricted pesticides. Also, when CAES researchers test restricted materials on private farms with chemicals provided by chemical companies, they do not always obtain permits.

Normally, these pesticides are disseminated on small plots of ground. Small amounts of restricted materials are used frequently over a period of time. If researchers use such compounds on a farmer's property, federal regulations prohibit the crop from being sold if it exceeds tolerance levels as established by the federal Food and Drug Administration. If it does exceed those levels, the crop must be destroyed.

## CONCLUSION

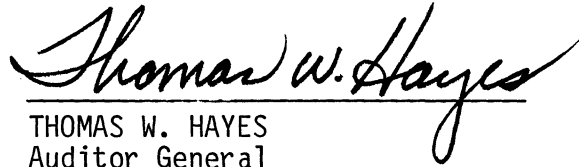
Some California Agricultural Experiment Station researchers are using restricted pesticides without obtaining permits which are statutorily required. No formal records are maintained at the University documenting the use of pesticides or information on persons who come in contact with restricted pesticides.

## RECOMMENDATION

We recommend that the University make the Office of Pesticide Information and Coordination responsible for pesticide information and control for both the California Agricultural Experiment Station and the Cooperative Extension Service. We recommend that branches of this office be located at all three agricultural experiment station campuses but that the branches be centrally coordinated. The responsibilities of this office should include maintaining records on all restricted pesticides that are purchased or received as gifts and obtaining permits for University researchers using restricted pesticides. We further recommend that this office maintain records indicating (1) who used the

restricted pesticides, (2) where they were used,  
(3) the length of the tests, and (4) who was  
exposed to the materials during the research project.

Respectfully submitted,

  
THOMAS W. HAYES  
Auditor General

Date: March 19, 1980

Staff: William M. Zimmerling, CPA, Audit Manager  
Robert J. Maloney  
James H. McAlister  
Noriaki Hirasuna  
Karen Strand



Office of the President

BERKELEY, CALIFORNIA 94720

March 17, 1980

Mr. Thomas W. Hayes  
Auditor General  
Office of the Auditor General  
925 "L" Street, Suite 750  
Sacramento, California 95814

Dear Mr. Hayes:

In response to your letter of March 6, I attach a staff analysis of the audit findings resulting from your review of the research activities of the University of California's Agricultural Experiment Station. I concur with the analysis and want to add some comments of my own.

I am pleased that the report acknowledges the significant contributions of the Agricultural Experiment Station to agricultural research and to achievements in agricultural production in the State. It is clear that these accomplishments resulted, in large measure, from the latitude and independence the researchers have had over the years to select and pursue their specific research objectives within the broad goals and priorities established by the Experiment Station. Therefore, I am concerned by the suggestion that the Legislature become involved in the details of establishing research priorities and evaluating research effectiveness.

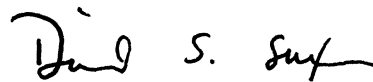
Experience has tended to demonstrate that the most effective way to accomplish the planning and evaluation of research programs, including that of CAES, is the one we normally pursue in the University, which involves a combination of peer and administrative participation in a consistent process. This permits combining the level of flexibility required to accommodate not only State priorities, but also national and local priorities (all of which are important in agricultural research) with a reasonable degree of assurance of high quality research.

Mr. Thomas W. Hayes  
March 17, 1980  
Page Two

We will exert our best efforts to expedite correction of problems related to the proper classification of extramural support and the use of pesticides.

In view of the limited time available to coordinate and prepare our response, I may wish to amplify it at a later time.

Sincerely,



David S. Saxon  
President

cc: Chancellor Albert H. Bowker  
Chancellor James H. Meyer  
Chancellor Tomás Rivera  
Vice President J. B. Kendrick, Jr.  
Vice President Thomas E. Jenkins  
Special Assistant Lowell Paige

ANALYSIS OF DRAFT REPORT OF THE OFFICE OF THE AUDITOR GENERAL  
ON THE AGRICULTURAL EXPERIMENT STATION:  
AN ANALYSIS OF RESEARCH PROGRAM ACTIVITIES

Following is an analysis of the audit results and recommendations as set forth in the Auditor General's draft report on research program activities of the University of California's Agricultural Experiment Station (CAES).

Audit Comment

On page 1 of the report it is stated that "while the CAES has extensively supported research in the agricultural production, product improvement, and protection of plants and animals, it has provided only limited support in the community and economic development research area--including research concerning the rural poor. Limited support has also been provided for the research urban pest problems."

Response

First, CAES has intentionally given extensive support to "agricultural production, product improvement, and protection of plants and animals." That has been and will continue to be its major responsibility at least until such time as both the Congress of the United States and the State Legislature deem otherwise. The fact that the auditors' analysis contained in the report disclosed substantial variation in distribution of resources among seven categories of research issues it should be. There is no reason to believe that all types of research need to be supported to the same degree, nor to occupy the same relative position to each other.

Audit Comment

Again on page 1 the statement is made that "...the CAES does not routinely apprise the Legislature of research expenditures supported by state appropriations."

Response

This information is already available in the annual reporting system used by the CAES. Known as the Current Research Information Service (CRIS), the system reports progress of every project in the Experiment Station on an annual basis, including the amount and sources of funds used by each project.\* This information is available to the Legislature and public and in the past has been given to all who requested it.

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\* Auditor General Comment: As stated on page 8 of the report, the CRIS is a federal reporting requirement that includes summary information only and does not provide readily available information on individual projects. Further, this report is not timely and does not summarize research results. The CRIS is not provided to and would not adequately inform the Legislature of CAES activities.

Audit Comment

On page 2 it is stated that the auditors' review "...disclosed weaknesses in the gifts, contracts, and grants area. For example, by classifying as gifts funds to support specific research, the station has failed to recover indirect costs. Funds meant to support specific research projects should be classified as grants or contracts."

Response

It is recognized that in the past our policy concerning extramural support for agricultural research made it difficult to differentiate in some cases between a gift and a grant/contract when these funds have been used to supplement the organized research program of mission oriented agricultural research. To clarify this situation the University has developed a policy with more explicit criteria for distinguishing between a gift and grant/contract (Attachment I) which is in the final stages of review. It is expected it will be issued in the near future. In the meantime, in anticipation of its formal issuance campuses have been proceeding with local implementing actions: For example, the guidelines being used at the Davis Campus since September 1979 are attached (Attachment II). In dealing with this problem it should be recognized that even with the existence of criteria for identifying gifts and grants/contracts there will be instances in which judgement will have to be exercised in reaching a decision on the classification of an award of funds.

Audit Comment

On page 2 the auditors' reported that they "...found that CAES researchers were using restricted pesticides without permits. Also, no systematic records were maintained at the University on persons who could have been exposed to restricted pesticides during testing." Thus it was recommended on page 3 that the CAES "Implement and enforce more effective controls over pesticide use and maintain records on all restricted pesticides.

Response

It is of concern that two examples of abuses are used as a basis for what gives the appearance of a general indictment.\*

The CAES recognized sometime ago the need for a tighter monitoring of pesticide use and has been searching for a procedure that will not stifle pesticide research. Agricultural Code, Sec. 14006.6 provides: "Permits for the use of pesticides shall not be required of persons found to be qualified by the director who are engaged in experimentation or research on the use of pesticides, where no charge is made to the grower." Although

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\* Auditor General Comment: Although there were additional instances where researchers were not obtaining required permits, these two examples were used to demonstrate the systemic weakness that exists within the CAES.



the Director of the Department of Food and Agriculture has not to date qualified any person for exemption doing research with restricted pesticides, CAES has been negotiating a policy with CDFA that would employ permits on the one hand, and on the other hand, allow University personnel to do small plot testing without a permit. This proposed policy (Attachment III) has been reviewed by University personnel and has been under consideration in CDFA.

In addition, a campus Pest and Disease Management Unit developed by the Office of Environmental Health and Safety at Davis was proposed in January 1980 and is being considered for implementation of a monitoring system.

Audit Comment

On page 2 it is recommended that the "California Agricultural Experiment Station consider establishing both a management plan detailing research priorities and a system to evaluate the effectiveness of research. These should be made available for legislative and public review."

Response

The auditors did recognize that a management plan was developed in 1972 but alleged that it had not been updated. What was not recognized by the auditor is that the Vice President, Agriculture and University Services, and his staff meet with each campus Associate Director of CAES on an annual basis to update that plan.\* The annual revisions concentrate on the subject matter and personnel to be emphasized when vacancies are filled. The considerations are on a three-year rolling average. Also the auditors did not give recognition to the current comprehensive updating of the plan which is underway as part of the University Academic Planning Process although they did acknowledge the 1979 plan for the Davis Campus. Plans for the Berkeley and Riverside campuses, representing the balance of CAES effort, are nearing completion.\*\* The portion of the recommendation which suggests legislative and public review of the plans undoubtedly derives in part from the observation that limited support is given in the community and economic development research area and for research of urban pest problems. It must be recognized that the auditors chose a two-year period (1976-68) in which to show a decline in support in this area whereas in the

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\* Auditor General Comment: The purpose of these meetings is to determine future researcher needs. The meetings have never resulted in formal published revisions to the CAES five year plan.

\*\* Auditor General Comment: These efforts are acknowledged on page 13 of the report.

overall period of 1971-72 to 1978-79, there has been over 100 percent increase in support. While it is true that the total amount of support in the area of community and economic development is low in comparison to the overall research effort, it does not mean the concerns of the rural poor are ignored as the report might lead one to believe. We suggest that the auditors did not fully analyze the programs in this area. It is true that a limited amount of state funds are used in this category since there is additional federal support.\* Community and economic development includes, for example, foreign agriculture development. The Division is extensively involved in international activities in less developed nations including working with rural poor through research programs funded by the U.S. Agency for International Development

under the auspices of Title XII International Development. It is very proper that federal funds are the primary source of funding in this area rather than using state funds. The total program and priorities are therefore not set solely by state dollars. While the Legislature and the public have a right to know details of CAES research programs and are entitled to expenditure data as requested, it is essential that CAES continue to establish its own priorities in order to accommodate national as well as state and local priorities.

Also, the report, by concentrating on the category of research "Community and Economic Development" (Category VII on page 10), is misleading in another respect. Concerns of the rural poor involve not only Category VII but also the category "Family and Consumer Welfare" (Category VI) as well as all of the other categories. If the other major category of research concerned with rural poor (Family and Consumer Welfare) is combined with Community and Economic Development, 14.1 percent of the CAES resources or \$8,363,720 were invested in this area in 1978-79.\*\*As in the international area, CAES draws from other units in the University particularly in the social sciences for research support in this area. The auditor's report made no analysis of the Systemwide contributions which influence how much CAES should do.

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\* Auditor General Comment: Our table on page 18 includes all federal, state, and other support for this category.

\*\* Auditor General Comment: In conducting our analysis we used the CAES' system of project classification. Projects in category VI ("Family and Consumer Welfare") do not directly relate to community and economic development. Thus, we disagree with the CAES' attempt to aggregate the expenditures of these two distinct categories and its assertion that category VII program areas are being addressed by research in all other categories.

Page 5

In regard to urban pest management, it must be realized that a critical concern of all Californians is the safe use of pesticides. The legislature has augmented the CAES budget to accelerate the development of an integrated pest management program (IPM). It is essential that CAES concentrate its efforts in this area. Again, this does not mean that urban pest problems are ignored. Research in pest management designed for rural areas is applicable to the urban areas as well. Rodent control, for example, is clearly applicable to both areas and even though the research may not be classified as urban research, it is directly applicable to that area. In this context the auditor's report did not fully recognize the CAES effort into urban pest problems.

CHANCELLORS  
VICE PRESIDENT KENDRICK  
EXECUTIVE ASSISTANT WILSON

Subject: Review of Gifts/Grants for Research

In a review of the University's acceptance of funds from private organizations for research the State Auditor General concluded that in many cases monies awarded to the University which should have been classified and processed as grants or contracts for services were classified and processed as gifts.

To clarify this situation and to insure greater consistency among campuses, the following guidelines should be observed:

In general, classify funds as gifts when the following characteristics exist:

- \* donor does not impose contractual requirements beyond the reporting of research results
- \* funds are awarded irrevocably

In general, classify funds as grants or contracts when the following characteristics exist:

- \* provision for audits by or on behalf of the grantor
- \* the grantor is to receive or be entitled to receive some consideration such as a detailed technical report of research results or a report of expenditures
- \* testing or evaluating of proprietary products is involved
- \* proposal submitted to grantor
- \* the research is directed to satisfying specific grantor requirements (e.g., terms and conditions stating a precise scope of work to be done rather than a general area of research)

- \* a specified period of performance is prescribed or termination is at the discretion of the grantor
- \* funds unexpended at end of period shall be returned to the grantor

Since in many situations all of the above characteristics will not be present, judgment must be exercised in order to classify the award in accordance with the intent of this policy. The decision as to whether a particular award should be considered a gift cannot be made based upon the presence or absence of a single characteristic or criterion. Rather, one must look at the award in toto in order to make a judgment as to its proper classification.

Regardless of the designation of an award as a gift or grant/contract, it will be subject to the research review process as well as to the administrative rules and procedures which apply to all University Funds. The processing of gifts will not include the application of indirect costs. Processing of grants and contracts will include the application of indirect costs in accordance with University policy.

The above guidelines are not intended to indicate whether processing of gifts/grants is to occur in the campus Contract and Grant Office or the campus Development Office. Organization of the processing/acceptance/administration of gift/grant funds is a local matter.

David S. Saxon

cc: General Counsel Reidhaar

UC DAVIS POLICY & PROCEDURE MANUAL  
GIFTS AND ENDOWMENTSDEFINITION OF GIFTS FOR RESEARCHSection 260-10  
Supersedes: NewI. PURPOSE

This section defines categories of private support of research in order to distinguish gifts from research agreements, such as contracts and grants, or service agreements with a research component.

II. GIFTS FOR RESEARCHA. Definition

A gift for research is an irrevocable donation of funds or non-monetary assets to support research which does not impose contractual requirements on the University. A gift allows the University discretion in determining specific use and should not be identified by the term "grant" or "grant-in-aid."

1. A gift may not require performance of a specific research task;
2. A gift may not include limitations of or control over types of expenditures;
3. A gift may not require that technical, clinical, invention, or other exclusive reports be submitted to the donor;
4. A gift may not specify a period of performance or include termination clauses;
5. A gift does not contain an implicit or explicit statement of a quid pro quo, that is services, goods or exclusive information to be provided to the donor as consideration for the gift.

Gifts for research are the responsibility of the Campus Development Office in coordination with the Dean, Graduate Studies and Research.

1. Refer to Section 260-15 for policy governing formal solicitation of gifts and informal communications with potential sponsors.
2. Refer to Section 260-25 for gift reporting and acceptance procedures.

### III. NON-GIFT SOURCES OF RESEARCH SUPPORT

The following definitions are presented in order to distinguish other extramural sources of research support from gifts for research.

#### A. Research and training agreements

##### 1. Definition

A research or training agreement (usually called a contract or grant) obligates the recipient to perform research, training, or some other service of an investigative nature the results of which are of more than incidental significance to the sponsor.

- a. The activity must be of benefit to the academic programs of University or to the public. The provisions are specified and usually include one or more of the following:
  - 1) Description of specific research, or other investigative task to be performed.
  - 2) Limitations as to period of performance  
or  
termination clauses.
  - 3) Limitations on the types of expenditures permitted.
  - 4) Requirement of technical reports reflecting interpretive analysis or clinical, fiscal, or invention reports to the sponsoring agency.
  - 5) Involves tasks that are non-routine the results which are likely to be publishable.

b. Research and training agreements must recover applicable indirect costs.

2. Responsible Administrative Office

Approval of research and training agreements are the responsibility of the Office of Research. Detailed policies and procedures may be found in the 250s sections of this manual.

B. Service agreements with a research component

1. Definition

Service agreements with a research component may be contracts, purchase orders, and letters of memoranda which, irrespective of format or title, provide for the purchase of services or goods from the University and which are of benefit or potential benefit to the purchaser.

a. Service agreements are used by non-University clients to procure clinical, field, or laboratory testing of products or other services or goods. Such agreements:

- 1) Describe the specific service, goods, or testing to be provided or undertaken;
- 2) State the terms, conditions, and costs of the activity, including delivery date or period of performance;
- 3) Provide that data, if any, are collected and delivered without significant interpretive analysis or conclusions;
- 4) Involve tasks that are routine and/or use a procedure that is standard or supplied by the sponsor;
- 5) Ordinarily are not likely to yield publishable results in and of themselves.



- b. Service agreements must benefit the University, the investigator, and/or the public or require facilities or expertise that do not exist elsewhere; and must recover full costs.

2. Responsible Administrative Office

Approval of service agreements are the responsibility of the Business Contracts and Analysis Office. Refer to Section 330-5 0 for policy and procedures.

#### IV. Problem Areas

Certain kinds of donations or sponsorship have been a source of confusion and difficulty in the past. They are listed below to assist in determining the category of the funds.

- A. Research projects sponsored by pharmaceutical or medical supply firms and involving investigational new drugs or devices or which use humans as subjects according to a standard protocol ordinarily are undertaken by means of research agreements, not gifts for research.
- B. Support from commercial sources for clinical, field, or laboratory testing of products such as pre-phase I drugs or devices, animal vaccines and medications, pesticides, herbicides, plant growth products, food processing agents, or machine performance tests, mineral assays, soil or water analysis, and the like, when proprietary products are involved, ordinarily are undertaken by means of service agreements.
- C. Agricultural research sponsored by consortia of growers or industries ordinarily <sup>are</sup> undertaken by means of ~~are~~ research agreements, not <sup>by</sup> gifts for research.

Responsible Administrative Office

January 14, 1980

Proposed California Department of Food and Agriculture Enforcement  
Policy Statement Permits for Restricted Use Materials - - University  
of California personnel

*all to* *ue* MAR 12 1980  
*1/14 3/12*


It is the policy of the California Department of Food and Agriculture that: 1) A seasonal permit may be issued for the purchase, possession and use of restricted use materials in facilities and on land owned or under the control of the Regents of the University of California provided such materials are stored in proper, safe and well-maintained facilities. 2) University of California Researchers, Specialists, Farm Advisors and persons in their employ and under their supervision shall obtain permits from the County Agricultural Commissioner for permit-required materials when such materials are to be used in experiments on land not owned or under the control of the Regents of the University of California a) when an area in excess of 1/4 acre per plot is to be treated with any permit-required material formulation or when the total area included in the experiment (exclusive of untreated or control areas and non-restricted materials) is in excess of 5 acres; b) when one quart or more of each permit-required material formulation is to be tested in experiments involving livestock\*, non-food animals, and experimental units such as greenhouses or structures; and c) for experiments in which permit-required materials are to be applied by aircraft.

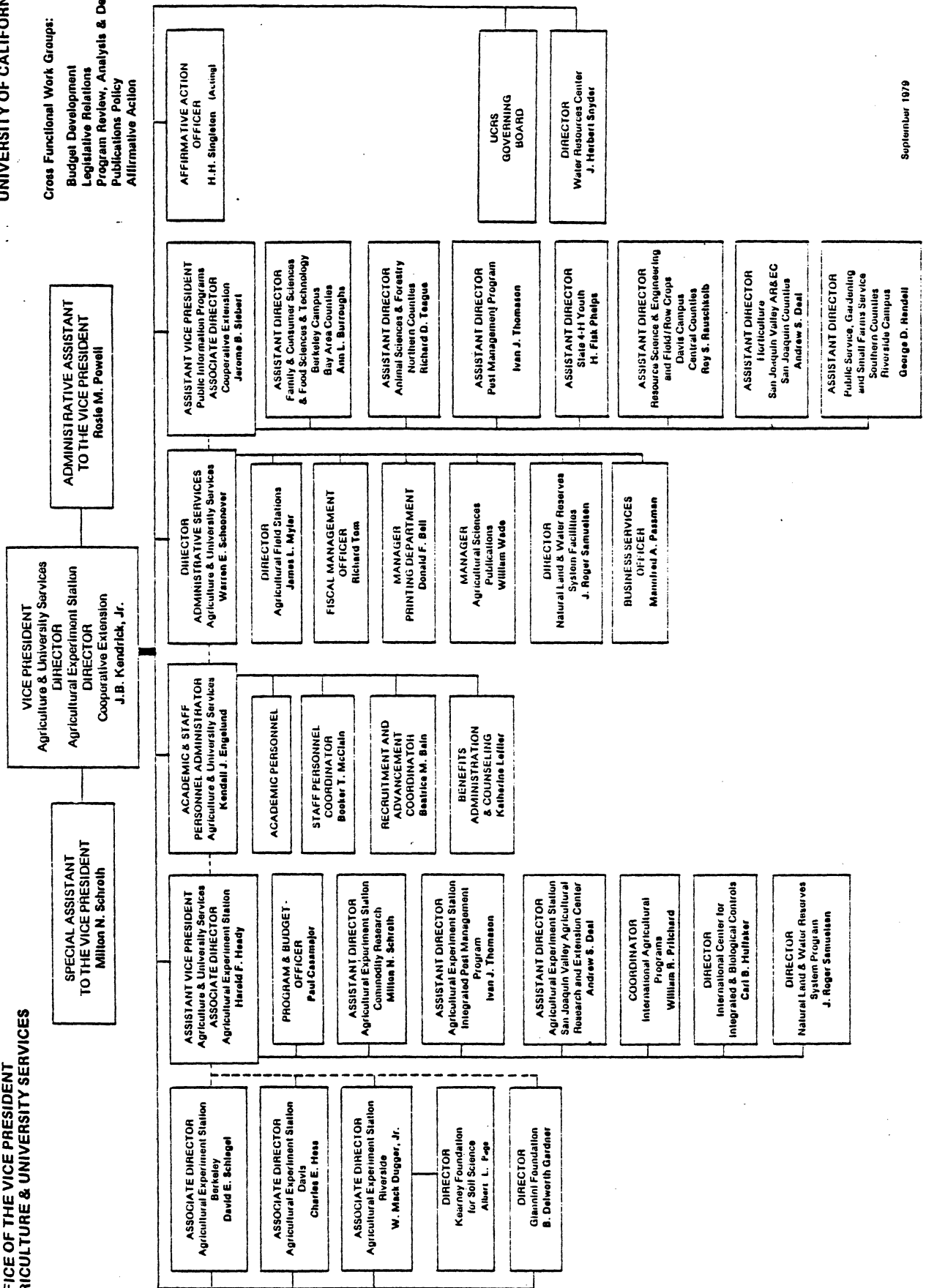
\* Administrative CODE article 20, 2452(d)(3) specifically exempts livestock and poultry when restricted materials are used according to label directions.

**ORGANIZATIONAL CHART  
OFFICE OF AGRICULTURE AND UNIVERSITY SERVICES**

**OFFICE OF THE VICE PRESIDENT  
AGRICULTURE & UNIVERSITY SERVICES**

**UNIVERSITY OF CALIFORNIA**

**Cross Functional Work Groups:**  
Budget Development  
Legislative Relations  
Program Review, Analysis & Development  
Publications Policy  
Affirmative Action



RESEARCH PROGRAM GOALS  
AREAS AND FEDERAL REPORTING FORMATS

Statistical information on research conducted by the State Agricultural Experiment Stations (and by the US Department of Agriculture, the Schools of Forestry, and other cooperating institutions) are compiled yearly into an Inventory of Agricultural Research report. Information is entered through a series of Current Research Information System (CRIS) forms:

1. The AD-416 form describes the research objectives, methodology, and proposed duration of the study.
2. The AD-417 form classifies the research into a research problem area (RPA), a type of Activity (the purpose and nature of the research) and a Commodity (the objective of the research).
3. The AD-419 form is submitted annually and describes the sources and uses of funds for the project and the manpower devoted to the project during the reporting year.
4. The AD-421 form is submitted annually to report progress on the project since the last report. This form lists publications resulting from the research.

Under the USDA system, agricultural research has been classified into nine goals towards which the nation's research should be directed. Each goal is comprised of various research problem areas (RPAs) that contribute to the attainment of the particular goal.

Under the system used by the University of California, the USDA research goals are further classified into three categories:

1. Natural Resources and Environmental Quality
2. Commercial Agriculture--Production, Processing, and Marketing
3. People-Oriented Research--Consumer, Family, and Community.

A fourth category, Disciplinary Research, which had previously been used to categorize all basic research, is now included in the other three categories.

Common to both classification systems is the research problem area (RPA). There are 98 different areas which are described in detail in the USDA's Manual of Classification of Agricultural and Forestry Research (CRIS) Washington, D. C., June 1970.

The following tables list the USDA classification system of goals and RPAs and the University of California system of classification.

APPENDIX TABLE 1

INDEX TO RESEARCH PROBLEM AREAS (RPA'S)

RPA	TITLE
GOAL I: INSURE A STABLE AND PRODUCTIVE AGRICULTURE FOR THE FUTURE THROUGH WISE MANAGEMENT OF NATURAL RESOURCES	
101	Appraisal of Soil Resources.....
102	Soil, Plant, Water, Nutrient Relationships.....
103	Management of Saline and Sodic Soils and Salinity.....
104	Alternative Uses of Land.....
105	Conservation and Efficient Use of Water.....
106	Efficient Drainage and Irrigation Systems and Facilities.....
107	Watershed Protection and Management.....
108	Economic and Legal Problems in Management of Water and Watersheds...
109	Adaptation to Weather and Weather Modification.....
110	Appraisal of Forest and Range Resources.....
111	Biology, Culture and Management of Forests and Timber-Related Crops.....
112	Improvement of Range Resources.....
113	Remote Sensing.....
114	Research on Management of Research.....
GOAL II: PROTECT FORESTS, CROPS AND LIVESTOCK FROM INSECTS, DISEASES AND OTHER HAZARDS	
201	Control of Insects Affecting Forests.....
202	Control of Diseases, parasites and Nematodes Affecting Forests.....
203	Prevention and Control of Forest and Range Fires.....
204	Control of Insects, Mites, Slugs, and Snails on Fruit and Vegetable Crops.....
205	Control of Diseases and Nematodes of Fruit and Vegetable Crops.....
206	Control of Weeds and Other Hazards to Fruit and Vegetable Crops.....
207	Control of Insects, Mites, Snails, and Slugs Affecting Field Crops and Range.....
208	Control of Diseases and Nematodes of Field Crops and Range.....
209	Control of Weeds and Other Hazards of Field Crops and Range.....
210	Control of Insects and External Parasites Affecting Livestock, Poultry, and Other Animals.....
211	Control of Diseases of Livestock, Poultry and Other Animals.....
212	Control of Internal Parasites of Livestock, Poultry, and Other Animals.....
213	Protect Livestock, Poultry and Other Animals from Toxic Chemicals, Poisonous Plants, and Other Hazards.....
214	Protection of Plants, Animals, and Man from Harmful Effects of Pollution.....

RPA

TITLE

GOAL III: PRODUCE AN ADEQUATE SUPPLY OF FARM AND FOREST PRODUCTS  
AT DECREASING REAL PRODUCTION COSTS

- 301 Genetics and Breeding of Forest Trees.....
- 302 New and Improved Forest Engineering Systems.....
- 303 Economics of Timber Production.....
- 304 Improvement of Biological Efficiency of Fruit and  
Vegetable Crops.....
- 305 Mechanization of Fruit and Vegetable Crop Production.....
  
- 306 Production Management Systems for Fruits and Vegetables.....
- 307 Improvement of Biological Efficiency of Field Crops.....
- 308 Mechanization of Production of Field Crops.....
- 309 Production Management Systems for Field Crops.....
- 310 Reproductive Performance of Livestock, Poultry  
and Other Animals.....
  
- 311 Improvement of Biological Efficiency in Production of Livestock,  
Poultry and Other Animals.....
- 312 Environmental Stress in Production of Livestock, Poultry  
and Other Animals.....
- 313 Production Management Systems for Livestock, Poultry  
and Other Animals.....
  
- 314 Bees and Other Pollinating Insects.....
- 315 Improvement of Structures, Facilities and General Purpose  
Farm Supplies and Equipment.....
- 316 Farm Business Management.....
- 317 Mechanization and Structures Used in Production of  
Livestock, Poultry and Other Animals.....
- 318 Non-Commodity-Oriented Biological Technology and Biometry.....

GOAL IV: EXPAND THE DEMAND FOR FARM AND FOREST PRODUCTS BY  
DEVELOPING NEW AND IMPROVED PRODUCTS AND PROCESSES  
AND ENHANCING PRODUCT QUALITY

- 401 New and Improved Forest Products.....
- 402 Production of Fruit and Vegetable Crops with Improved  
Acceptability.....
- 403 New and Improved Fruit and Vegetable Products and Byproducts.....
- 404 Quality Maintenance in Storing and Marketing Fruits and  
Vegetables.....
- 405 Production of Field Crops with Improved Acceptability.....
  
- 406 New and Improved Food Products from Field Crops.....
- 407 New and Improved Feed, Textile, and Industrial Products  
from Field Crops.....
- 408 Quality Maintenance in Storing and Marketing Field Crops.....
- 409 Production of Animal Products with Improved Acceptability.....

RPA

TITLE

GOAL IV (continued)

- 410 New and Improved Meat, Milk, Eggs, and Other Animal Food Products.....
- 411 New and Improved Non-Food Animal Products.....
- 412 Quality Maintenance in marketing Animal Products.....

GOAL V: IMPROVE EFFICIENCY IN THE MARKETING SYSTEM

- 501 Improvement of Grades and Standards--Crop and Animal Products.....
- 502 Development of Markets and Efficient Marketing of Timber and Related Products.....
- 503 Efficiency in Marketing Agricultural Products and Production Inputs\*.....
- 506 Supply, Demand and Price Analysis--Crop and Animal Products.....
- 507 Competitive Interrelationships Agriculture.....
- 508 Development of Domestic Markets for Farm Products.....
- 509 Performance of Marketing Systems.....
- 510 Group Action and Market Power.....
- 511 Improvement in Agricultural Statistics.....
- 512 Improvement of Grades and Standards of Forest Products.....
- 513 Supply, Demand and Price Analysis--Forest Products.....

GOAL VI: EXPAND EXPORT MARKETS AND ASSIST DEVELOPING NATIONS

- 601 Foreign Market Development.....
- 602 Evaluation of Foreign Food Aid Programs.....
- 603 Technical Assistance to Developing Countries.....
- 604 Product Development and Marketing for Foreign Markets.....

GOAL VII: PROTECT CONSUMER HEALTH AND IMPROVE NUTRITION AND WELL-BEING OF THE AMERICAN PEOPLE

- 701 Insure Food Products Free of Toxic Contaminants Including Residues Agricultural and Other Sources.....
- 702 Protect Food and Feed Supplies from Harmful Microorganisms and Naturally Occurring Toxins.....
- 703 Food Choices, Habits, and Consumption.....
- 704 Home and Commercial Food Service.....
- 705 Selection and Care of Clothing and Household Textiles.....
- 706 Control of Insect Pests of Man and His Belongings.....
- 707 Prevent Transmission of Animal Diseases and Parasites to Man.....
- 708 Human Nutrition.....
- 709 Reduction of Hazards to Health and Safety.....

\*This RPA incorporates research formerly included under RPA's 503, 504, and 505.

RPA

TITLE

GOAL VIII: ASSIST RURAL AMERICANS TO IMPROVE  
THEIR LEVEL OF LIVING

- 801 Housing.....
- 802 Individual and Family Decision Making and Resource Use and  
Family Functioning.....
- 803 Causes of Poverty Among Rural People.....
- 804 Improvement of Economic Potential of Rural People.....
  
- 805 Communication and Education Processes.....
- 806 Individual and Family Adjustment to Change.....
- 807 Structural Changes in Agriculture.....
- 808 Government Programs to Balance Farm Output and Market Demand.....

GOAL IX: PROMOTE COMMUNITY IMPROVEMENT INCLUDING DEVELOPMENT OF  
BEAUTY, RECREATION, ENVIRONMENT, ECONOMIC OPPORTUNITY,  
AND PUBLIC SERVICES

- 901 Alleviation of Soil, Water and Air Pollution and Disposal of  
Wastes.....
- 902 Outdoor Recreation.....
- 903 Multiple Use Potential of Forest Land and Evaluation of  
Forestry Programs.....
- 904 Fish and Other Marine Life, Fur-Bearing Animals and  
Other Wildlife.....
  
- 905 Trees to Enhance Rural and Urban Environment.....
- 906 Culture and Protection of Ornamentals and Turf.....
- 907 Improved Income Opportunities in Rural Communities.....
- 908 Improvement of Rural Community Institutions and Services.....



APPENDIX TABLE 2

<u>Research Program Goal</u>	<u>Research Program Unit</u>	<u>Research Problem Area<sup>1/</sup></u>
Research Category (1) NATURAL RESOURCES AND ENVIRONMENTAL QUALITY		
I Renewable Natural Resource Conservation and Management	I-A Improvement of Quality and Quantity of Forest and Range Production	111, 112, 301, 903
	I-B Inventory and Appraisal of Land, Air, and Water Resources	101, 102, 104, 109, 110, 113
	I-C Conservation and Management of Land, Air, and Water Resources	103, 105, 106, 107, 108
II Environmental Enhancement and Recreation	II-A Management of Wildlife and Fisheries	904
	II-B Outdoor Recreation	902
	II-C Using Plants to Enhance the Environment	905, 906
	II-D Environmental Pollution	214, 901
Research Category (2) COMMERCIAL AGRICULTURE--PRODUCTION, PROCESSING, AND MARKETING		
III Production Capacity and Efficiency of Domestic Plants and Animals	III-A Physical and Economic Aspects of Production Systems	302, 303, 306, 309, 313, 314, 315, 316, 317
	III-B Improvement of Quality and Quantity of Field, Fruit, and Vegetable Crops	304, 305, 307, 308, 402, 405
	III-C Improvement of Quality and Quantity of Domestic Animal Production	310, 311, 312, 409
IV Product Improvement and Marketing	IV-A Analysis of Market Demand and Market Performance	502, 503, 506, 508, 509, 510, 511, 513, 601, 604, 608
	IV-B Product Improvement--Processing, Storage, and Standards	401, 403, 404, 406, 407, 408, 410, 411, 412, 501, 512
V Protection of Plants and Animals	V-A Control of Insects Affecting Plants	201, 204, 207
	V-B Control of Plant Diseases	202, 205, 208
	V-C Protection of Domestic Animals and Wildlife	210, 211, 212, 213
	V-D Control of Weeds and Wildfire	203, 206, 209
Research Category (3) PEOPLE-ORIENTED RESEARCH--CONSUMER, FAMILY, AND COMMUNITY		
VI Family and Consumer Welfare	VI-A Consumer Choice	703, 705, 801, 802, 805, 806
	VI-B Health and Safety	701, 702, 706, 707, 709
	VI-C Food and Nutrition	704, 708
VII Community and Economic Development	VII-A Foreign Economic Development	602, 603
	VII-B Regional and Community Economic Development	507, 803, 804, 807, 907, 908
Research Category (4)		
VIII Disciplinary	VIII-A Disciplinary Research	318, 114

<sup>1/</sup> These RPA's are described in detail in United States Department of Agriculture Manual of Classification of Agricultural and Forestry Research (CRIS) Washington, D.C., June 1970. This is necessary for Federal reporting purposes. Thus, the research activities of the University are not necessarily defined by or restricted to the specific definitions contained in the descriptions of RPA's.

DIVISION OF AGRICULTURAL SCIENCE  
SUMMARY OF EXPENDITURES BY FUND SOURCE  
FISCAL YEAR 1978-79

	Vice-President Agricultural Sciences	UC Berkeley	UC Davis	Veterinary Medicine Davis	UC Riverside	Total
State Appropriations	\$2,918,169	\$ 7,172,740	\$18,687,007	\$ 872,690	\$ 9,994,595	\$39,645,201
State of California (other)	2,444	336,896	1,949,617	97,820	1,450,181	3,836,958
Federal Appropriations:						
Title V Rural Development		17,853	20,492			38,345
Match	17,007	531,350	977,928	129,071	474,446	2,129,802
Regional Research Fund	12,435	235,261	445,952	32,722	211,030	937,400
McIntire-Stennis		287,687			3,828	291,515
Smith-Lever Sec. 3(c)						
Smith-Lever Sec. 3(d) and Other Federal Appropriations		13,366	2,000	18,428	8,306	42,100
EFNEP						
Urban Garden						
Total Federal Appropriations	<u>29,442</u>	<u>1,085,517</u>	<u>1,446,372</u>	<u>180,221</u>	<u>697,610</u>	<u>3,439,162</u>
U. S. Government						
National Science Foundation		420,049	1,618,548	86,316	616,325	2,741,238
US Department of Agriculture	300,684	644,403	773,752	181,376	431,674	2,331,889
US Department of Commerce		3,678	228,020		13,016	244,714
US Department of the Interior		26,505	120,449		25,160	172,114
Environmental Protection Agency		208,023	123,303		199,499	530,825
Agency for International Development		124,619	2,621		154,081	281,321
National Aeronautics and Space Administration		61,923	74,941			136,864
Health, Education, and Welfare		49,655	328,788	6,730	30,543	415,716
Public Health		1,413,088	1,857,027	38,867	787,921	4,096,903
Energy Research and Development Administration		3,138	256,438		72,240	331,816
US Air Force			19,862			19,862
US Army		31,422	12,249		20,376	64,047
Labor			14,302			14,802
Other Federal Agencies		88,246	32,842		7,436	128,524
Total Government Agencies	<u>300,684</u>	<u>3,074,749</u>	<u>5,463,642</u>	<u>313,289</u>	<u>2,358,271</u>	<u>11,510,635</u>
Local Government Agencies		24,694	97,544	1,622	31,309	155,169
Endowments	195,666	99,245	464,599	1,947	241,114	1,002,571
Gifts and Private Grants	27,152	535,140	2,104,639	117,169	812,736	3,596,836
Sales and Services			84,937	28,992	81,302	195,231
Student Fees		1,599	120,224	1,408	4,162	127,393
Farming Income						--
Other Sources	18,634	213,876	39,254	103	2,190	274,057
County Funds						--
Total Expenditures	<u>\$3,492,191</u>	<u>\$12,544,456</u>	<u>\$30,457,835*</u>	<u>\$1,615,261</u>	<u>\$15,673,470</u>	<u>\$63,783,213</u>

\*Does not include \$1,615,261 for the School of Veterinary Medicine.

cc: Members of the Legislature  
Office of the Governor  
Office of the Lieutenant Governor  
State Controller  
Legislative Analyst  
Director of Finance  
Assembly Office of Research  
Senate Office of Research  
Assembly Majority/Minority Consultants  
Senate Majority/Minority Consultants  
Capitol Press Corps