

University of California, Davis

It Has Not Identified Future Financing for the
Strawberry Breeding Program nor Collected All
Available Revenues

Report 2014-121

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June 9, 2015

2014-121

The Governor of California
President pro Tempore of the Senate
Speaker of the Assembly
State Capitol
Sacramento, California 95814

Dear Governor and Legislative Leaders:

As requested by the Joint Legislative Audit Committee, the California State Auditor presents this audit report concerning the University of California, Davis (UC Davis). This report concludes that UC Davis has not identified how it will continue to fund the Strawberry Breeding Program (strawberry program), which lost over half of its funding in fiscal year 2013–14. Such a drop in funding places the viability of the strawberry program in jeopardy because the existing funding mechanisms for the strawberry program did not adequately cover this recent loss. For example, under the current process for distributing patent income, most of the patent income the strawberry program generates does not come back to the strawberry program. In fiscal year 2010–11, the strawberry program's patents generated roughly \$7 million, but UC Davis ultimately distributed only \$556,848 back to the strawberry program. We believe that UC Davis could address the strawberry program's recent loss of funding by increasing this allocation as necessary to adequately fund the program. Furthermore, UC Davis' royalty rates remain lower than those charged by other universities; therefore, we recommended that it reassess the appropriateness of the current royalty rates charged to licensees and consider adjusting them.

In addition, UC Davis does not always collect all revenues that are available to the strawberry program. For example, UC Davis did not collect \$157,000 in late fees from licensees that were late in making their royalty payments during fiscal years 2010–11 through 2012–13. By choosing not to pursue collecting late payment fees, UC Davis is foregoing opportunities to offset some of the program's recent loss of funding. Moreover, we identified past discounts totaling roughly \$245,000 that UC Davis provided to licensees, around the time the Non-California Discount Revenue Program's (discount program) agreements ended, without receiving any commensurate benefit. UC Davis may have been able to collect additional revenue during that time; however, it set up the agreements that governed the discount program in a way that prevented it from doing so. Finally, UC Davis may be missing out on royalties it is owed because it lacks an adequate process for ensuring that licensees are accurately reporting their sales.

Respectfully submitted,



ELAINE M. HOWLE, CPA
State Auditor

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Contents

Summary	1
Introduction	5
Audit Results	
The University of California, Davis Has Not Determined How It Will Address the Strawberry Breeding Program's Recent Loss of Funding	19
UC Davis Missed Opportunities to Collect All Strawberry Program Revenues	27
Recommendations	30
Appendix	
The Financial Data the University of California, Davis Provided to the Legislature for the Strawberry Breeding Program Contained Errors	33
Response to the Audit	
University of California, Davis	37
California State Auditor's Comments on the Response From the University of California, Davis	43

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Summary

Results in Brief

The Strawberry Breeding Program (strawberry program) of the University of California (university) has developed and patented new varieties of strawberry plants since the 1930s and the program has been located at the University of California, Davis (UC Davis) since 1952. From fiscal years 2010–11 through 2012–13, the strawberry program generated roughly \$21.6 million in total patent income for the university, which accounted for roughly 89 percent of the patent income that UC Davis earned from its plant patents during that period. Patent income includes the royalties that the university charges its licensees for the sales of patented varieties and the fees that it collects for issuing its licensing agreements. For many years the California Strawberry Commission (commission)—a state government agency that represents an industry of 600 strawberry growers, shippers, and processors—funded a portion of the strawberry program through annual research agreements with the university. In exchange for this funding, the strawberry program’s two former breeders, who conducted the research, agreed to share their research findings with the strawberry industry. In addition, the former breeders and UC Davis agreed to reduce the royalty fees that licensees paid for strawberry varieties sold within California, as part of the university’s research agreement with the commission. UC Davis also negotiated a separate type of research agreement with licensees that facilitated a similar discount, in which licensees provided a significant amount of funding to the strawberry program in exchange for reduced royalty fees for strawberry varieties sold outside of California, called the Non-California Discount Revenue Program (discount program). Both of these discounts required the ongoing consent of the former breeders; however, in August 2012, the two breeders withdrew their consent to those discounts and UC Davis subsequently discontinued those agreements.

The discontinuation of these research agreements in fiscal year 2012–13 caused a significant drop in the strawberry program’s funding in fiscal year 2013–14, when it received only \$910,000, a 56 percent decrease in funding from the prior year.¹ Despite this significant reduction in funding, the strawberry program’s expenses were almost \$1.6 million. As a result, the strawberry program used roughly 37 percent of its \$1.8 million in reserves to cover this funding shortage. Although UC Davis has publicly stated that it has an unwavering commitment to continue its strawberry program, it has not developed a balanced budget that addresses how it will fund this program in the future.

¹ This calculation excludes the impact of funding that UC Davis provides to pay for the indirect costs of the strawberry program. See footnote † in Table A on page 34 for further information about UC Davis’ method for funding the program’s indirect costs.

Audit Highlights . . .

Our review of the University of California, Davis’ (UC Davis) Strawberry Breeding Program (strawberry program) highlighted the following:

- » *The discontinuation of research agreements significantly contributed to the strawberry program’s 56 percent drop in funding in fiscal year 2013–14.*
- *The University of California’s (university) existing funding mechanisms for the strawberry program did not adequately cover the funding loss—it used roughly 37 percent of its \$1.8 million in reserves to cover expenses in fiscal year 2013–14.*
- *UC Davis has not developed a balanced budget to address how it will fund the strawberry program in the future.*
- » *UC Davis does not always collect all revenues that are available to the strawberry program.*
- *It did not collect \$157,000 in late fees from licensees that were late in making royalty payments in fiscal years 2010–11 through 2012–13.*
- *It provided discounts totaling \$245,000 to licensees, around the time the non-California Discount Revenue Program’s agreements ended, without receiving any commensurate benefit.*
- *UC Davis lacks an adequate process for ensuring licensees are accurately reporting their sales and thus, cannot demonstrate that it is collecting all the royalty payments it is owed.*

Such a drop in funding places the viability of the strawberry program in jeopardy because the university's existing funding mechanisms for the strawberry program did not adequately cover this recent loss. For example, under the university's patent income distribution process, most of the patent income the strawberry program generates does not come back to the strawberry program. In fiscal year 2010–11, the strawberry program generated roughly \$7 million in strawberry patent income, but the university used \$1.7 million of this income to pay various expenses and \$2.2 million to pay the two breeders, before distributing the remaining \$3.1 million to UC Davis, which ultimately distributed only \$556,848 back to the strawberry program. Because UC Davis only allocates a small portion of net strawberry patent income back to the program at the end of the distribution process, we believe that it could address the strawberry program's recent loss of funding by increasing this allocation as necessary to adequately fund the program. Furthermore, despite the elimination of the discounts to the royalty rates, UC Davis' undiscounted royalty rates remain lower than those charged by other universities; therefore, we believe UC Davis should reassess the appropriateness of the current royalty rates charged to licensees and consider increasing those rates.

Because the strawberry program has recently lost a significant amount of funding and its financial reserves have declined, it is imperative that the UC Davis Department of Plant Sciences (department), which is responsible for the day-to-day management of the strawberry program, prepare a budget that details how the program will be funded. However, the department has not consistently developed budgets for the strawberry program in the past and it has not yet developed a balanced budget that shows how the program will be funded in the future. In addition, when the department did develop budgets for the strawberry program, it did not use them to compare actual expenses to those that were budgeted—an important practice that would enable the department to ensure that the strawberry program operates in an efficient and cost-effective manner. As a result, we do not believe that UC Davis is adequately monitoring the financial operations of the strawberry program, particularly given the program's declining fund balance.

In addition, UC Davis does not always collect all revenues that are available to the strawberry program. For example, UC Davis did not collect \$157,000 in late fees from licensees that were late in making their royalty payments during fiscal years 2010–11 through 2012–13. The business development and intellectual property manager of UC Davis' Innovation Access unit, which manages the strawberry program's licensing agreements, explained that it is not UC Davis' practice to collect late fees from licensees that are making a good faith effort to make their payments. However, by choosing not to pursue collecting late payment fees, UC Davis is missing opportunities to collect revenues that could be used to support the strawberry program.

Moreover, we identified past discounts totaling roughly \$245,000 that UC Davis provided to licensees, around the time the discount program's agreements ended, without receiving any commensurate benefit. UC Davis may have been able to collect additional revenue around the time the discount program ended; however, it set up the agreements that governed the discount program in a way that prevented it from doing so. After considering several factors, and the advice of its counsel, UC Davis decided it would not attempt to collect those contributions. Had the discount program's agreements anticipated the issues associated with its termination and contained language to address those issues, UC Davis would likely have been able to avoid the resulting lost revenue.

Finally, UC Davis' may also be missing out on royalties because it lacks an adequate process for ensuring that master licensees and licensed nurseries are accurately reporting their sales. Specifically, UC Davis has never conducted an audit of master licensees and licensed nurseries to ensure that they accurately report their sales of licensed strawberry varieties. As a result, UC Davis' cannot be certain that it is collecting all of the royalties it is owed under the licensing agreements.

Recommendations

UC Davis should ensure that the strawberry program is adequately funded. To address the strawberry program's recent loss of funding, the university should consider allocating more of the strawberry program's patent income back to the program itself. In addition, UC Davis should regularly reassess the appropriateness of the strawberry program's royalty rates charged to licensees and adjust the rates as needed to support the program.

The department should prepare a balanced budget for each fiscal year that details how it will fund the strawberry program. In addition, it should begin comparing actual income and expenses to the budget periodically to ensure that the program is operating in a cost-efficient manner and is adequately funded.

UC Davis should collect all late fees that its licensees owe.

If UC Davis considers providing future discounts on royalty rates, it should structure the agreements to ensure that it receives a commensurate benefit during the entire time that licensees receive discounts.

UC Davis should develop a risk-based audit plan to begin periodically reviewing the financial records of licensees to ensure that they are accurately reporting all of their sales of licensed

strawberry varieties and paying the university all the royalties it is entitled to. To encourage compliance, UC Davis should notify all licensees that it will begin auditing the sales records of selected licensees.

Agency Comments

UC Davis generally agreed with our recommendations and plans to take various actions to implement them. However, it disagreed with certain aspects. For example, UC Davis did not fully commit to collecting all late fees from licensees and notifying all licensees that it will conduct audits.

Introduction

Background

The University of California, Davis (UC Davis) is one of 10 campuses within the University of California (university) system. According to its website, UC Davis' mandate as a land-grant college is to provide quality higher education and address the needs of society, in part, through the education of plant breeders and the development and release of improved plants necessary for continued agricultural productivity. Accordingly, the university has been breeding strawberries since the 1930s through its Strawberry Breeding Program (strawberry program) and the program has been located at UC Davis since 1952. The strawberry program's goal is to develop new, commercially viable varieties of strawberry plants that are of higher product quality, are less vulnerable to pests and disease, and can be grown more efficiently. As a result of this program, the university currently holds U.S. patents on more than 30 strawberry varieties, also known as *cultivars*. UC Davis, on the university's behalf, licenses the right to reproduce and sell these cultivars in California and worldwide. Until recently, UC Davis employed two plant breeders who created several strawberry varieties using a collection of germplasm, strawberry plant materials developed by the strawberry program. The two breeders retired from UC Davis in November 2014 to carry on their work privately. UC Davis subsequently hired a new strawberry breeder in February 2015 to continue the strawberry program's research. The text box provides definitions of key terms used in this report.

Strawberry Breeding Program Key Terminology

Cultivar: A variety of plant that has been created or selected intentionally and maintained through cultivation. Specific to the Strawberry Breeding Program (strawberry program), this term is reserved for a genotype that undergoes the process for commercialization and patenting.

Genotype: The genetic makeup, as distinguished from the physical appearance, of an organism. In the case of strawberries, the genotype refers to the genetic makeup of a plant that is fixed after crossbreeding.

Germplasm: Any living plant tissue (such as a stem, leaf, pollen, or a few cells) that is built upon, improved on, and modified over many years to create new strawberry varieties.

Licensed Nursery: A nursery that is licensed by the University of California (university) to propagate and sell strawberry cultivars to growers in the United States, Canada, or worldwide.

Master Licensee: An international company licensed by the university and granted the exclusive right to sub-license nurseries the right to propagate and sell cultivars in specific countries.

Sources: *The American Heritage Science Dictionary*, interviews with university staff, University of California, Davis' (UC Davis) website, *California Strawberry Commission v. The Regents of the University of California* litigation, and UC Davis Internal Audit Services' report on the strawberry program.

The California Strawberry Commission (commission) is a state government agency that represents an industry of 600 strawberry growers, shippers, and processors. The commission's focus is on food safety education as well as production and nutrition research, trade relations, public policy, and marketing communications. Since 1991 the commission provided the strawberry program with funding totaling over \$8.2 million through annual research agreements with the university, under the direction of UC Davis' two former strawberry breeders. The former breeders withdrew their consent to the agreement in August 2012 and UC Davis subsequently notified the commission in November 2012 that it would not be renewing the commission's research agreement.

In late 2013 the commission filed a lawsuit against the university alleging, among other things, that the university had breached the research agreement. The commission also claimed that it had rights to the strawberry germplasm. Neither of the former breeders was a party to the litigation. The university later filed a cross-complaint asking the court to declare that it, and not the commission, held the intellectual and tangible property rights to the germplasm. In February 2015 the parties settled their lawsuits and entered into a written settlement agreement to resolve the litigation without trial. The parties agreed that the commission has no claims to the strawberry germplasm and that the university is the owner. The settlement agreement also created a new strawberry advisory committee to provide input on the strawberry program, which will continue at UC Davis for at least the next five years. The advisory committee will consist of nine appointed members equally representing UC Davis, the commission, and other stakeholders.

Oversight of the Strawberry Program

The strawberry program is subject to systemwide university policies and UC Davis' campus policies, which generally reflect the university's policies. As shown in Figure 1 on pages 8 and 9, several entities oversee the strawberry program's financial operations that relate to patenting, licensing, distribution of patent income, management of research agreements, and day-to-day operations. Although the strawberry program's former breeders were primarily responsible for the financial health and management of the strawberry program, various entities within the university oversee the strawberry program. The strawberry program is housed in the UC Davis Department of Plant Sciences (department) within the College of Agricultural and Environmental Sciences (agricultural college). In addition, UC Davis' Innovation Access unit is responsible for negotiating licensing agreements and royalty rates with the licensed nurseries and master licensees. In the past, the commission provided some level of oversight over the funding provided through research agreements. For example, the commission was responsible for approving the invoices that the strawberry program submitted for reimbursement under the commission's former research agreement. However, it is not clear as of this writing whether the university and the commission will enter into any future agreements.

The University's Plant Patent Process

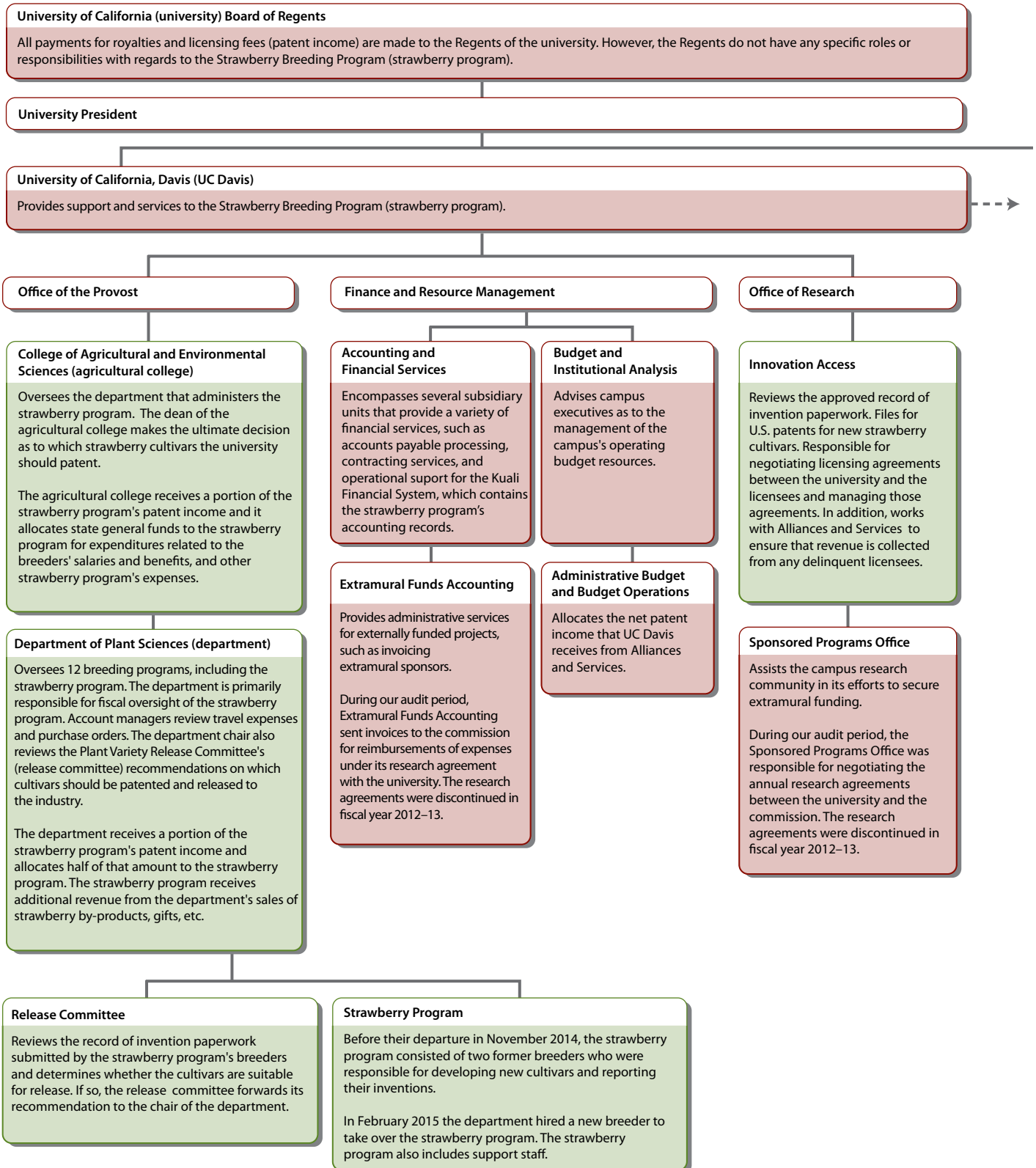
The term *intellectual property* describes products of the mind, such as inventions and other creations. There are four primary types of intellectual property: copyrights, trademarks, patents, and trade secrets. As a type of personal property, intellectual property is protected by law.

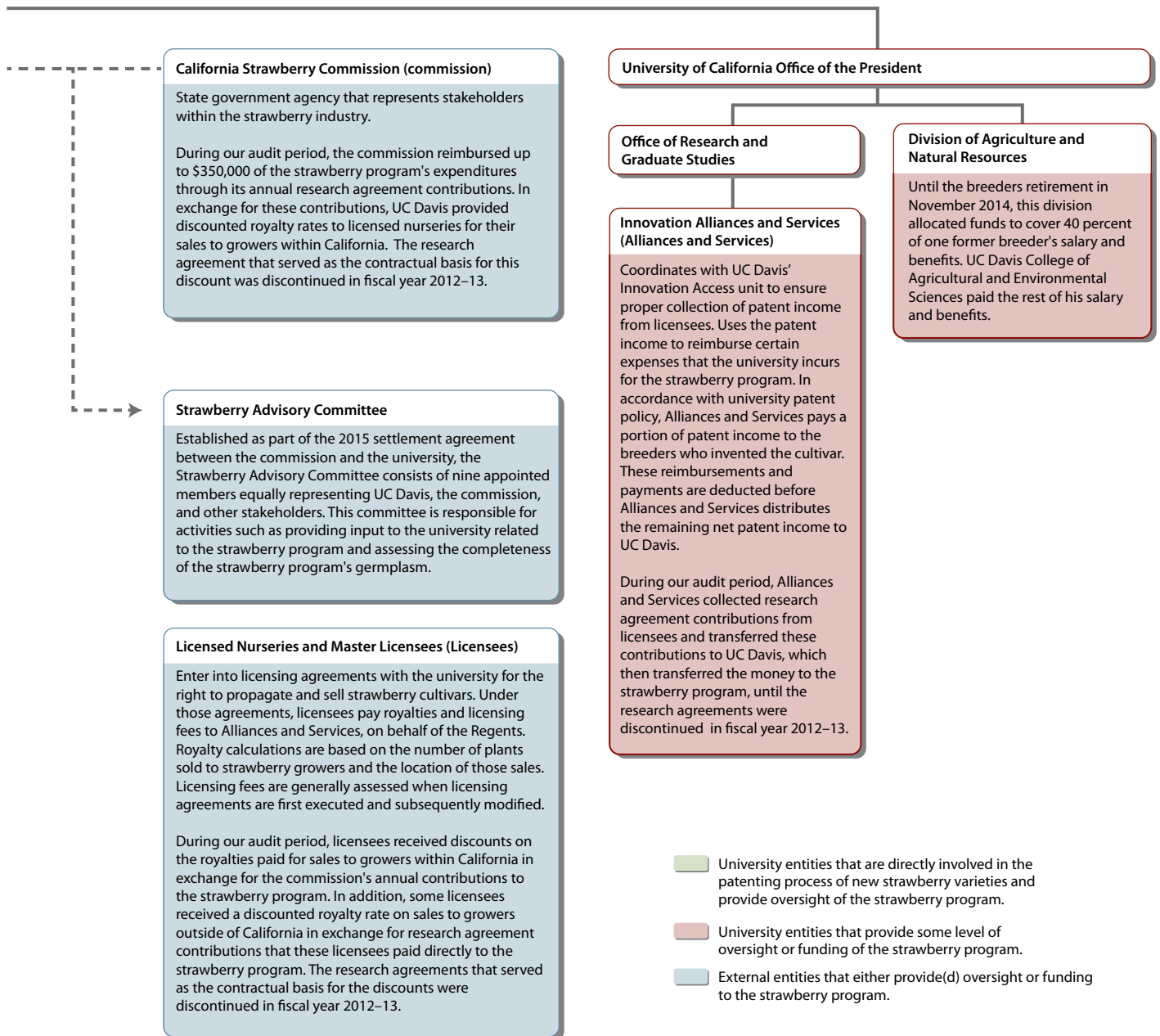
Newly developed university strawberry cultivars are protected from unauthorized use in the United States under plant patents granted by the federal Patent and Trademark Office. A plant patent may be granted to anyone who invents a distinct and new variety of plant and reproduces it asexually—by a means other than from a seed. A plant patent lasts for 20 years from the date on which the owner files an application. When it expires, the plant becomes available to the public for free use.

Although the breeders invented the strawberry cultivars, university policy requires all university employees to transfer all rights to potentially patentable inventions to the university in accordance with their employment agreements. Under this policy, the university owns the plant patents. Thus, it has the legal right to preclude others from selling or using the patented plant, or reproducing it asexually. However, U.S. plant patents only provide protection within the United States. Some intellectual property protections are available outside the United States and the university uses these to protect the strawberry cultivars internationally.

Before the university patents a cultivar, the cultivar must first go through the university's review process, as shown in Figure 2 on page 10. Specifically, the breeder recommends the cultivar to the Plant Variety Release Committee (release committee) as potentially patentable by filing a *record of invention*, which provides the university with a detailed description of the new variety, among other pieces of information. The release committee assesses whether the cultivar is ready for commercial release—that is, if it will add value to the market—and makes its recommendation for release to the chair of the department and then to the dean of the agricultural college, who makes the final decision as to whether to release the new cultivar. If the dean agrees to release the cultivar, then the Innovation Access unit files an application for a U.S. plant patent and the university may enter into licensing agreements with licensed nurseries and master licensees.

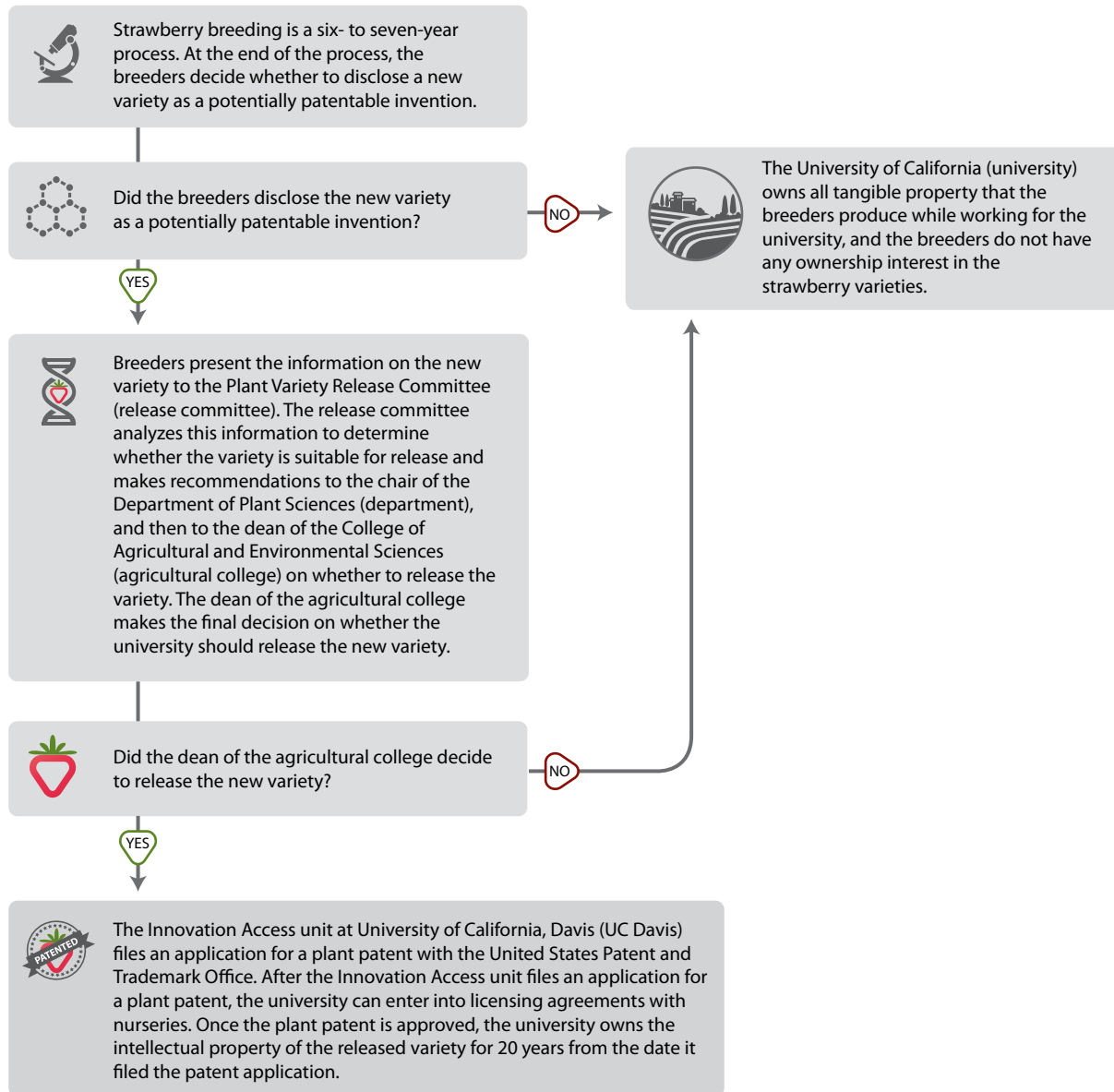
Figure 1
Roles and Responsibilities of the Various Entities Involved in the Strawberry Breeding Program





Sources: University and UC Davis websites, various documents obtained from the university, and interviews with university staff.

Figure 2
The Strawberry Breeding Program's Patent Process



Sources: University patent policy, documents obtained from UC Davis, interviews with key UC Davis staff, and information from the United States Patent and Trademark Office website.

The Strawberry Program's Funding Sources

The strawberry program receives funding from various sources, including the university's allocation of patent income and the discretionary internal allocations of the agricultural college and the department, which draw their funding from state general funds, donor gifts, workshop income, and education and research funds.

UC Davis enters into licensing agreements, on behalf of the university, with licensed nurseries, granting them the right to grow the strawberry plants of university-patented varieties and the right to sell those plants to fruit growers. Master licensees sublicense those rights to nurseries internationally, in the regions their licensing agreements specify. Patent income consists of the fees that both types of licensees pay when issuing their agreements and the royalties that they owe for each batch of 1,000 plants sold to strawberry growers. These royalties are assessed at varying rates depending on whether the strawberries are sold inside California, elsewhere in the United States or in Canada, or internationally. Although licensed nurseries can sell to international growers, the majority of international sales are conducted by the sublicensed nurseries of master licensees. In the case of these international sales, UC Davis interacts only with the master licensee, which collects royalties from the nurseries that it sublicenses.

The university's Office of the President's Innovation Alliances and Services (Alliances and Services) is responsible for invoicing licensees, collecting royalties, producing relevant financial reports, and distributing patent income to the breeders and UC Davis. Semiannually, Alliances and Services sends the licensees blank reports with their respective royalty rates, which are dictated by UC Davis' Innovation Access unit. The licensees self-report by entering their latest sales figures in the reports and using the provided royalty rates to calculate payments due to the university. Alliances and Services collects these payments and then annually distributes a portion of the payments back to the campus, as part of its distribution of net patent income. UC Davis then follows its own process for allocating a portion of the patent income to the strawberry program. From fiscal years 2010-11 through 2012-13, the strawberry program generated roughly \$21.6 million in total patent income for the university, which accounted for roughly 89 percent of the patent income that UC Davis earned from all of its plant patents during that period.

Previously, the strawberry program received roughly half of its funding from the research agreements that UC Davis negotiated with the commission and the licensees. The former breeders and UC Davis agreed to reduce the royalty rates charged to licensees for their sales, in exchange for contributions that were paid directly to the strawberry program. By agreeing to this reduction in income, the former breeders were able to ensure that more revenue would go directly to the strawberry program than would have otherwise been received through the university's usual process for distributing patent income. These discounts required the ongoing consent of the former breeders, but the former breeders withdrew their consent in August 2012. In response, UC Davis notified the commission

that it would not renew the commission's research agreement, and UC Davis terminated the research agreements with participating licensees in fiscal year 2012–13.

Under the university's former research agreement with the commission, the commission agreed to reimburse the university for up to \$350,000 annually for research-related expenses of the strawberry program. The performance period for this annual research agreement was from February through January of the following year. During this period, UC Davis sent the commission invoices summarizing the strawberry program's expenses. The commission reimbursed UC Davis for these expenses in exchange for the timely transfer of research findings to the strawberry industry and a discounted royalty rate of \$2 per 1,000 plants sold in California by licensed nurseries. After the commission paid its last contribution in April 2013, the university eliminated its associated discount in September 2013. According to the strawberry program's new breeder, the university and the commission have not yet decided if they will enter into another research agreement in the future.

UC Davis established a similar discount, now also discontinued, using a different research agreement, which it referred to as the Non-California Discount Revenue Program (discount program). In exchange for a discounted royalty rate of \$1.50 to \$2.40 per 1,000 plants sold outside of California, the licensed nurseries and master licensees agreed to provide research funding directly to the strawberry program at the rate of \$1 per 1,000 plants sold. To facilitate this, UC Davis, on behalf of the university, entered into separate research agreements with the licensed nurseries and master licensees that sold the university's patented strawberry varieties. Licensed nurseries, which sold mostly to growers in the United States and Canada, paid their research contributions based on sales from July to June of the previous year, while master licensees paid their contributions based on sales from January to December of an earlier calendar year. The discount program provided the strawberry program with roughly \$600,000 in contributions annually. After the strawberry program received its last contribution for this discount program in December 2012, UC Davis eliminated its associated discount in September 2013. UC Davis has not determined whether it will establish a similar discount program in the future. Table A beginning on page 34 in the Appendix shows the amount of funding that the strawberry program received from the various sources described in this section in fiscal years 2011–12 and 2012–13.

Conflict-of-Interest Policies and Laws

The university has several policies related to conflicts of interest. For example, the university has policies that specifically address the various aspects of conflicts of interest in research. In addition to university policies, university employees are subject to various laws relating to conflicts of interest.

The central conflict-of-interest law governing state officers and employees in California is the Political Reform Act of 1974 (act). The act contains two separate but related obligations generally applicable to university employees and their personal financial interests. First, it requires designated university employees to disclose certain financial interests by filing a statement of economic interests. Second, it generally prohibits university employees from making, or participating in making, decisions in which they have a financial conflict of interest. An employee who has a conflict of interest must disqualify himself or herself from making, influencing, or participating in such a decision. To ensure that the disclosure requirements of the act are accomplished, the university must maintain a list of specified positions that, if held, require the designated employee to file statements disclosing certain financial interests. However, UC Davis did not consider the former breeders' work to trigger any filing requirements; therefore, the former breeders would not have had reason to believe they were required to disclose their financial interests.

Under the act, certain decisions made by individuals who have teaching or research responsibilities at an institution of higher education are exempt from both the disclosure and disqualification requirements. However, that exemption does not apply if the research project in question is funded or supported, in whole or part, with funds earmarked by a donor for a specific project or specific researcher from a nongovernmental entity. A university researcher who has such a financial interest is not necessarily prohibited from participating in making a decision to undertake the research even where a financial conflict of interest may be present, as long as an independent university committee substantively reviews the decision. Nevertheless, failing to timely disclose and report the financial interest is a violation of the act and can lead to fines.

Under the licensing agreements, nurseries and master licensees could participate in the former discount program if they made annual contributions to the strawberry program. Under separate and related agreements, those nurseries and master licensees became sponsors of strawberry cultivar research. Thus, the strawberry program received funding earmarked for its specific purposes from private, nongovernmental entities. Although UC Davis

deemed these funds royalties and therefore concluded that the breeders were not required to disclose their financial interests, we disagree. We believe that because the strawberry program was receiving nongovernmental funding in the form of contributions made by licensees, the act required the researchers with principal responsibility for the strawberry program to file statements of economic interests, which would have enabled UC Davis and the public to assess whether the breeders were involved in making any decisions about the strawberry program that constituted a conflict of interest.

Scope and Methodology

The Joint Legislative Audit Committee (audit committee) directed the California State Auditor to review the strawberry program. We list the objectives that the audit committee approved and the methods we used to address them in Table 1.

Table 1
Audit Objectives and the Methods Used to Address Them

AUDIT OBJECTIVE	METHOD
<p>1 Review and evaluate the laws, regulations, contract provisions, and policies and procedures significant to the audit objectives.</p>	<ul style="list-style-type: none"> • Reviewed relevant laws, regulations, contract provisions, and policies and procedures pertaining to the University of California, Davis (UC Davis) Strawberry Breeding Program (strawberry program). • Interviewed key UC Davis officials.
<p>2 Determine which entities are involved in overseeing the strawberry program's financial operations and perform the following:</p> <p>a. Identify the roles and responsibilities of each oversight entity including, but not limited to the University of California Regents, UC Davis' College of Agricultural and Environmental Sciences (agricultural college), and the agricultural college's strawberry program.</p> <p>b. Determine how UC Davis and the agricultural college monitor the strawberry program's financial operations to ensure that it complies with relevant laws, rules, and regulations.</p> <p>c. To the extent possible, determine how many audits of the strawberry program have been conducted since 1955. For a selection of audits completed in the past five years, assess the following:</p> <p>i. Whether each audit was reviewed and approved by an authorized person or entity.</p> <p>ii. Whether each audit examined funding sources and uses and funds expended for nonbreeding program purposes.</p> <p>iii. Whether each audit examined payments to strawberry breeders and other UC Davis personnel.</p>	<ul style="list-style-type: none"> • Interviewed key staff and reviewed University of California (university) policies and procedures to obtain an understanding of each entity's oversight role and processes. • The strawberry program's licensing and research agreements were established between the university and its licensees and sponsors. However, UC Davis is responsible for establishing the royalty rates and negotiating and managing the agreements. Therefore, we refer to UC Davis instead of the university when applicable throughout this report. • Interviewed key staff and reviewed university documents to understand how UC Davis and the agricultural college monitor the strawberry program's financial operations to ensure compliance with relevant laws, regulations, and university policies and procedures. • Reviewed and tested the business practices of the Department of Plant Sciences (department) as part of our testing for audit objectives 3 and 4. • Interviewed key staff and reviewed university documents related to past reviews of the strawberry program. There have been no audits of the strawberry program from 1955 through 2013, other than a May 2012 audit of the department. However, that audit focused on those matters that UC Davis' Internal Audit Services considered higher risks for the department and did not examine the strawberry program in detail. • In 2014 UC Davis' Internal Audit Services was conducting a review of the strawberry program at the request of campus counsel in preparation of litigation. Because the audit report was incomplete, the audit team did not review the draft document during fieldwork. In April 2015 UC Davis notified us that its audit report was finished. The audit team then reviewed the final audit report for issues relevant to the scope of our audit. No significant issues were identified about which we were not already aware.

AUDIT OBJECTIVE	METHOD
<p>3 Review and assess the adequacy of financial policies and procedures the strawberry program followed for the most recent three-year period. In addition, perform the following:</p> <ul style="list-style-type: none"> a. Determine whether the strawberry program's policies and practices ensure that it collects all revenues and accurately records and reports them. b. Determine how much the strawberry program budgeted for salary and travel expenditures for the most recent three-year period and whether those expenditures were reasonable. c. Determine whether the strawberry program has maximized its cost-saving opportunities. 	<ul style="list-style-type: none"> • Interviewed key staff and reviewed university documents to understand the university's process for collecting, recording, and reporting patent income for the strawberry program. • Reviewed the university's patent policy and UC Davis' policy on distributing patent income to obtain an understanding of the amount of strawberry patent income the university received in relation to the amount it distributed to the strawberry program. • Reviewed a selection of payments received from licensees and the California Strawberry Commission to ensure that the university collected and accurately recorded and reported these payments. In addition, we determined whether the university distributed these payments in accordance with university policy. • Reviewed the department's general ledgers for fiscal years 2011–12 through 2012–13 and reconciled them with UC Davis' April 2014 report to the Legislature regarding the strawberry program's fiscal health. • Reviewed the strawberry program's budgets for fiscal years 2011–12 through 2014–15. • Reviewed a selection of salary expenditures for fiscal years 2011–12 through 2013–14 to ensure that the university paid wages within the appropriate salary range. We did not note any exceptions. • Reviewed a judgmentally selected set of program travel expenses for fiscal years 2011–12 through 2013–14 to ensure that they were reasonable and appropriate. We did not note any exceptions. • Reviewed a judgmentally selected set of strawberry program supply and contracted labor expenses for fiscal years 2011–12 through 2013–14 to ensure they were reasonable and appropriate. As part of our selection process we reviewed department general ledgers for fiscal years 2011–12 through 2013–14 to identify any patterns of potential contract splitting and tested a selection of labor contracts to ensure that the university contracted in accordance with university policy. We did not note any exceptions. • Analyzed the strawberry program's use of its travel booking system to determine if strawberry program staff were maximizing savings for travel. We determined that department staff did not use the university's travel booking system because the university's policy does not explicitly require them to do so. As a result, strawberry program staff may not be maximizing cost savings related to travel. However, as shown in Table A of the Appendix, the strawberry program's travel expenses only accounted for \$30,140, or 1.3 percent, of the strawberry program's expenses in fiscal year 2012–13.
<p>4 Determine whether expenditures of funds received from the California Strawberry Commission (commission) by UC Davis, the agricultural college, and the strawberry program are appropriate, and whether those entities are meeting all their responsibilities in the use of those funds.</p>	<ul style="list-style-type: none"> • Reviewed the university's contracts with the commission to obtain an understanding of any restrictions on the commission's reimbursement of strawberry program expenses. • Reviewed a judgmentally selected set of strawberry program expenses for fiscal years 2011–12 to 2012–13 that were reimbursed by the commission to ensure that the expenses were in compliance with the terms of the contract. We did not identify any instances in which the strawberry program used this funding inappropriately. • Reviewed documents obtained from the department to determine whether the strawberry program met its contractual responsibilities. We found evidence that the former breeders shared the results of their research with the commission and strawberry industry. We also confirmed that the commission approved the strawberry program's expenditures that were invoiced during our audit period. We determined that the strawberry program met its responsibilities in the use of those funds.

AUDIT OBJECTIVE	METHOD
<p>5 Review and assess UC Davis' intellectual property policies and procedures that apply to the strawberry program, including the following:</p> <p>a. Determine whether the plants, or cultivars, the strawberry program develops are protected as intellectual property and what those protections are.</p> <p>b. Determine who owns the plants, or cultivars, the strawberry program develops and what ownership rights the strawberry program staff may have to the plants, or cultivars, they develop.</p>	<ul style="list-style-type: none"> • Reviewed federal patent law and university policies regarding intellectual property and identified specific protections granted to intellectual property. • Interviewed key staff to obtain the university's perspective on who maintains ownership of the strawberry program's germplasm. • Interviewed key staff to understand what safeguards UC Davis has in place to protect the strawberry program's germplasm. We learned that UC Davis physically stores the complete germplasm collections within locked freezers at two undisclosed locations. Access to the germplasm is limited to only a few individuals, such as the strawberry program's breeder and the university's head of greenhouses. • Interviewed key staff and reviewed university documents to obtain an understanding of who owns the germplasm. • Determined that according to patent law and university policy, the university owns all patented strawberry cultivars, not the university employees. To further protect its interest, the university filed a provisional plant patent for the majority of the genotypes within the strawberry program's germplasm. The patent is pending and the university plans to file a non-provisional patent application prior to June 4, 2015.
<p>6 Determine whether the strawberry program is subject to a conflict-of-interest law or policy and whether conflicts have been identified and addressed.</p>	<ul style="list-style-type: none"> • Interviewed key staff and reviewed university policies to obtain an understanding of which strawberry program staff are required to fill out an annual conflict-of-interest form. Our review found that UC Davis did not believe that the former breeders were required to file a conflict-of-interest form and it did not require any other strawberry program staff to file a conflict-of-interest form. • Reviewed the job descriptions for the strawberry breeding program employees to analyze whether staff responsibilities and duties may create a conflict of interest. • Obtained a list of strawberry varieties submitted to the university for patent consideration. We assessed whether the frequency of submissions by the former breeders declined after they informally announced plans to retire and start a private company. During this time, our review showed that the former breeders continued to submit strawberry varieties for the university's patent consideration. We did not note any exceptions related to the schedule of the former breeders' submissions.
<p>7 Review and assess any other issues that are significant to the policies and procedures of the strawberry program's management and operations.</p>	<ul style="list-style-type: none"> • Interviewed key staff to understand when UC Davis last increased the royalty rates it charges for its patented strawberry varieties. • Reviewed UC Davis' analysis of the strawberry royalty rates it charged and determined whether its assessment was consistent with the strawberry program's goals. • Interviewed representatives from other universities with strawberry breeding programs to gain an understanding of their strawberry licensing royalty rates.

Sources: California State Auditor's analysis of Joint Legislative Audit Committee audit request 2014-121, and information and documentation identified in the table column titled *Method*.

Assessment of Data Reliability

In performing this audit, we relied on various electronic data files extracted from the information systems listed in Table 2. The U.S. Government Accountability Office, whose standards we are statutorily required to follow, requires us to assess the sufficiency and appropriateness of computer-processed information that is used to support findings, conclusions, or recommendations. Table 2 describes the analyses we conducted using data from these information systems, our methodology for testing them, and the limitations we identified in the data. Although we recognize that these limitations may affect the precision of the numbers we present, there is sufficient evidence in total to support our audit findings, conclusions, and recommendations.

Table 2
Methods Used to Assess Data Reliability

INFORMATION SYSTEM	PURPOSE	METHOD AND RESULT	CONCLUSION
<p>University of California, Davis (UC Davis)</p> <p>Davis Financial Information System (DaFIS)</p> <p>Legacy financial system that contains accounting data for the period July 2010 through June 2011</p> <p>UC Davis</p> <p>Kuali Financial System (KFS)</p> <p>Current financial system containing accounting data for the period July 2011 through April 2015</p>	<p>To determine whether a selection of the Strawberry Breeding Program's (strawberry program) travel, supplies, and California Strawberry Commission-reimbursed expenditures were appropriate and reasonable based on university policy and to test internal controls to ensure that all revenue is being collected and allocated as required by contract.</p>	<ul style="list-style-type: none"> We did not perform accuracy and completeness testing of these data for two reasons. First, during our audit period the strawberry program did not have a unique identifier, such as a program code, that could be used to isolate its expenditures and revenues from other programs within the University of California's (university) computer systems. As a result, it is impossible to isolate all of the strawberry program's expenses without manual verification or reliance upon a secondary database. Second, we were unable to compare totals calculated from the Department of Plant Sciences' (department) general ledgers to an audited financial report to determine the completeness of the system because the only available audited financial report for the period under review is generated at the university systemwide level and does not contain department-specific information. To gain some assurance of the completeness of transactions in the data, however, we agreed the payroll expenses recorded in KFS to reports generated from the Payroll and Personnel System (PPS). 	<p>Undetermined reliability for the purpose of this audit.</p> <p>Although this determination may affect the precision of the numbers we present, there is sufficient evidence in total to support our findings, conclusions, and recommendations.</p>
<p>University of California, Office of the President (UCOP)</p> <p>PPS</p> <p>Payroll and human resources data as maintained by the university for the period July 2010 through June 2014</p>	<p>To determine whether breeder and staff salaries and benefits complied with relevant policies and were within acceptable ranges.</p>	<ul style="list-style-type: none"> We did not perform accuracy and completeness testing of the PPS data because this is a paperless system and hard-copy source documentation was not available for review. Alternatively, following U.S. Government Accountability Office (GAO) guidelines, we could have reviewed the adequacy of selected system controls that include general and application controls. We did not perform a review of PPS controls because testing the number and variety of data systems used in this audit would have been cost-prohibitive. To gain some assurance of the completeness of the data, however, we materially reconciled the salary and benefit expenses to those reported in the strawberry program's funding accounts, which are recorded in KFS. 	<p>Undetermined reliability for the purpose of this audit.</p> <p>Although this determination may affect the precision of the numbers we present, there is sufficient evidence in total to support our findings, conclusions, and recommendations.</p>
<p>UC Davis</p> <p>MyTravel System</p> <p>Online travel and entertainment expense reporting system as maintained by UC Davis for the period July 2011 through June 2014</p>	<p>To determine whether travel expenditures complied with relevant policies and document what portion of travel expenses was booked through the university's travel system.</p>	<ul style="list-style-type: none"> We did not perform accuracy and completeness testing of the MyTravel System data because this is a paperless system and hard-copy source documentation was not available for review. Alternatively, following GAO guidelines, we could have reviewed the adequacy of selected system controls that include general and application controls. We did not perform a review of the MyTravel System controls because testing the number and variety of data systems used in this audit would have been cost-prohibitive. To gain some assurance of the completeness of the data, however, we reconciled travel expenses against payments processed through DaFIS and KFS. 	<p>Undetermined reliability for the purpose of this audit.</p> <p>Although this determination may affect the precision of the numbers we present, there is sufficient evidence in total to support our findings, conclusions, and recommendations.</p>

INFORMATION SYSTEM	PURPOSE	METHOD AND RESULT	CONCLUSION
UCOP Patent Tracking System (PTS) Systemwide application for technology transfer activities such as invention disclosure, patent prosecution, and licensing and financial information for the period July 2009 through June 2014	To ensure that all revenue is being collected and to calculate the difference in discounted and nondiscounted royalty rates.	<ul style="list-style-type: none"> • We did not perform accuracy and completeness testing of the PTS data because this system is located in Oakland and the level of resource investment necessary for such a review was not feasible within this audit's budget. We did not perform a review of PTS controls because testing the number and variety of data systems used in this audit would have been cost-prohibitive. • To gain some assurance of the completeness of the data found in the PTS, however, we reviewed documentation demonstrating that UCOP reconciled the PTS report we used in our analysis to University of California, Los Angeles' (UCLA) Financial System General Ledger Applications (FS). 	Undetermined reliability for the purpose of this audit. Although this determination may affect the precision of the numbers we present, there is sufficient evidence in total to support our findings, conclusions, and recommendations.
UCLA FS Official financial book of record for the UCLA campus; UCOP; and University of California, Merced for the period July 2010 through June 2014	To ensure that all revenue is being collected and to calculate the difference in discounted and nondiscounted royalty rates.	<ul style="list-style-type: none"> • We did not perform accuracy and completeness testing of the FS data because the system is located in Los Angeles and the level of resource investment necessary for such a review was not feasible within this audit's budget. • To gain some assurance of the completeness of the data found in the FS general ledger report, however, we reviewed documentation demonstrating that UCOP reconciled the FS general ledger to UCOP's PTS. 	Undetermined reliability for the purpose of this audit. Although this determination may affect the precision of the numbers we present, there is sufficient evidence in total to support our findings, conclusions, and recommendations.

Source: California State Auditor's analysis of various documents; data obtained from the university, UCLA, and UC Davis; and interviews with university officials.

Audit Results

The University of California, Davis Has Not Determined How It Will Address the Strawberry Breeding Program's Recent Loss of Funding

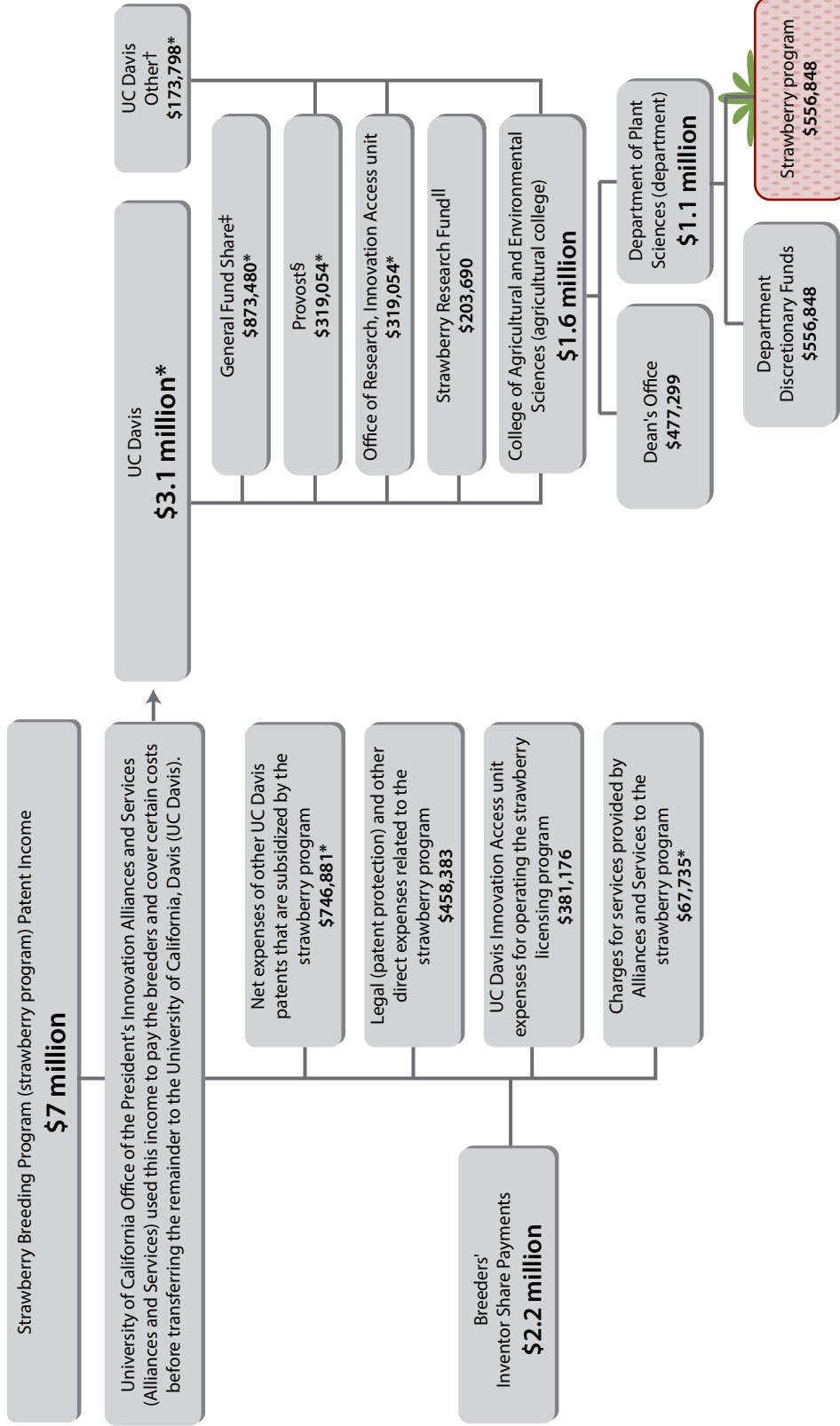
Historically, the Strawberry Breeding Program (strawberry program) has generated millions of dollars in patent income for the University of California, Davis (UC Davis). As described in the Introduction, the strawberry program received an allocation of the patent income it earned and additional funding from its various research agreements. In fiscal year 2011–12, these research agreements provided \$945,000 of funding to the strawberry program. However, as explained in the Introduction, these agreements ended during fiscal year 2012–13. As a result, the strawberry program's funding from these agreements decreased by \$172,000, or 18 percent, in fiscal year 2012–13. The discontinuation of these agreements also significantly contributed to the strawberry program's loss of funding in fiscal year 2013–14, when it received only \$910,000, a 56 percent decrease in funding from the prior year.² Because the strawberry program's fiscal year 2013–14 revenues were significantly less than its direct expenses of almost \$1.6 million, it used roughly 37 percent of its \$1.8 million in reserves to cover this funding shortage. Such a drop in funding places the viability of the strawberry program in jeopardy because the University of California's (university) existing funding mechanisms for the strawberry program did not adequately cover this recent loss. Although UC Davis has publicly stated that it has an unwavering commitment to continue its strawberry program, it has not developed a balanced budget that addresses how it will fund this program in the future.

UC Davis Has Options for Increasing Revenue to the Strawberry Program

The university's Office of the President's Innovation Alliances and Services (Alliances and Services) collects patent income from all UC Davis patents and uses this aggregate sum to pay all patent-related expenses and to pay individual inventors for their share of the income, before distributing the remaining amount to UC Davis. As shown in Figure 3 on the following page, the strawberry program generated roughly \$7 million in patent income in fiscal year 2010–11. Alliances and Services used this income to pay the former breeders and various other expenses before distributing the remaining \$3.1 million to UC Davis, which then ultimately distributed only \$556,848 to the strawberry program.

² This calculation excludes the impact of funding that UC Davis provides to pay for the indirect costs of the strawberry program. See footnote † in Table A on page 34 for further information about UC Davis' method for funding the program's indirect costs.

Figure 3
Distribution of Strawberry Breeding Program Patent Income Earned in Fiscal Year 2010–11



Sources: Accounting records from UC Davis' Kuali Financial System; the University of California, Los Angeles' Financial System General Ledger Applications system; the University of California (University) Office of the President's Patent Tracking System; UC Davis' issue report titled *UC Davis Budget Model: Allocating Patent Revenues: Transitions to Align With the Incentive-Based Budget Model*; UC Davis' Internal Audit Services' report on the strawberry program, and interviews with key university staff.

Note: The university collected gross patent income in fiscal year 2010–11, distributed the net patent income to UC Davis in fiscal year 2011–12, and UC Davis distributed a portion of the net patent income to the strawberry program in fiscal year 2012–13.

* These amounts are estimates because the university does not calculate these expenses and revenues specifically for the strawberry program.

† UC Davis allocated \$102,082 of other programs' net income to the agricultural college, a portion of which was distributed to the strawberry program. In addition, UC Davis received an additional \$71,716 of research share funding, a portion of which was also distributed back to the strawberry program.

‡ This represents an allocation to UC Davis' general fund. According to UC Davis' administrative budget and budget operations director (budget director), the provost oversees this funding and uses it to support the overall academic and organizational functioning of the campus.

§ According to the budget director, the provost uses this allocation to make various investments on campus. She stated that during our audit period, the provost used patent funds for safety improvements to the chemistry building, renovation of laboratory space for faculty in the College of Biological Sciences, and an investment in the mouse biology program.

|| The agricultural college administers this fund, which is earmarked for strawberry research that is not exclusive to the strawberry program. For example, these funds may be used for research related to plant sciences, horticulture, plant pathology, and genetics, among other things.

Because some of UC Davis' patents do not generate sufficient income to cover their own expenses, the income of profitable patents, such as those for strawberries, subsidizes the net expenses of unprofitable patents. As a result, UC Davis estimated that \$746,881 of the \$7 million in patent income that the strawberry program generated in fiscal year 2010–11 was used to subsidize the net expenses of other patents. The administrative budget and budget operations director of UC Davis' Budget and Institutional Analysis Division (budget director) stated that it would not be in the best interests of the university to stop using profitable patents to subsidize patents that do not generate sufficient revenue to cover their costs because this would discourage researchers from applying for new patents. According to the budget director, all patents generate legal costs up front before they earn any royalties; thus, a patent may be unprofitable during its initial years even though it may prove to be profitable over its lifetime.

Because UC Davis only allocates a small portion of net strawberry patent income back to the program at the end of the distribution process, we believe that it could address the strawberry program's recent loss of funding by increasing this allocation as necessary to adequately fund the program. However, the budget director believes that revising the distribution process in this way would lead to certain complications and is unnecessary. She stated that in order to allocate a larger portion of strawberry patent income to the strawberry program, the budget unit would need to reduce the funding of other research programs and entities on campus. She stated that, alternatively, the College of Agricultural and Environmental Sciences (agricultural college) and the Department of Plant Sciences (department) could allocate a greater share of their patent income to the strawberry program. In addition, she suggested that the strawberry program could submit budget requests or obtain new research grants to acquire additional funding. Nevertheless, we believe that UC Davis could ensure that the historically profitable strawberry program remains adequately funded by changing its distribution process to allocate more patent income back to the program.

The University of Florida (Florida), which has conducted a strawberry breeding and selection program since 1968, demonstrates the feasibility of allocating strawberry patent income more directly to the strawberry program using the distribution model described in the text box. According to the assistant professor who oversees Florida's strawberry breeding program, the strawberry breeding program's share of patent income covered 100 percent of breeding

University of Florida Patent Income Distribution Model

The University of Florida (Florida) distributes the patent income from its strawberry breeding program as follows:

- 10 percent to its licensing and patenting organization.
- 20 percent to its breeders and any cooperators (for example, other scientists that significantly assisted the breeders in the creation of a new cultivar).
- 70 percent to the Cultivar Development Research Support Program, which contains the strawberry breeding program. The funds are then distributed directly to Florida's strawberry breeding program as follows:
 - 100 percent of the first \$50,000 of patent income earned per variety each year.
 - 50 percent of the next \$100,000 of patent income earned per variety each year.
 - 33 1/3 percent of all patent income earned above \$150,000 per variety each year.

Sources: Florida's intellectual property policy and interviews with Florida staff.

Note: Florida applies this distribution model to the patent income that remains after deducting certain expenses, including patent filing fees and legal expenses. According to the assistant professor who oversees Florida's strawberry breeding program, these expenses are almost negligible.

Florida distributes a significantly larger portion of total strawberry patent income back to its strawberry breeding program than UC Davis does.

operation expenses in fiscal year 2012–13. In addition, Florida distributes a significantly larger portion of total strawberry patent income back to its strawberry breeding program than UC Davis does. For example, in fiscal year 2012–13, Florida's strawberry breeding program generated \$2.9 million in receipts of gross patent income and approximately 26 percent of that amount was distributed back to the strawberry breeding program. As discussed earlier, in fiscal year 2010–11, UC Davis earned \$7 million of gross strawberry patent income and ultimately distributed \$556,848, or roughly 8 percent, to its strawberry program. Similarly, in fiscal year 2011–12, UC Davis' strawberry program generated roughly \$7 million in patent income and UC Davis distributed \$659,234, or approximately 9 percent back to its strawberry program. Even though the university paid the former breeders a higher royalty share than Florida does, if the university's gross strawberry program patent income was reduced by the \$2.2 million that it paid its former breeders, the percentage of remaining strawberry patent income that UC Davis allocated to the strawberry program would still be low compared to Florida. Specifically, UC Davis' allocation of \$556,848 of strawberry program patent income earned in fiscal year 2010–11 would constitute only 12 percent of the remaining strawberry patent income of \$4.8 million.

In addition, we believe UC Davis should reassess the appropriateness of the current royalty rates charged to licensees. As we mentioned earlier, UC Davis discontinued two agreements that brought substantial revenue into the program. By discontinuing those agreements, UC Davis also eliminated the discounted royalty rates, which effectively increased royalty rates by 20 percent to 33 percent for sales to growers within California, elsewhere in the United States, and Canada. However, assuming that the university's current distribution process and plant sales remain constant, the maximum increase to the royalties allocated to the strawberry program would be approximately \$200,000—well short of the roughly \$666,000 difference between the strawberry program's revenues and expenses in fiscal year 2013–14.

Furthermore, despite the elimination of the discounts to the royalty rates, UC Davis' undiscounted royalty rates remain lower than other institutions charge as illustrated in Table 3. UC Davis' Innovation Access unit—the entity responsible for negotiating licensing agreements with nurseries and assessing royalty rates—should consider raising the strawberry program's royalty rates. For almost all of the master licensees we reviewed, the university allows them to charge their sublicensees higher royalty rates than the rate floor that their licensing agreements set for international sales, so long as the master licensees split these additional profits equally with the university. However, the university does not have a similar mechanism in place for its licensed nurseries' sales, so it has no assurance that these current rates are reasonable.

According to the business development and intellectual property manager (intellectual property manager) of the Innovation Access unit, maximizing sales revenue by raising royalty rates to levels that could diminish stakeholder access to UC Davis’ strawberries may run counter to the public mission of the university to serve California agriculture. Although he asserted that the Innovation Access unit periodically analyzes the reasonableness of royalty rates, he was unable to demonstrate that the Innovation Access unit had performed any such analysis since 2007, when it last decided to increase rates. In that analysis, UC Davis compared its rates to those charged by industry peers, such as Florida, which used a similar royalty model. Based on that analysis, UC Davis raised royalty rates for certain licensees over the next three years, depending on the location of the sales.

Table 3
Comparison of University of California, Davis Royalty Rates to Royalty Rates of Other Universities

	UNIVERSITY OF CALIFORNIA, DAVIS (UC DAVIS)		UNIVERSITY OF FLORIDA (FLORIDA) (PER 1,000 PLANTS)	OREGON STATE UNIVERSITY (PER 1,000 PLANTS)
	DISCOUNTED RATES BEFORE SEPTEMBER 1, 2013* (PER 1,000 PLANTS)	UNDISCOUNTED RATES EFFECTIVE SEPTEMBER 1, 2013 (PER 1,000 PLANTS)		
Sales to growers within their respective state	\$6.00	\$8.00	\$10.00 [†]	\$20.00
Sales to growers within the United States (outside of their respective state) and Canada	7.50	9.00	10.00	20.00 [‡]

Sources: University of California (university) licensing agreements; UC Davis’ correspondence with its licensees; interviews with staff at UC Davis; Florida; Florida Foundation Seed Producers, Inc. (Foundation); the Florida Strawberry Growers Association (growers association); and Oregon State University; as well as their respective websites.

Note: This table does not include master licensees, which the university generally allows to charge their sublicensees higher royalty rates than the rate floor that their licensing agreements set for international sales, so long as these additional profits are split equally with the university.

* These discounted royalty rates were contingent upon the California Strawberry Commission and the nurseries fulfilling their financial obligations under their respective research agreements.

[†] According to the assistant professor who oversees Florida’s strawberry breeding program, this represents Florida’s full royalty rate, which was established by the Foundation, a support organization that manages Florida’s intellectual property, including strawberry varieties. However, Florida allows the growers association’s wholly owned sister organization, the Florida Strawberry Patent Service Corporation, to rebate growers association members 50 cents to \$5 per 1,000 plants sold. In addition, the assistant professor also stated that while one older strawberry cultivar has a royalty rate of \$6 per 1,000 plants sold, the newer varieties that make up the vast majority of Florida’s cultivar sales in the United States and Canada, have a \$10 royalty rate.

[‡] According to the senior licensing associate at Oregon State University, its licensing agreements do not allow nurseries to sell strawberry plants to growers outside of the United States.

Although UC Davis has options for adequately funding the strawberry program, at the time of our review, it had not made a final decision on how it will address the revenue it lost in fiscal years 2012–13 and 2013–14. In order to choose the best course of action, UC Davis should develop a budget for the strawberry program that accounts for the various changes to the program as it transitions to a new breeder.

We believe it is important for the Department of Plant Sciences to consistently prepare annual budgets for the strawberry program, especially given the recent reduction in program revenues.

The Department Has Not Always Developed or Used a Budget to Monitor the Strawberry Program

Because the strawberry program has recently lost a significant amount of funding and its financial reserves have declined, it is imperative that the department prepare a budget that details how the program will be funded in the future. However, the department has not consistently developed budgets for the strawberry program. According to the department's chief administrative officer, the department prepared a budget for the period of October 2010 through January 2011. However, as shown in Table 4, it did not prepare another budget for almost two years, when it prepared a budget that covered the 14-month period of November 2012 through December 2013. The next budget that the department prepared covered the 18-month period of January 2014 through June 2015.

UC Davis' 2013 *Administrative Responsibilities Handbook* (handbook) states that administrative officials should, whenever applicable, establish annual budgets to ensure sound financial management. However, UC Davis does not consider the handbook to be a formal policy, and the department's chief administrative officer stated that the department is not required to prepare an annual budget for the strawberry program. She developed the budgets described above upon the request of one of the former breeders who also specified the time periods for the budgets. Nevertheless, we believe it is important for the department to consistently prepare annual budgets for the strawberry program, especially given the recent reduction in program revenues.

The budgets that the department prepared for the strawberry program included the projected salary and benefits expense for research staff and other support staff, travel expenses, and various supplies (the department accounts for non-capitalized equipment, contracted farm labor, and various other expenses as "supplies"). The budgets also included an estimate for the amount of patent and other income that would be allocated to the program and research contributions under the discontinued Non-California Discount Revenue Program (discount program). However, the strawberry program budgets have not included the costs of the former breeders' salaries and benefits or all indirect costs because the university has separately funded the majority of these expenses. For example, the agricultural college and the university's Division of Agriculture and Natural Resources have funded the salaries and benefits for the breeders using state general funds, federal funds, and other funds. Alliances and Services paid the breeders' share of patent income in addition to the breeders' salaries, which were funded and paid separately by the university.

The department’s most recent budget projected that the strawberry program would exhaust its reserves by the end of fiscal year 2014–15. As shown in Table 4, the department’s budget projected that the strawberry program would use the last of its reserves and would have a \$104,000 deficit by June 2015. Even though the department identified this potential funding deficit back in January 2014 when it prepared the current budget, it has not yet completed an analysis of the strawberry program’s expected revenues and expenses for future years. The department chair explained that he is working with the new breeder to complete a strawberry program budget that includes this analysis by summer 2015.

Table 4
Strawberry Breeding Program Budgets During the Audit Period

BUDGET PERIOD	BUDGET	
February 2011–October 2012	The Department of Plant Sciences (department) did not prepare a budget for the Strawberry Breeding Program (strawberry program) for this time period.	
November 2012–December 2013	Actual beginning fund balance	\$1,252,454
	Income	979,066
	Expenses:	1,394,656
	Salaries and benefits	907,906
	Supplies	451,750
	Travel	35,000
	Estimated ending fund balance	\$836,864*
January 2014–June 2015	Actual beginning fund balance	\$1,367,652
	Income	450,000
	Expenses:	1,921,800
	Salaries and benefits	1,183,800
	Supplies	684,000
	Travel	54,000
	Estimated ending fund balance	\$(104,148)

Sources: Budget documents for the strawberry program and other information provided by the department’s chief administrative officer.

* The department underestimated the strawberry program’s income for this time period, so the estimated ending fund balance was less than the actual.

Although the department identified this potential funding deficit, it did not perform any analysis to determine whether this projected shortfall would actually occur. When we compared the department’s budget to the strawberry program’s accounting records, we found that the program had a balance of \$1.8 million at the end of fiscal year 2012–13, but that balance had declined to \$1.1 million by the end of March 2015. This exceeded the department’s budget estimate that the program would only have a balance of \$222,252 by the end of March 2015.

According to the chief administrative officer, this variance occurred because the strawberry program's expenses declined significantly after the two former breeders retired in November 2014 and the program's patent income allocation was \$174,000 higher than budgeted. However, UC Davis hired a new breeder who began working on the strawberry program in February 2015, so the reduction in strawberry program expenses may not be indicative of a continuing trend. The department chair stated that the department anticipates that once the strawberry program is back to full activity, its expenses will increase because crews will need to resume working at the test fields. In addition, he stated that the department is currently looking for a new test farm and he anticipates large upfront costs to prepare for this new location, including the purchase of new equipment and irrigation infrastructure.

The department cannot demonstrate that it uses these budgets to monitor the financial condition of the strawberry program. For example, it does not compare actual expenses to budgeted expenses by category (such as salaries, supplies, and travel) throughout the year. The handbook states that administrative officials must compare actual financial results to the budget regularly to ensure that expenses are consistent with the budget, that charges are appropriate, and that projected revenues are being realized. The handbook also states that administrative officials, or their designees, must determine the cause and take corrective action when actual financial results vary significantly from the budget. We believe this is an important practice that would help the department to ensure that the strawberry program operates in an efficient and cost-effective manner. For example, the actual cost for supplies for the strawberry program exceeded the budgeted amount by \$104,000, or 23 percent, for the period November 2012 through December 2013. However, the department's chief administrative officer stated that the department did not compare actual expenses to budgeted expenses by category because it is not required to do so and because the strawberry program had a large surplus of funds remaining from prior years so it was unlikely that the program would run out of funding.

The department does not compare actual expenses to budgeted expenses by category for the strawberry program and, therefore, cannot ensure that the program is operating in a cost-efficient manner and is adequately funded.

The department's chief administrative officer stated that no individuals apart from her, the assigned account manager, and the former breeders were responsible for reviewing the financial condition of the strawberry program unless the program was in overdraft. The agricultural college conducts quarterly reviews of reports showing accounts in overdraft by over \$100,000; however, according to its executive assistant dean, no such instances were noted for the strawberry program. In addition, the chair of the department stated that he would review the financial condition of the strawberry program if it were in overdraft, but this has never happened since he became chair in 2004. Nevertheless, we do not believe that the department and the agricultural college are adequately monitoring the financial operations of the strawberry program, particularly given the program's declining fund balance.

Another factor that has made it challenging for UC Davis to effectively monitor the strawberry program is that until recently, its accounting system did not have a unique identifier to separately track the financial activities of the strawberry program. Rather, the department accounted for the activities of the strawberry program using organization codes assigned to the two former breeders, even though some of the funding in the former breeders' accounts could be used by them to work on other projects and program activities at their discretion. By late February 2015, the department created separate financial organization codes for the new breeder and the strawberry program. According to the department's chief administrative officer, in fiscal year 2015–16, the department plans to start using the strawberry program's new organization code to account for all of the program's activities. This will allow the department to separate the financial activities of the strawberry program from the financial activities related to the new breeder's work for other programs or projects. Moreover, the lack of a unique organization code to track the strawberry program's expenses made it difficult for UC Davis to provide accurate financial information in response to a request from the Legislature. As described further in the Appendix, UC Davis significantly understated the strawberry program's revenues and expenses for fiscal year 2012–13 in its April 2014 report to the Legislature.

UC Davis Missed Opportunities to Collect All Strawberry Program Revenues

Under the terms of the strawberry program's licensing agreements, UC Davis had opportunities to collect additional strawberry program revenues, but it chose not to do so. For example, UC Davis did not assess or collect late fees on royalty payments that were, in some cases, submitted months after they were contractually due. In addition, we identified discounts that UC Davis provided to master licensees and licensed nurseries, around the time the discount program's agreements ended, without receiving any commensurate benefit. As discussed in the Introduction, the discount program provided these licensees with discounts on their sales to growers outside of California in exchange for an annual contribution to the strawberry program. UC Davis might have been able to collect additional revenue around the time the discount program ended; however, it set up the agreements that governed the discount program in a way that prevented it from doing so. After considering several factors and the advice of its counsel, UC Davis decided it would not attempt to collect those contributions. Finally, UC Davis' lax oversight of the licensees' sales reports provides little assurance that it is collecting all of the royalty revenues that it is owed.

UC Davis did not assess or collect late fees on royalty payments submitted after they were due and its lax oversight of licensees' sales reports provides little assurance that it is collecting all of the royalty revenues that it is owed.

Over a three-year period, UC Davis did not collect approximately \$157,000 in interest charges from three licensed nurseries and a master licensee for late royalty payments.

Over a three-year period, UC Davis did not collect approximately \$157,000 in interest charges from three licensed nurseries and a master licensee for late royalty payments. According to the intellectual property manager, the licensing agreements between the university and its licensees generally specify payment due dates and state that licensees must pay a late fee on late royalty payments. This late fee varies from 5 percent to 10 percent annual interest on the amount of the late payment, depending on the licensing agreement. We reviewed a selection of these licensing agreements, and all the agreements that we reviewed contained the terms regarding payment due dates and interest on late payments.

Of the nine licensees whose payments we reviewed during fiscal years 2010–11 through 2012–13, three licensed nurseries and one master licensee paid their royalties after the payment due date. However, UC Davis did not collect late fees from any of them. The three licensed nurseries accounted for roughly \$4,000 of the uncollected late fees and the master licensee was responsible for the rest. Specifically, over these three fiscal years, we noted that the master licensee submitted almost all of its royalty payments after its contractual due date. As a result, UC Davis could have collected roughly an additional \$153,000 in interest charges for these late payments. The intellectual property manager of UC Davis' Innovation Access unit, which assists Alliances and Services with contacting licensees that are delinquent in paying royalties, stated that it was UC Davis' practice not to collect late fees from licensees, as long as the licensees contacted the Innovation Access unit and made good faith efforts to submit their payments. According to the associate vice chancellor of Technology Management and Corporate Relations within UC Davis' Office of Research, effective commercialization of research entails working with licensees in a manner that is supportive of their commercial and business needs rather than one focused on being punitive or directed towards extracting the maximum possible economic benefit from one or more licensees. Further, he stated that while UC Davis seeks to enforce contractual obligations, in practice it takes a fair, equitable, consistent, and good-faith based approach to working with its licensees. Nevertheless, by choosing not to pursue collecting late payment fees, UC Davis is missing opportunities to collect revenues that could be used to support the strawberry program.

With regard to the former discount program, we determined that the discount program's agreements should have been better structured to protect UC Davis' financial interests. Specifically, around the time the discount program ended, master licensees and licensed nurseries received a significant amount in discounts without providing a commensurate benefit to UC Davis and the strawberry program. As we discuss in the Introduction, the former breeders notified UC Davis in August 2012 that they were exercising

their right to discontinue the funding arrangement and, in response to this request, UC Davis notified the master licensees and licensed nurseries that the discount program would be effectively terminated by December 31, 2012. When the discount program began, the former breeders and UC Davis agreed that the terms of the discount program's agreements would govern the program's termination. However, none of the agreements we reviewed contained any language that addressed winding down the discount program or the collection of final contributions. Specifically, the agreements were silent on whether contributions made before termination entitled a licensee to a discount on future royalty payments. Lacking specific guidance in the agreements, UC Davis provided some of its master licensees with discounts without collecting contributions in return. For example, UC Davis' largest master licensee received discounts without any corresponding contribution for eight months, totaling roughly \$206,000. Similarly, UC Davis provided licensed nurseries a total of \$39,000 in discounts from July 2012 through September 2013 and received nothing in return.

Before proceeding with the termination of the discount program, UC Davis sought the advice of its counsel to confirm that its approach accounted for the legal complexities that this situation presented. UC Davis and its counsel considered many factors to determine the potential consequences of attempting to collect contributions. Specifically, UC Davis weighed the cost of a lawsuit with licensees that had long-standing relationships with the university against the benefit of the contribution amounts. As a result of these business considerations, UC Davis did not pursue collection. Although it is possible that UC Davis may have successfully collected contributions without having to provide the discounted royalty rate after program termination, its decision not to collect, based on advice of counsel and its business considerations, does not seem unreasonable. However, had the discount program's agreements anticipated the issues associated with its termination and contained language to address those issues, UC Davis would likely have been able to avoid the resulting lost revenue.

UC Davis may also be missing out on royalties because it lacks an adequate process for ensuring that master licensees and licensed nurseries are accurately reporting their sales. The university's licensing agreements that we reviewed contain language granting UC Davis the right to inspect the master licensees and licensed nurseries' financial records and verify compliance with the terms of the agreements. However, according to the intellectual property manager, the Innovation Access unit has never conducted an audit of its master licensees and licensed nurseries to ensure that they accurately report their sales of licensed strawberry varieties and that they consequently are paying appropriate royalties to the university.

Lacking specific guidance in the discount program agreements, UC Davis provided some of its master licensees with discounts without collecting contributions in return.

Although the intellectual property manager agreed that the accuracy of sales is an area of potential risk, he asserted that performing audits of the licensees is not cost-effective. However, he was unable to provide any analysis to support his conclusion.

UC Davis employed a full-time field representative whose responsibility was, among other things, to monitor licensed nurseries. Specifically, the field representative was responsible for performing annual nursery site visits and conducting periodic surveys of the nurseries' planted fruit acres. However, the intellectual property manager, who supervised the field representative, could not provide evidence that the field representative verified the nurseries' sales reports or performed any of the required oversight activities. In addition, this field representative was working part-time from August 2012 until his retirement in August 2014. According to the intellectual property manager, UC Davis has hired a new field representative with an expected start date of June 2015. Nevertheless, without effective oversight activities such as regular reviews of licensees' financial records, UC Davis cannot be certain that master licensees and licensed nurseries are accurately reporting sales of strawberry plants and that it is collecting all the royalties owed under the licensing agreements.

Recommendations

UC Davis should ensure that the strawberry program is adequately funded. To address the strawberry program's recent loss of funding, the university should consider allocating more of the strawberry program's patent income back to the program itself. In addition, UC Davis should regularly reassess the appropriateness of the strawberry program's royalty rates charged to licensees and adjust the rates as needed to support the program.

The department should prepare a balanced budget for each fiscal year that details how it will fund the strawberry breeding program. In addition, it should begin comparing actual income and expenses to the budget periodically to ensure that the program is operating in a cost-efficient manner and is adequately funded.

To better enable it to effectively monitor and report the financial condition of the strawberry program, UC Davis should implement its plan to begin accounting for the strawberry program's financial activities separately from those of the breeder in fiscal year 2015–16.

UC Davis should collect all late fees that its licensees owe.

If UC Davis considers providing future discounts on royalty rates, it should structure the agreements to ensure that it receives a commensurate benefit during the entire time that licensees receive discounts.

UC Davis should develop a risk-based audit plan to begin periodically reviewing the financial records of master licensees and licensed nurseries to ensure that they are accurately reporting all of their sales of licensed strawberry varieties and paying the university all the royalties it is entitled to. To encourage compliance, UC Davis should notify all master licensees and licensed nurseries that it will begin auditing the sales records of selected licensees.

We conducted this audit under the authority vested in the California State Auditor by Section 8543 et seq. of the California Government Code and according to generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives specified in the scope section of the report. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Respectfully submitted,



ELAINE M. HOWLE, CPA
State Auditor

Date: June 9, 2015

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For questions regarding the contents of this report, please contact Margarita Fernández, Chief of Public Affairs, at 916.445.0255.

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Appendix

THE FINANCIAL DATA THE UNIVERSITY OF CALIFORNIA, DAVIS PROVIDED TO THE LEGISLATURE FOR THE STRAWBERRY BREEDING PROGRAM CONTAINED ERRORS

In response to a request from the Legislature, in April 2014, the University of California, Davis (UC Davis) chancellor submitted a letter that included various financial reports for the Strawberry Breeding Program (strawberry program) for fiscal years 2004–05 through 2012–13. Two of these reports outlined the distribution of the strawberry program’s patent income to the strawberry program and other entities within the University of California. Figure 3 on page 20 shows the distribution of the patent income that the strawberry program earned in fiscal year 2010–11, a portion of which was eventually distributed to the strawberry program in fiscal year 2012–13.

The other financial report detailed the revenues and expenses of the strawberry program. We reviewed the information in this report for the last two fiscal years (that is, 2011–12 and 2012–13) and determined that this information contained errors and inaccurately reported the financial activities of the strawberry program. Collectively, these errors caused UC Davis to understate the strawberry program’s revenues by \$822,406, or 51 percent, and its expenses by \$503,868, or 28 percent, for fiscal year 2012–13. Some of these errors likely occurred because the Department of Plant Sciences (department) could not easily identify the strawberry program’s revenues and expenditures. Until February 2015 UC Davis’ accounting system did not have a unique identifier to capture the strawberry program’s financial information from multiple accounts. The department also failed to include all of the strawberry program’s accounts when it prepared the report for the Legislature. In addition, the department’s chief administrative officer attributed other errors in the report to a misunderstanding with the College of Agricultural and Environmental Sciences regarding which revenues and expenses of the strawberry program the department should have included in the report. We show the strawberry program revenues and expenses that UC Davis reported to the Legislature and our corrections in Table A on the following pages.

Table A**Original and Corrected Strawberry Breeding Program Revenues and Expenses Reported to the Legislature**

	CALIFORNIA STRAWBERRY COMMISSION (COMMISSION) FUNDING* FEBRUARY 1, 2011, TO JANUARY 31, 2012		NON-CALIFORNIA DISCOUNT REVENUE PROGRAM FISCAL YEAR 2011–12		PATENT INCOME FISCAL YEAR 2011–12		UNIVERSITY OF CALIFORNIA, DAVIS (UC DAVIS), DEPARTMENT OF PLANT SCIENCES FISCAL YEAR 2011–12	
	REPORTED	REPORTED	REPORTED	CORRECTED	REPORTED	CORRECTED	REPORTED	CORRECTED
Revenue	\$350,000	\$594,971	\$306,149 [‡]	\$0	\$156,679 [‡]	\$294,260		
Expenses								
Salary	128,743	121,287	58,527	58,527	86,201	86,201		
Benefits	41,354	57,806	23,300	23,303	46,143	46,143		
Supplies	171,779	90,086	91,385	91,385	126,468	126,468		
Equipment	0	0	0	0	0	0		
Travel	8,124	10,090	9,482	9,482	0	0		
Indirect costs	0	37,586	0	0	0	0		
Total expenses	\$350,000	\$316,855	\$182,694	\$182,697	\$258,812	\$258,812		

	FEBRUARY 1, 2012, TO JANUARY 31, 2013		FISCAL YEAR 2012–13			
	REPORTED	REPORTED	REPORTED	CORRECTED	REPORTED	CORRECTED
Revenue	\$350,000	\$423,185	\$556,848 [‡]	\$862,997	\$20,560	\$23,004
Expenses						
Salary	119,064	227,148	0	14,805	0	0
Benefits	54,372	117,509	0	0	0	0
Supplies	169,385	332,744	20,537	20,537	28,481	28,481
Equipment	0	0	0	0	0	0
Travel	7,179	20,786	1,211	1,211	964	964
Indirect costs	0	95,322	0	0	0	0
Total expenses	\$350,000	\$793,509	\$21,748	\$36,553	\$29,445	\$29,445

Sources: UC Davis' report to the Legislature in April 2014; accounting records from UC Davis' Financial Information System, Quali Financial System; and Payroll and Personnel system; and interviews with key UC Davis employees.

Note: Salmon-colored cells indicate where the figures in UC Davis' report to the Legislature differ from the results of our audit.

* UC Davis reported these amounts based on the time period specified in the commission's agreements with the University of California (university). Specifically, it used the February 1 to January 31 time period to ensure that it matched Strawberry Breeding Program (strawberry program) expenses with the funding the commission provided for that period. Otherwise, the university reported financial information based on a fiscal year, from July 1 to June 30.

† According to the director of the Costing Policy and Analysis unit within the Accounting and Financial Services Division, UC Davis calculates its indirect cost rates at the campus level and it does not determine the indirect costs for individual programs, such as the strawberry program. In order to provide this information to the Legislature, UC Davis estimated that the strawberry program's indirect costs were equal to 26 percent of its direct costs. According to the senior associate vice chancellor of UC Davis' Finance and Resource Management Division, UC Davis allocated some of the patent income from the strawberry program and other patents to pay for the indirect costs of the strawberry program.

‡ UC Davis reported these amounts based on the fiscal year that it intended to allocate the funds to the strawberry program, rather than the fiscal year when it actually recorded the funds in the strawberry program's accounting records. For example, UC Davis delayed its fiscal year 2011–12 allocation of patent income until fiscal year 2012–13. As a result, the corrected amount for fiscal year 2012–13 patent income funding includes UC Davis' intended allocation for fiscal year 2011–12 (\$306,149) and fiscal year 2012–13 (\$556,848).

	UC DAVIS, COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES FISCAL YEAR 2011-12		UC DAVIS, INDIRECT COSTS FISCAL YEAR 2011-12†		TOTAL ALL SOURCES FISCAL YEAR 2011-12			
	REPORTED	CORRECTED	REPORTED	CORRECTED	REPORTED	CORRECTED	DIFFERENCE	
Revenue	\$290,948	\$303,561	\$319,742	\$317,353	Revenue	\$2,018,489	\$1,860,145	(8%)
Expenses					Expenses			
Salary	229,125	229,125	0	0	Salary	623,883	623,883	0
Benefits	61,823	61,823	0	0	Benefits	230,426	230,429	0
Supplies	12,613	3,422	0	0	Supplies	492,331	483,140	(2)
Equipment	0	0	0	0	Equipment	0	0	0
Travel	0	0	0	0	Travel	27,696	27,696	0
Indirect costs	0	0	319,742	317,353	Indirect costs	357,328	354,939	(1)
Total expenses	\$303,561	\$294,370	\$319,742	\$317,353	Total expenses	\$1,731,664	\$1,720,087	(1%)

	FISCAL YEAR 2012-13				FISCAL YEAR 2012-13			
	REPORTED	CORRECTED	REPORTED	CORRECTED	REPORTED	CORRECTED	DIFFERENCE	
Revenue	\$0	\$409,840	\$271,431	\$375,404	Revenue	\$1,622,024	\$2,444,430	51%
Expenses					Expenses			
Salary	230,800	431,757	0	0	Salary	577,012	792,774	37
Benefits	68,234	167,324	0	0	Benefits	240,115	339,205	41
Supplies	12,175	97,218	0	0	Supplies	563,322	648,365	15
Equipment	0	0	0	0	Equipment	0	0	0
Travel	0	0	0	0	Travel	30,140	30,140	0
Indirect costs	0	0	271,431	375,404	Indirect costs	366,753	470,726	28
Total expenses	\$311,209	\$696,299	\$271,431	\$375,404	Total expenses	\$1,777,342	\$2,281,210	28%

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May 22, 2015

ELAINE M. HOWLE, CPA*

California State Auditor
621 Capitol Mall, Suite 1200
Sacramento, CA 95814

Dear Ms. Howle:

We are in receipt of the California State Auditor's June 2015 draft audit report #2014-121 regarding the University of California, Davis administration of the Strawberry Breeding Program audit conducted at the request of the Joint Legislative Audit Committee. We take the results of your audit seriously. After reviewing the draft report's findings and recommendations we are pleased to provide the following comments in response. Each recommendation will be addressed individually.

The University of California, Davis (UC Davis) is a leading global university. As a research university with a public and land-grant mission, UC Davis' primary mission is to maximize the public good through education, training, and research. We are proud of the many contributions the UC Davis Strawberry Breeding Program (strawberry program) has made. Our long-established and well-recognized record in the development and release of new and improved strawberry varieties continues to make a positive impact to the strawberry industry today, and we will continue to do so for many years in the future.

UC Davis is committed to the strawberry program's continued service to strawberry producers, shippers, processors and consumers, as it has been for more than 60 years. We have declared and demonstrated our commitment to a robust strawberry program by way of numerous statements from the UC Davis Chancellor and the College of Agricultural and Environmental Sciences Dean, commitments made to settle litigation with the California Strawberry Commission, and actions taken on campus. Even before the two former breeders retired, UC Davis commenced an internal audit of the strawberry program to evaluate its fiscal soundness, business practices, and mission. Following the retirement of the former breeders, UC Davis promptly hired a new tenured faculty member to serve as the new breeder and to partner with the University to re-envision, re-energize and re-focus the strawberry program on its primary commitment of serving the industry and public. The new breeder immediately took on activities critical to the future success of the strawberry program, including contracting for propagation of the entire germplasm collection, continuing to DNA fingerprint the collection, evaluating alternative land options with input from the California Strawberry Commission, hiring key staff to run the field program, accepting graduate students to work on genetics and breeding, and establishing other state and national collaborations for the purpose of sequencing the strawberry genome and submitting joint research proposals. These actions leave no room for doubt that UC Davis will ensure the continuation of the strawberry program by allocating necessary funds and seeking out new funding sources as needed.

As a preeminent university, we constantly strive to be reliable partners and trustworthy stewards of our resources. Below we provide comments on the specific findings as well as UC Davis' intended actions to

* California State Auditor's comments appear on page 43.

Ms. Elaine M. Howle, CPA
May 22, 2015
Page 2

address the Report Recommendations. Our comments are structured as follows: The audit results and specific findings from the report (**bolded**), followed by UC Davis' comments, the report's recommendation (*italicized*), and UC Davis' action plan.

I. "The University of California, Davis Has Not Determined How It Will Address the Strawberry Breeding Program's Recent Loss of Funding"

Although UC Davis has not made final budgetary determinations regarding the sources of funds for the strawberry program, it will ensure sufficient funds are available for the 2015-16 budget year and beyond. The reduction in strawberry program sources during the period under review is, as you note, due to the termination of the research agreements associated with discounted royalty rates. The discounted rates could only be offered in accord with the inventors' consent. The inventors in this case were the two former breeders. The discontinuation of the discount program was the beginning of a transition period for the strawberry program as the former breeders began preparing for their retirement. The strawberry program is now embarking on a new era and a new direction with the recent hire of a new breeder. The new breeder is currently exploring many options for the strawberry program's direction. Certainly part of this decision-making process is identifying other funding sources that may be pursued to meet the future needs and ensure sustainability of the strawberry program.

A. "UC Davis Has Options for Increasing Revenue to the Strawberry Program"

Indeed the University has several options available to ensure the strawberry program is sufficiently funded to meet its program objectives including:

- The strawberry program has reserves of approximately \$1 million which are available for use. We find it appropriate for the strawberry program to utilize these funds as needed.
- There are discretionary funds at the Department of Plant Sciences (Department), College of Agricultural and Environmental Sciences (College), and campus levels that could be leveraged to ensure adequate funding of the strawberry program, and these funds will be used if necessary for the financial vitality of the program.
- UC Davis analyzed and revised its patent revenue allocation methodology two years ago to better align with the Incentive-Based Budget Model. This resulted in greater allocations of patent income to the colleges and schools.

1. Allocate more patent income to the strawberry program

We want to clarify that any revenue generated by a University patent is University income. Per UC Davis Policy and Procedure Manual PPM 250-15 **Patents and Material Transfers** III.A. *The University retains all patent rights to Intellectual Property resulting from University research or employment, and IV.A.1. At the time of hire, the department must have the employee sign the University's Patent Acknowledgement.*

Net patent income distributions received by UC Davis are unrestricted resources and the University can and should exercise discretion over the allocation and management of these funds. That said, the campus allocates patent (and other unrestricted) revenues using a methodology that meets several goals such as providing an incentive to units (i.e., department and college) that generate the revenues. In addition, the allocation methodology has a core principle of administrative ease and consideration of year-over-year fluctuations. Finally, the allocation of a single fund source such as

Ms. Elaine M. Howle, CPA
May 22, 2015
Page 3

patent revenues is always considered in the context of overall programmatic needs and how those needs might be met or reframed to ensure success. Increasing the allocation of patent revenues directly to the strawberry program is inconsistent with the all-funds budget approach that is used for units of this type.

We want to provide some additional context for the strawberry program. The strawberry program's annual expenses are approximately \$2 million and are relatively small when compared to the entire UC Davis annual operating expenses of more than \$3 billion. The strawberry program is supported by a variety of general infrastructural support that it does not pay for directly. These services include departmental administration, building use, operations and maintenance, sponsored projects administration, and general administrative services to name a few. The campus supports these vital services with a variety of unrestricted funds, which may include patent income.

We cannot determine whether the University of Florida's (Florida) Royalty Revenue Distribution Model would be a better distribution methodology for use at UC Davis. There are many unknown variables at Florida that may not compare to UC Davis. For instance:

①

- Are Florida strawberry personnel salaries paid directly from the breeding program's royalty revenue or another source as is the case with the UC Davis strawberry program?
- Does the Florida strawberry breeding program pay for all of its support service expenses directly which are considered indirect support at UC Davis (i.e. Office of Research, Accounting & Financial Services, Human Resources, Provost) and paid for by the campus with unrestricted funds?
- What, if any, research funding arrangements does Florida have with its in-state breeders and what other funding sources are available to them?

Report Recommendation

UC Davis should ensure that the strawberry program is adequately funded. To address the strawberry program's recent loss of funding, the university should consider allocating more of the strawberry program's patent income back to the program itself.

UC Davis Actions

UC Davis is committed to the success of the strawberry program and will ensure the strawberry program is adequately funded. UC Davis will make certain the strawberry program is sustained and continues to serve the strawberry industry. The strawberry program has not been in deficit, and as of April 30, 2015 it had approximately a \$1 million surplus.

A number of different funding sources are used to support the strawberry program, royalty funds being only one such source. Revising our royalty distribution model to favor the strawberry program over other University programs is not consistent with the University's funding approach. Yet we will consider all funding options for the strawberry program that include the discretionary patent income allocated to the Department and College dean's office.

Ms. Elaine M. Howle, CPA
May 22, 2015
Page 4

2. Reassess royalty rates

The mission of the University is not to maximize revenues, but to work collaboratively with all areas of California agriculture to provide research, education and support as mandated by its land grant origins.

Report Recommendation

UC Davis should regularly reassess the appropriateness of the strawberry program's royalty rates charged to licensees and adjust the rates as needed to support the program.

UC Davis Actions

UC Davis will: (a) continue to assess the appropriateness of the strawberry program's royalty rates in view of input from the California Strawberry Commission, licensees, and other industry members and in light of its mission as a public land grant university; (b) memorialize these assessments in annual written reviews; and (c) adjust royalty rates if and when appropriate based on market conditions and the assessment described in (a) above. We anticipate the annual written reviews will be completed by December 31 of each year.

B. "The Department Has Not Always Developed or Used a Budget to Monitor the Strawberry Program"

We agree that the University has not routinely prepared an annual budget specific to the strawberry program. The periodic budgets developed were used for planning purposes rather than as a monitoring tool. The financial condition of the strawberry program was monitored as part of the overall monitoring of the Department. While we feel there was sufficient awareness and oversight of the strawberry program's financial condition we do find value in the best business practices you recommend.

Report Recommendation

The department should prepare a balanced budget for each fiscal year that details how it will fund the strawberry program. In addition, it should begin comparing actual income and expenses to the budget periodically to ensure that the program is operating in a cost efficient manner and is adequately funded.

UC Davis Actions

The new strawberry program faculty breeder was hired February 1, 2015. During the past few months, the new breeder has been traveling throughout the state of California to meet strawberry growers, shippers, processors, and members of the California Strawberry Commission. The new breeder has also met with other UC Davis faculty and staff involved with strawberry research. He has toured and examined strawberry research facilities both at the UC Davis campus and the one leased by UC Davis in central California. He has also met with scientists at the United States Department of Agriculture Germplasm facilities. This extensive initial effort is necessary for the new breeder, in conjunction with the Department and the College, to determine the scope of the strawberry program going forward. Once the scope of the program is determined a budget will be developed. The budget will be updated each year thereafter. We will continue to ensure the strawberry program operates in a cost efficient manner and actual expenses will be compared to budget periodically.

Ms. Elaine M. Howle, CPA
May 22, 2015
Page 5

Report Recommendation

To better enable it to effectively monitor and report the financial condition of the strawberry program, UC Davis should implement its plan to begin accounting for the strawberry program’s financial activities separately from those of the breeder in fiscal year 2015-2016.

UC Davis Actions

This was identified in the UC Davis internal audit. The resulting action plan calls for the establishment of unique organizational codes for the strawberry program and its breeder. The Department will implement its plan to begin accounting for the strawberry program’s financial activities separately from those of the breeder in fiscal year 2015-16.

II. “The University Missed Opportunities to Collect Strawberry Program Revenues”

As a research university with a public and land-grant mission, UC Davis’ primary objective is not the maximization of revenues. As at all other universities, public and private, land-grant and non-land-grant, the University’s mission is to maximize the public good through education, training, and research. An important aspect of the societal benefit derived from research performed at the University is the commercialization of this research with the objective of driving economic prosperity in our local, regional, state, national, and global communities. Effective commercialization with this focus on public benefit entails working with licensees in a manner that is supportive of their commercial and business needs rather than one focused on being punitive or directed towards extracting the maximum possible economic benefit from one or more licensees. While we do seek to enforce contractual obligations, in practice we take a fair, equitable, consistent, and good-faith based approach to working with our licensees.

This reasonable and longstanding business practice impacts enforcement of licensee obligations and how we implement payment plans that are designed to encourage receipt of owed revenues by the University in a manner that does not result in the unintended consequence of potentially driving California-based businesses into insolvency. Additionally, the university’s approach is informed by the fact that its strawberry program is unique in the longevity and robustness of its success in supporting the economic vitality of an important segment of California’s agricultural industry, providing financial benefit to farmers, and enabling significant revenue generation for the University and its inventors. In this context, it should be evident that maintaining a relationship that is based on fair and equitable dealings with licensees and businesses has proved economically beneficial to all relevant stakeholders in contrast to an alternative approach that might have been based on the short term maximization of revenues in isolation of other considerations and, in our judgment, has enhanced the finances of the strawberry program and furthered its interest of promoting California agriculture.

Report Recommendation

UC Davis should collect all late fees that are owed by its licensees.

UC Davis Action

UC Davis’ historical practice of waiving late fees appropriately fostered the development of positive working relationships with our strawberry industry partners. UC Davis will continue to maintain the contractual right to collect late fees and will retain its discretionary ability to waive that right. We will consider, on a case by case basis, whether to assess late fees so long as doing so will not jeopardize long term relationships with licensees. UC Davis will develop a process to document, on a case by case basis, these collection efforts and

Ms. Elaine M. Howle, CPA
May 22, 2015
Page 6

decisions. We anticipate this process will be fully implemented during fiscal year 2015-2016.

Report Recommendation

If the university considers providing future discounts on royalty rates, it should structure its agreements to ensure that the university receives a commensurate benefit during the entire time that licensees receive discounts.

UC Davis Action

We agree with this recommendation.

Report Recommendation

UC Davis should develop a risk-based audit plan to begin periodically reviewing the financial records of its master licensees and licensed nurseries to ensure that they are accurately reporting all of their sales of licensed strawberry varieties and paying the university all the royalties it is entitled to. To encourage compliance, UC Davis should notify all master licensees and licensed nurseries that it will begin auditing the sales records of selected licensees.

UC Davis Action

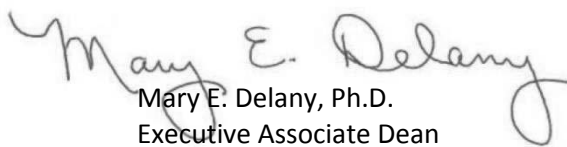
UC Davis will continue to retain its contractual right to audit its licensees. In line with the UC Davis internal audit action plan, during fiscal year 2015-2016 we will complete a cost-benefit analysis of implementing a licensee auditing program. Subject to the results of this cost-benefit analysis, we will develop an appropriate risk-based audit plan calling for either (a) periodic auditing of licensees as appropriate, or (b) case by case auditing of licensees as needed. For both periodic and as needed auditing, UC Davis' decision whether to audit will be in view of licensee reporting, field representative input, input from others in the strawberry program, and cost-benefit considerations associated with auditing.

④

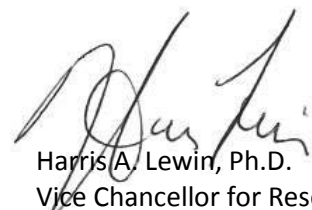
As the right to audit clause already exists in current licensee agreements we disagree that UC Davis should notify all licensees that it will begin auditing the sales records of selected licensees, and respectfully decline to implement this particular action.

Thank you for the opportunity to comment on the draft audit report. We appreciate the time and effort that went into this audit.

Sincerely,



Mary E. Delany, Ph.D.
Executive Associate Dean
College of Agricultural and Environmental Sciences



Harris A. Lewin, Ph.D.
Vice Chancellor for Research

Comments

CALIFORNIA STATE AUDITOR'S COMMENTS ON THE RESPONSE FROM THE UNIVERSITY OF CALIFORNIA, DAVIS

To provide clarity and perspective, we are commenting on the University of California, Davis' (UC Davis) response to our audit. The numbers below correspond to the numbers we have placed in the margin of UC Davis' response.

UC Davis states that it cannot determine whether the University of Florida (Florida) royalty revenue distribution model would be a better methodology for it to use because there are many unknown variables at Florida that may not compare to UC Davis. However, in its 2007 assessment of the Strawberry Breeding Program's (strawberry program) royalty rates, which we describe on page 23, UC Davis identified Florida as an industry peer that used a similar royalty model that made it suitable for purposes of comparing royalty rates. In addition, our only purpose in describing Florida's distribution model within our report is to provide an example of a similar strawberry breeding program that uses a different methodology for allocating its patent income. As we describe on pages 21 and 22, Florida allocates a larger portion of strawberry patent income back to the strawberry breeding program, which was sufficient to cover 100 percent of its breeding operation expenses in fiscal year 2012–13.

①

UC Davis' response suggests that it has been regularly assessing the strawberry program's royalty rates; however, as we describe on page 23, it was unable to demonstrate that it has performed such an assessment since 2007.

②

As we state on page 28, over a three-year period, UC Davis did not collect approximately \$157,000 in interest charges from three licensed nurseries and a master licensee for late royalty payments. By choosing not to pursue collecting late payment fees, UC Davis is missing opportunities to collect revenues that could be used to support the strawberry program. Given the strawberry program's recent loss of funding, we continue to believe that UC Davis should collect all late fees that its licensees owe.

③

Although the right to audit clause exists within the university's current licensing agreements, UC Davis has never performed such an audit, as we describe on page 29. Thus, we firmly believe that UC Davis should notify all licensees that it will begin auditing the sales records of selected licensees. Moreover, we believe that this notification may have the additional benefit of encouraging licensees to report accurate sales amounts.

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