

The Economics of Land Use



A Study of the Economic and Fiscal Impact of the University of California, San Francisco



Prepared for:



University of California
San Francisco

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June 2010

Final Report

EPS #19049

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1. INTRODUCTION AND SUMMARY OF FINDINGS

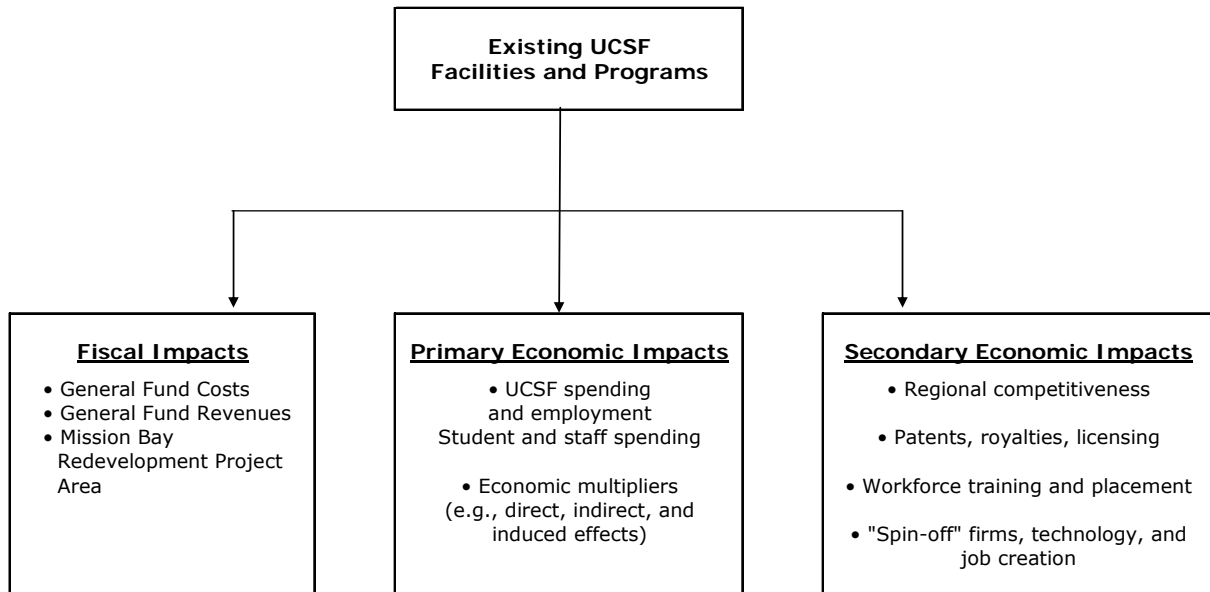
Introduction

This report assesses the variety of fiscal and economic effects that the University of California, San Francisco (UCSF) has within San Francisco and the broader Bay Area, including its academic, research, and medical functions. Although UCSF has previously sponsored studies on these topics, this analysis updates and expands upon prior analyses to reflect new programming information and economic conditions. UCSF retained Economic & Planning Systems (EPS) to evaluate three discrete categories of impacts relevant to UCSF, as described below and summarized in **Figure 1**.

- **Primary Economic Impacts.** The primary economic impact of a university and/or research institution derives from its local and regional spending and those of its faculty, staff and students. Specifically, UCSF and its employees and students purchase goods and services in the local economy which, in turn, create a “ripple” effect throughout the economy as local businesses expand and hire new workers and generate successive rounds of spending. These primary economic impacts can be quantified using input-output (I/O) analysis based on economic multipliers that quantify “direct,” “indirect,” and “induced” effects on local and regional output and employment.¹
- **Secondary Economic Impacts.** The secondary economic impacts of a university and/or research institution stem from its role in enhancing the overall competitiveness of a region by providing specialized research and a highly educated workforce. Specifically, by hiring and training highly skilled individuals and investing in specialized research activities, UCSF helps support a business environment conducive to economic innovation, growth, and diversification, especially in the life sciences sector. Although these secondary economic impacts are generally more difficult to quantify in terms of variables such as jobs or output, a variety of “proxy” measures can be utilized. Examples include patent, royalty and licensing activity, workforce training and employment, and firm creation through UCSF inventions and the entrepreneurial activity of its faculty.
- **Fiscal Impacts.** Universities and/or research institutions rely on the public services and facilities of the jurisdictions in which they reside but also generate tax revenues to help pay for them. UCSF’s net fiscal impact is the difference between the City and County of San Francisco (hereafter “City”) General Fund costs associated with providing necessary public services and facilities (e.g., public safety, recreation services, etc.) and the General Fund revenues generated by UCSF facilities, students, and staff. Although UCSF facilities are exempt from property tax, its students, staff, and visitors generate a variety of other tax revenues, including sales, hotel, and business license taxes.

¹ “Direct” impacts refer to the economic effects of total UCSF direct employment and spending. “Indirect” impacts represent economic effects on industries that supply UCSF. “Induced” impacts represent economic effects on all local industries as a result of the new personal spending by employees in the direct and indirect categories generated by UCSF.

Figure 1. Diagram for UCSF Fiscal and Economic Impacts Study



Report Organization

This report includes seven chapters that describe the methodology and results.

- **Chapter 1** provides an introduction to the analyses contained in the report, describes report organization, presents a brief overview of UCSF, and summarizes the key findings of the study.
- **Chapter 2** is an introduction to UCSF and its people and operations.
- **Chapter 3** describes the analysis of UCSF's primary economic impacts.
- **Chapter 4** provides the description and results of the secondary economic impact analysis.
- **Chapter 5** contains the key assumptions and methodology for the fiscal impact analysis
- **Chapter 6** presents the fiscal impact analysis.
- **Chapter 7** contains an evaluation of UCSF's impact on the Mission Bay South Redevelopment Project Area and the Community Facilities Districts contained in the Project Area.

In addition, there are three appendices. **Appendix A** presents a list of figures and tables. **Appendices B** and **C** provide detailed data and calculations relevant to the primary and secondary economic impacts, respectively.

UCSF Background and Mission

The University was founded in 1864 as Toland Medical College in San Francisco and became affiliated with the University of California (UC) in 1873. UCSF is the only UC campus exclusively dedicated to health sciences. Unlike other UC campuses, UCSF does not offer undergraduate programs; rather, it focuses on professional training with four schools in the areas of Dentistry, Medicine, Nursing, and Pharmacy. It also operates graduate programs with degrees in biological, biomedical, pharmaceutical, nursing, social, and behavioral sciences. In addition to these schools, UCSF has a medical center with two locations: Parnassus Heights and Mount Zion. A third location, a 289-bed women's, children's and cancer hospital complex at Mission Bay, is scheduled to open in 2014.

UCSF is the second largest employer in San Francisco and the fifth largest employer in the nine-county Bay Area. The table below summarizes student enrollment in 2009 by school and 2009 employment by personnel category. UCSF's students and staff work to accomplish UCSF's mission which is "advancing health worldwide."

UCSF Students/Medical Residents and Personnel, 2009

UCSF Students: School	Students/ Medical Residents	% of Students/ Medical Residents
Dentistry	463	10%
Medicine	1,988	45%
Nursing	667	15%
Pharmacy	605	14%
Graduate Division	<u>721</u>	<u>16%</u>
Total Students	4,444	100%
UCSF Personnel	Number	% of Personnel
Full-Time Equivalents (FTE)		
Managers and Senior Professionals	1,366	7%
Academic Employees	4,873	26%
Professional and Support Staff	<u>12,574</u>	<u>67%</u>
Total FTE Personnel	18,812	100%
Head Count (Full-Time and Part-Time Employees)		
Managers and Senior Professionals	1,540	7%
Academic Employees	5,698	26%
Professional and Support Staff	<u>14,665</u>	<u>67%</u>
Total Personnel	21,903	100%

Source: University of California, Office of the President (UCOP) – Table 1a: Enrollment by Campus, Level, and Gender: General Campus and Health Sciences Combined (<http://www.ucop.edu/ucophome/uwnews/stat/statsum/fall2009/statsumm2009.pdf>).

UCSF is also one of the top biomedical research enterprises in the world. Scientists in basic research laboratories study the genetic, molecular, and cellular basis of diseases, while others carry out epidemiological, behavioral, and clinical-research studies, all working to develop improved treatments and cures. The quality and breadth of this research has led to UCSF scientists being among the most prolific publishers of scientific discoveries worldwide.

UCSF also provides clinical services to San Francisco General Hospital (SFGH) under terms covered in an affiliation agreement. All SFGH physicians are UCSF faculty and combined almost 2,000 UCSF physicians, specialty nurses, health care professionals and other professionals work side by side with 3,500 City employees at SFGH. Most UCSF faculty based at SFGH are from the School of Medicine and provide patient care, research, and teaching at all levels for many UCSF learners. In addition, to help meet the health needs of the City's most vulnerable populations, UCSF has established clinics around San Francisco and provides staff for other existing clinics. Examples of these efforts include St. Anthony Free Medical Center, UCSF School of Dentistry Buchanan Dental Center, and Glide Health Services.

Summary of Findings

1. *As the second largest employer in San Francisco behind the City itself, and the fifth largest in the nine-county Bay Area, UCSF has a significant primary economic impact in terms of job creation, wages, and industry spending.²*

UCSF's primary economic impacts result from the spending by its 21,903 employees, 4,444 students, 3,910 retirees, and overnight visitors as well as the purchases of goods and services by UCSF itself. These direct economic activities, as summarized in **Table 1** and **Figure 2**, have "indirect" and "induced" economic impacts in San Francisco and the broader region in the form of increased jobs, output, and employee compensation in a variety of industries that supply goods and services to UCSF and its affiliated population.

Table 1. Economic Activities

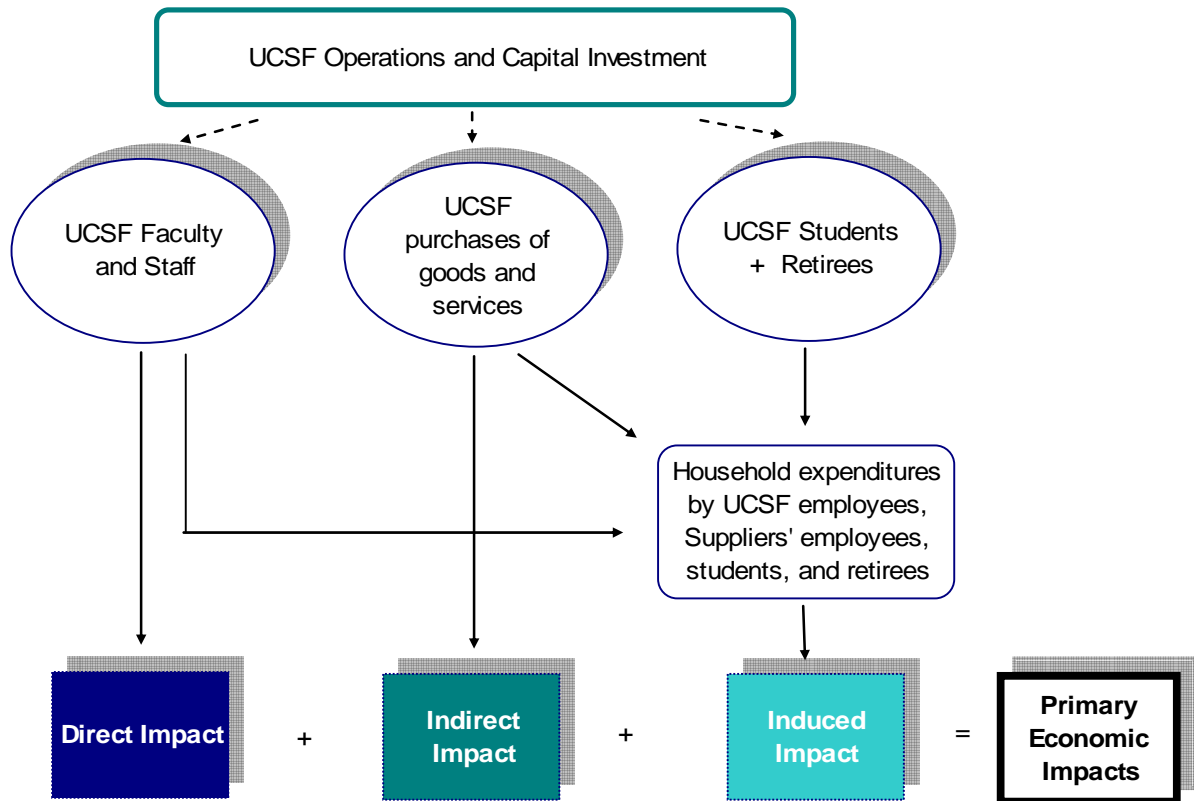
Impact Category	San Francisco	Total
UCSF Employees		
Headcount (full- and part-time)	20,808	21,903
Full-Time Equivalent	17,872	18,812
Students	3,289	4,444
Retirees	1,657	3,910
Wages	\$1,430,000,000	\$1,780,000,000
Construction Expenditures (Annual)		
2008/2009	\$320,000,000	\$320,000,000
Average for the last 10 years	\$180,000,000	\$180,000,000

As summarized in **Table 2**, UCSF's primary economic impacts are estimated to total 32,110 jobs, \$4.67 billion in industry output, and \$2.20 billion in employee compensation in San Francisco in FY 2008-09 (similar calculations are provided for the nine-county Bay Area³). In terms of employment, UCSF's primary economic impact represents 5.6 percent of San Francisco's total employment. As an indicator of relative scale, the entire financial services industry, one of San Francisco's largest, accounts for about 5 percent of all City jobs. It is important to note that because UCSF is primarily funded through a variety of State and federal sources, the economic impacts quantified herein have historically been relatively stable and less subject to the vicissitudes of the private sector business cycle.

² Note that UCSF, together with the University of California, Berkeley (UCB), would represent the largest employer by far in the San Francisco Bay Area.

³ The nine-county Bay Area refers to the counties which ring San Francisco Bay and are members of the Association of Bay Area Governments (ABAG), a regional organization. The nine counties are San Francisco, Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, and San Mateo.

Figure 2. Primary Economic Impacts Illustration



2. *In addition to the primary economic impacts that can be directly translated into jobs and spending, UCSF also generates a myriad of secondary economic impacts that, although more difficult to quantify, generally have a more fundamental and pervasive effect on the economic competitiveness of San Francisco and the broader region.*

Secondary economic impacts of a university, hospital, and research institution such as UCSF stem from its role in enhancing the overall competitiveness of a region by funding innovative specialized research and the development of a highly educated workforce. There is ample evidence that a premier research and medical institution such as UCSF can spawn everything from clusters of ancillary and support-related businesses and services (e.g., private doctors offices or medical supply firms), to small research and development (R&D) -related start-ups, to entire industry sectors.

This analysis has identified the following three discrete but highly interrelated categories that are most applicable to UCSF's secondary economic impacts:

1. **Innovation and Technology Leadership.** As a premier research and medical institution, UCSF is directly responsible for numerous innovations and scientific discoveries with practical applications in a variety of fields. Most notably, UCSF research

Table 2
Summary of Primary Economic Impacts
UCSF Economic and Fiscal Impacts Analysis; EPS #19049

Expenditure Category	Assumption / Model Input ¹	Total Impact in: ²	
		San Francisco County	Nine-County Bay Area
I. Employment			
UCSF Operations	20,808 UCSF Employees	30,108	35,984
UCSF Construction	\$180,000,000 Avg. / Year	1,500	1,600
UCSF Student Spending	4,444 Students (74% in SF)	182	530
UCSF Retiree Spending	6,816 Retirees (24% in SF; 57% in Bay Area)	320	1,020
Total		32,110	39,134
% of County / Bay Area Total		5.6%	1.1%
II. Industry Output			
UCSF Operations	20,808 UCSF Employees	\$4,290,000,000	\$5,590,000,000
UCSF Construction	\$180,000,000 Avg. / Year	\$288,000,000	\$330,000,000
UCSF Student Spending	4,444 Students (74% in SF)	\$31,000,000	\$96,400,000
UCSF Retiree Spending	6,816 Retirees (24% in SF; 57% in Bay Area)	\$57,000,000	\$176,000,000
Total		\$4,666,000,000	\$6,192,400,000
% of County / Bay Area Total		4.4%	0.8%
III. Employee Compensation			
UCSF Operations	20,808 UCSF Employees	\$2,050,000,000	\$2,640,000,000
UCSF Construction	\$180,000,000 Avg. / Year	\$117,000,000	\$126,000,000
UCSF Student Spending	4,444 Students (74% in SF)	\$9,000,000	\$31,100,000
UCSF Retiree Spending	6,816 Retirees (24% in SF; 57% in Bay Area)	\$20,000,000	\$58,000,000
Total		\$2,196,000,000	\$2,855,100,000
% of County / Bay Area Total		5.7%	1.3%

(1) Describes the data input used to in the I/O model to calculate total employment, output, and compensation.

(2) Based on economic multipliers that include "direct," "indirect," and "induced" economic impacts.

continues to advance a wide range of life sciences-related sectors, such as biotechnology and medical equipment, that provide economic benefits to producers and consumers in the form of new and improved products and more effective delivery of services.

2. **Creation of “Spin Off” Firms and Ancillary Businesses.** Both anecdotal information and more academic research suggests that UCSF, similar to other major research and medical institutions, is directly linked to the creation of R&D-related start-ups or spin-off firms as well as clusters of ancillary and support-related businesses and services (e.g., private doctors offices or medical supply firms). Again, these activities provide direct economic benefits, in the form of increased jobs and output within the Bay Area and beyond.
3. **Professional Relationships and Knowledge Transfer.** In addition to discrete scientific innovation and firm creation, UCSF’s cadre of elite scientists and researchers participate in a wide range of formal and informal networks and professional relationships that contribute to the type of information diffusion and knowledge transfer critical to the success of the biotech field. In addition, UCSF’s four professional schools and its graduate programs provide a reliable supply of well-trained professionals for life sciences firms seeking to acquire new talent and expertise.

Specific metrics related to UCSF:

- UCSF has consistently ranked in the top two or three in total R&D expenditures nationwide, behind Johns Hopkins and the University of Wisconsin, Madison, in total R&D spending and number one in life sciences over the last five years.⁴ Perhaps even more notable, available data suggest that UCSF is one of the single most prominent R&D institutions in the San Francisco Bay Area in terms of total spending in both the public and private sector. Specifically, EPS estimates that UCSF accounts for about 17 percent of the total R&D spending in San Francisco and 4 percent in the nine-county Bay Area.
- UCSF has consistently ranked as one of the top five recipients of National Institutes of Health (NIH)⁵ funding while its individual professional schools often rank number one. For example, in both 2008 and 2009 UCSF ranked second in overall funding behind Johns Hopkins University while the school of Pharmacy ranked first. Meanwhile, the School of Dentistry, School of Medicine, and School of Nursing ranked second.
- The University of California as a whole was the leading biotechnology patenting organization in the U.S. from 1977 to 2003 with approximately 1,585 patents; UCSF accounted for about 95 percent of the UC total. Moreover, data from the National

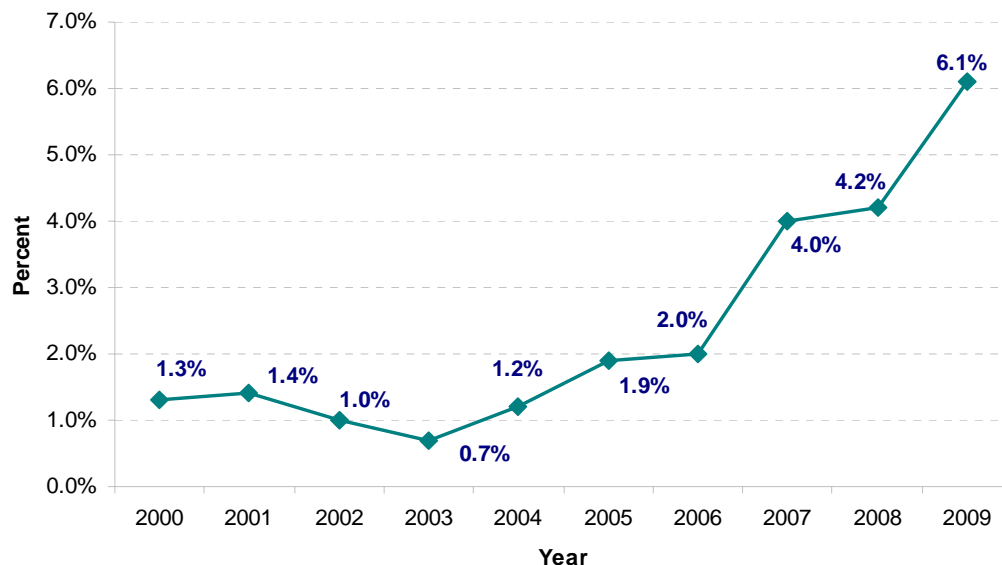
⁴ R&D expenditures are generally specifically identified as such and expended for activities specifically organized to produce research outcomes. These activities are either commissioned by an agency external to the institution or are separately budgeted by an organizational unit within the institution. It is generally distinguished from academic spending.

⁵ NIH is the primary federal agency for conducting and supporting medical research. NIH annually invests over \$28 billion in medical research. More than 83 percent of NIH’s funding is awarded through competitive grants.

Science Foundation suggest that UCSF alone accounts for about 6 percent of the total academic licensing revenue in the U.S.

- UCSF has been the source of 66 biotech start-ups (e.g., new pharmaceuticals, biotechnology, Medical Device firms) and has helped “incubate” another 27 firms at its Mission Bay campus.
- UCSF graduates from UCSF professional schools and graduate programs also serve as an important resource for the biotechnology sector and UCSF Alumni Association data suggest that students exhibit a high propensity to remain in California, and especially the Bay Area after graduation. Specifically, over half (55 percent) remain in the Bay Area and 75 percent in the State.
- Another potential indication of UCSF’s positive impact on the biotechnology industry is the increasing growth of this cluster in San Francisco. As shown on Figure 3, the percentage of San Francisco’s share of Bay Area occupied biotech space has increased significantly over the past few years, from 1.3 percent in 2000 to 6.1 percent in 2009. UCSF alone accounts for more than half of all life sciences-related building space in San Francisco with about 1.7 million square feet dedicated to research uses. In addition, average lease rates for biotech building space in San Francisco have increased significantly in the past few years, and currently far exceed other Bay Area locations. Although a number of factors can account for this phenomenon, the timing suggests that the development of the Mission Bay campus has been a significant catalyst. The first building at the Mission Bay campus, Genentech Hall, opened in 2003.

Figure 3. San Francisco’s Share of Bay Area Biotech Space



3. From a fiscal perspective, UCSF has a positive impact on the City and County of San Francisco General Fund budget.

UCSF generates about \$4.89 million in revenues and \$4.17 million in costs to the City’s General Fund, resulting in a positive net fiscal impact of roughly \$720,000 annually. This

positive net benefit represents about 15 to 17 percent of the City budget associated with UCSF. However, it represents less than 1 percent of the total San Francisco General Fund budget.⁶

UCSF is an entity of the State, and like all governmental agencies and nonprofit organizations, UCSF is exempt from property taxes and a variety of other local taxes. Yet the University generates a significant amount of sales and use tax for San Francisco—both from its own purchases and the purchases of students and staff during the school/workday—as well as hotel, payroll and parking taxes.⁷ The largest cost items attributed to UCSF are for the Fire Department and the Municipal Transportation Agency (MTA), which runs the Municipal Railway, Muni. See **Table 3** for summary of results.

Table 3. Summary of Fiscal Impacts

Item	Total
Revenues	
Sales and Use Tax	\$1,512,000
Intergovernmental	\$820,000
Hotel Tax	\$1,012,000
Business Taxes [1]	\$904,000
Fines, Licenses, Permits (Including Parking Tax)	\$641,000
Property Taxes	<u>\$0</u>
Total Revenues	\$4,889,000
Costs	
Fire	\$900,238
Police and Other Public Protection Services	\$667,762
Pub. Works, Transp, & Cmmrc. (Including Muni)	\$1,294,000
Human Welfare and Neigh. Dev.	\$393,000
General City Resp.	\$622,000
Culture and Recreation	\$156,000
General Admin. and Finance	\$136,000
Community Health	<u>\$0</u>
Total Costs	\$4,169,000
Net Fiscal Impact	\$720,000

[1] Includes Payroll Taxes for the Construction industry related to UCSF average annual capital expenditure.

⁶ This overall fiscal impact represents a “snapshot” from all UCSF-related programs, activities, and facilities on an aggregate level. It does not represent the fiscal impact of individual or incremental programs, activities, and facilities. These individual or incremental impacts should be evaluated on a case-by-case basis.

⁷ While the University is exempt from paying payroll taxes for its employees, its substantial capital outlays have supported a significant amount of construction labor and the payroll tax from those projects are attributed to UCSF. In addition, while the University’s parking garages are not subject to the parking tax, a portion of UCSF’s employees and students pay this tax when parking in non-UCSF parking facilities as part of their UCSF commute.

4. UCSF contributes funds toward infrastructure and public open space at the Mission Bay Redevelopment Project Area.

UCSF has provided or has committed to make payments to support public improvements and ongoing maintenance in the Mission Bay Redevelopment Project Area consistent with its agreements with the Redevelopment Agency and the Master Developer of Mission Bay.

The Redevelopment Agency currently receives about \$8.2 million in tax increment revenues from the Mission Bay South Project Area to finance public improvements in the Project Area. In addition to this financing source, the Project Area has two Community Facilities Districts (CFDs) that fund infrastructure and maintenance. While UCSF is exempt from property taxes and the original portion of the UCSF Mission Bay campus is not included in the CFD boundaries, portions of subsequently acquired land for the Mission Bay campus are subject to the CFDs. In addition, UCSF has made several commitments to the improvements needed to support its own expansion:

- **Capital.** UCSF committed to fund about \$60 million worth of public improvements (e.g., for public streets, utilities, and open space). Of this amount, \$35 million has already been paid with subsequent payments expected as the campus development is completed and as the hospital site is built.
- **Ongoing.** In addition, UCSF has made payments of about \$4.1 million to date for park/open space maintenance; ongoing payments continue as the full UCSF-planned development is built out.

2. OVERVIEW OF UCSF

This chapter presents an overview of UCSF's programs, facilities, staff, and students. The information provides a basis for evaluating UCSF's economic and fiscal impacts in subsequent chapters.

UCSF Background and Mission

The University was founded in 1864 as Toland Medical College in San Francisco and became affiliated with UC in 1873. UCSF is the only UC campus exclusively dedicated to health sciences. Unlike other UC campuses, UCSF does not offer undergraduate programs; rather, it focuses on professional training with four schools in the areas of Dentistry, Medicine, Nursing, and Pharmacy. It also operates graduate programs with degrees in biological, biomedical, pharmaceutical, nursing, social, and behavioral sciences. In addition to these schools, UCSF has a medical center with two locations: Parnassus Heights and Mount Zion. A third location, a 289-bed women's, children's, and cancer hospital complex at Mission Bay, is scheduled to open in 2014.

UCSF's students and staff work to accomplish UCSF's mission which is "advancing health worldwide." The University's goals underpinning this mission are to:⁸

- Develop the world's future leaders in health care delivery, research and education.
- Be a world leader in scientific discovery and its translation into exemplary health.
- Provide high-quality, patient-centered care leading to optimal outcomes and patient satisfaction.
- Educate, train and employ a diverse faculty, staff and student body.
- Provide a supportive and effective work environment to attract and retain the best people and position UCSF for the future.
- Serve our local, regional and global communities and eliminate health disparities.

UCSF Facilities and Locations

UCSF facilities are largely situated within San Francisco and cover about 185 acres. UCSF has three campus sites in San Francisco: at Parnassus Heights, Mission Bay, and Mount Zion. In addition, major programs and departments are located at 15 other sites throughout the City, plus San Francisco General Hospital and the Veterans Affairs Medical Center, as illustrated in **Figure 4**. UCSF facilities include its hospitals, instruction space, conference centers, office space, and almost 900 on-campus housing units.

⁸ From UCSF Institutional Profile 2009.

Figure 4. UCSF's Locations in San Francisco



- | | | |
|---------------------------|--|---------------------------------|
| 1 Parnassus Heights | 8 Hunters Point | 14 220 Montgomery Street |
| 2 Mission Bay | 9 Oyster Point | 15 1930 Market Street |
| 3 Mount Zion | 10 San Francisco General Hospital (Affiliation) | 16 982 Mission Street |
| 4 Laurel Heights | 11 Veterans Affairs Medical Center (Affiliation) | 17 2300 Harrison Street |
| 5 Buchanan Dental Clinic | 12 185 Berry Street | 18 2727 Mariposa Street |
| 6 Mission Center Building | 13 50 Beale Street | 19 3360 Geary Boulevard |
| 7 654 Minnesota Street | | 20 250 Executive Park Boulevard |

UCSF Students, Faculty, and Staff

UCSF enrolled 4,444 students in 2009 in its professional schools and graduate programs. UCSF has almost 19,000 full-time equivalent positions and employs 21,900 people. **Table 4** reports student enrollment in 2009 by school and 2009 employment by personnel category (e.g., academic, managers and senior professionals, and professional and support staff which includes most of the hospital and laboratory personnel).

Table 4. UCSF Students/Medical Residents and Personnel, 2009

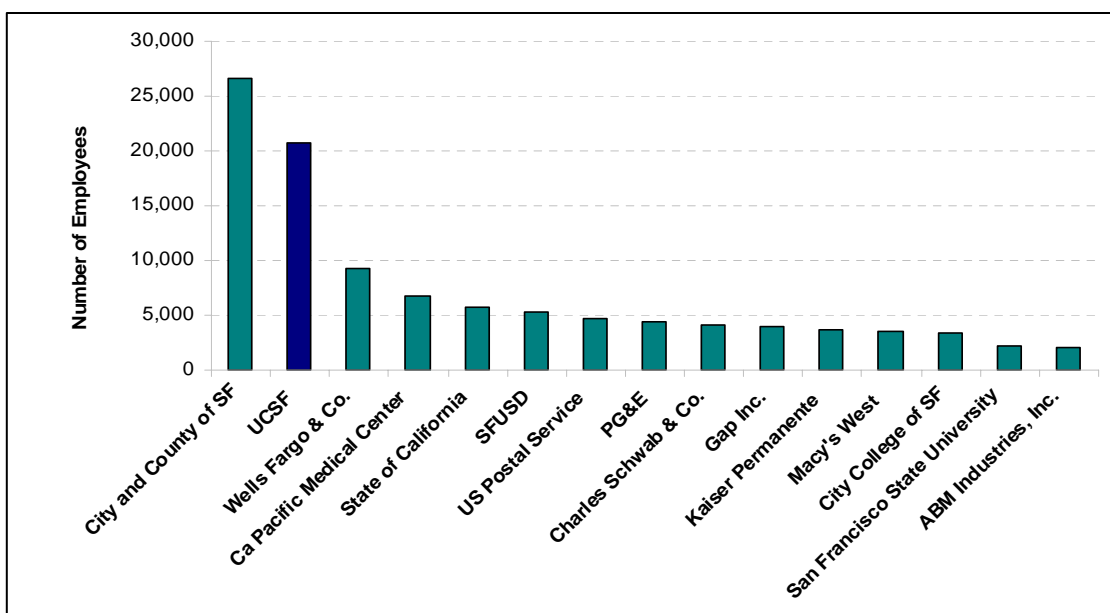
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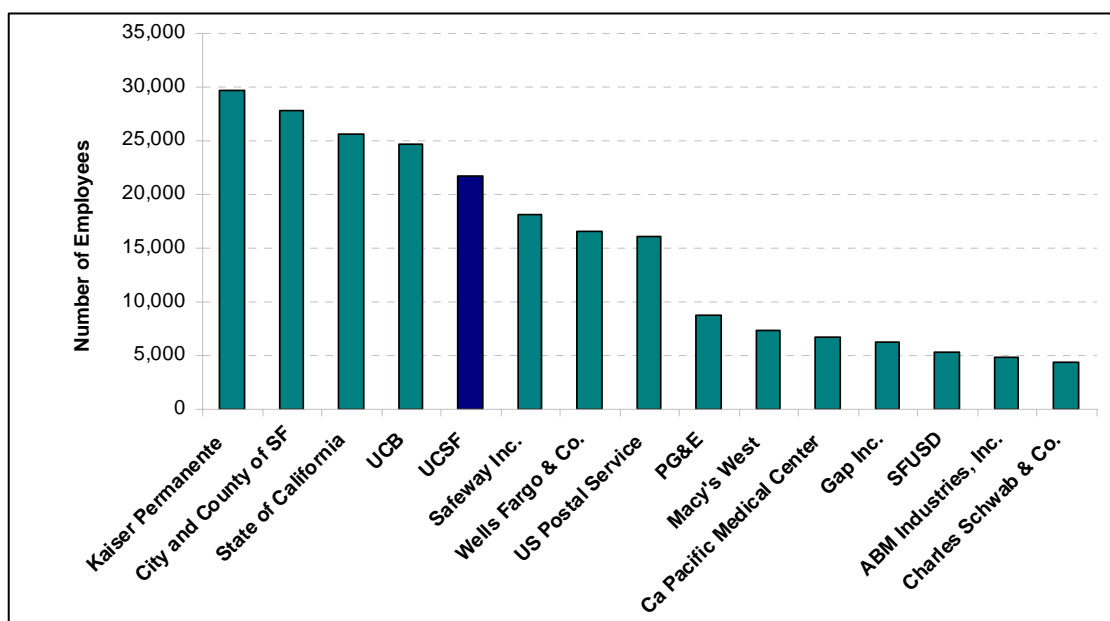
UCSF is the second largest employer in San Francisco and the fifth largest employer in the nine-county Bay Area. **Figure 5** and **Figure 6** show other large employers in San Francisco and the nine-county Bay Area (Bay Area).

Figure 5. Top Employers by Number of Employees in San Francisco, 2009



Source: San Francisco Business Times Book of Lists, 2009

Figure 6. Top Employers by Number of Employees in Nine-County San Francisco Bay Area, 2009



Source: San Francisco Business Times Book of Lists, 2009

UCSF Program Overview

UCSF's primary operations are its educational programs, clinical enterprise (UCSF Medical Center), and UCSF research institutes, centers, and foundations. Its professional and graduate programs and the UCSF Medical Center and UCSF Children's hospital are ranked among the best in the country by *U.S. News and World Report*.

Educational Programs

UCSF's education programs are consistently ranked among the best in the nation and the world. Admissions to all of its programs are very competitive and tend to attract some of the most talented students in the country. Brief facts about each program are provided below.

School of Dentistry

- The School of Dentistry admits 80 students per year into a four-year curriculum which leads to the DDS degree.
- For each student admitted, the school received 19 applications in 2009.
- The school offers postgraduate programs in several dental specialty areas: dental public health, endodontics, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontology, prosthodontics, and a general practice residency.
- Tuition and fees to attend the School of Dentistry are affordable, based on the fact that the school ranks 41st in terms of tuition/fee costs among the 54 U.S. dental schools.
- The School of Dentistry operates the UCSF Oral and Maxillofacial Surgery Clinic, which provides inpatient and outpatient services such as trauma surgery for the jaw and facial bone fractures, surgical correction of maxillofacial skeletal and soft tissue deformities and diagnosis and disease.

School of Medicine

- In 2009, the Medical School received almost 6,000 applications for 150 spaces.
- The school offers professional degree programs and graduate degrees in many fields.
- The school ranks among the top 10 programs in the U.S. in seven of eight medical school specialty programs, including first in AIDS medicine, second in women's health, and third in internal medicine according to *U.S. News and World Report*.
- UCSF's Elizabeth Blackburn, Professor of Biology and Physiology, won the Nobel Prize in 2009 in Physiology or Medicine for co-discovering the enzyme telomerase and showing how telomeres and telomerase protect chromosomes and play a key role in cell aging.
- Stanley Prusiner, Director of the Institute for Neurodegenerative Diseases and Professor of Neurology and Biochemistry at UCSF, discovered prions—infectious agents linked to a number of neurodegenerative diseases, including "mad cow" disease in animals and

- Creutzfeldt-Jakob in humans, earning him the 1997 Nobel Prize in Physiology or Medicine. The research has informed scientists' understanding of Alzheimer's, Parkinson's, and other neurodegenerative diseases.
- J. Michael Bishop, Professor and Director of the G. W. Hooper Foundation and former UCSF Chancellor, and Harold E. Varmus, Professor Emeritus of Microbiology and Immunology at UCSF, discovered that some normal genes, when altered or misexpressed, have the capacity to cause cancer. The two shared the 1989 Nobel Prize in Physiology or Medicine for their discovery.
- The school received \$418 million in NIH funding in 2009, second in the nation for medical schools behind Johns Hopkins University.
- It holds 632 active patents in the United States.

School of Nursing

- The School of Nursing ranked first in the nation in terms of NIH research funding every year from 2003 to 2008.
- The school offers more than 14 master's degree specialties in nursing and an outstanding PhD program.
- Four departments of instruction and research are within the main School: Family Health Care Nursing, Community Health Systems, Physiological Nursing, and Social and Behavioral Sciences.
- An accelerated RN program for 85 students each year draws from a highly competitive nationwide pool (more than 600 applicants in 2009).
- The School of Nursing offers a nurse-midwifery education program that has graduated hundreds of nurse-midwives and has provided more than 12,000 women with midwifery care for their births, about half of which are at San Francisco General Hospital (SFGH). It is also a training site for other advanced nursing students such as nurse practitioners and clinical nurse specialists.

School of Pharmacy

- The School of Pharmacy has ranked first in the nation in NIH research funding for 30 consecutive years.
- The school provides professional degrees in Doctor of Pharmacy (PharmD) and pathways in Pharmaceutical Care, Pharmaceutical Health Policy and Management, and Pharmaceutical Sciences.
- Out of a pool of more than 1,500 applicants in 2009, the school admitted 122 students.
- The school also provides PhD graduate programs in Biology and Medical Informatics, Biophysics, Chemistry and Chemical Biology, Pharmaceutical Sciences and Pharmacogenomics, as well as UCSF/UCB Joint Graduate Group in Bioengineering.

- The School of Pharmacy manages the California Poison Control Center, which consists of four answering sites, including SFGH. The school also regularly works with a multidisciplinary team of pharmacists, physicians and nurse practitioners to answer calls to the National HIV Telephone Consultation Service and the National Clinicians Hotline.

Graduate Division

- The Graduate Division offers graduate degrees in the Biological, Biomedical, Pharmaceutical, Nursing, Social and Behavioral Sciences.
- The division offers 22 degree programs, a high proportion of which are ranked in the top ten, nationally.
- Degrees offered include PhD, Master of Science, Master of Arts, Master of Clinical Research, and Doctor of Physical Therapy.

Medical Center

UCSF operates the UCSF Medical Center, a 722-licensed bed tertiary care referral center with two major sites (Parnassus Heights and Mount Zion). UCSF Medical Center and UCSF Children's Hospital are world leaders in health care, known for innovative medicine and advanced technology. UCSF's expertise covers virtually all specialties, including cancer, heart disease, infertility, neurological disorders, organ transplantation, and orthopedics as well as special services for women and children. Clinical faculty also provide clinical services within and outside of the UCSF Medical Center.

As an academic medical center, UCSF Medical Center is unlike community hospitals in that it offers pioneering treatments not widely available elsewhere. For example, UCSF has the only nationally designated Comprehensive Cancer Center in northern California. The center is dedicated to finding new and better treatments for cancer patients. UCSF also has northern California's only nationally designated Center of Excellence in Women's Health, which offers specialized care and health education for women.

Another area of distinction is UCSF's health services for children and pregnant women. UCSF Children's Hospital is a "hospital within a hospital" with more than 150 specialists in more than 40 areas of medicine. It has programs designed specifically for young patients, including a 50-bed neonatal intensive care nursery, recreational therapy for recovering children and 60 outreach clinics throughout northern California. In the area of neurology and neurosurgery, UCSF Medical Center is among the top five hospitals in the nation. UCSF has one of the largest brain tumor treatment programs in the nation as well as the only comprehensive memory disorders center and the only comprehensive epilepsy center in northern California.

UCSF also has one of the nation's largest centers for kidney and liver transplants. Its AIDS program is the most comprehensive in the nation and its surgical eye care program is the largest in northern California. In the area of orthopedics, UCSF is internationally recognized for treating the spine, including deformities, degenerative disc disease, tumors and fractures. UCSF also has institutes, centers, and foundations dedicated to diseases such as diabetes, lupus, and multiple sclerosis and research on pain, asthma, health improvement and prevention, bioinformatics, smoking/tobacco, stem cell science, addiction/substance abuse, aging, and more.

The Medical Center has approximately 750,000 outpatient visits annually. In addition to medical services, UCSF provides dentistry services amounting to about 121,000 patient visits per year. The campus profile for 2009 reports that patient volumes have increased about 4 percent per year for the last nine years. This has generated demand for additional space. To address this need, as well as to meet new seismic standards for inpatient facilities, UCSF has acquired 14.5 acres in Mission Bay to develop a 289-bed children's, women's, and cancer hospital complex (estimated for completion in 2014).

Research Enterprise

UCSF is one of the top biomedical research enterprises in the world. Scientists in basic research laboratories study the genetic, molecular, and cellular basis of diseases, while others carry out epidemiological, behavioral, and clinical-research studies, all working to develop improved treatments and cures. The quality and breadth of this research has led to UCSF scientists being among the most prolific publishers of scientific discoveries worldwide. The secondary economic impacts of these activities are described further in **Chapter 4**.

UCSF research focuses on treatment for such diseases as cancer, diabetes, HIV/AIDS, and infectious diseases; cardiological and immunological diseases; and such neurological conditions as Alzheimer's disease and Parkinson's disease. The University is a leader in such innovative areas as stem cell science, bioengineering, and pharmaceutical chemistry and was home to the co-discovery of the techniques of recombinant DNA—splicing genes from one organism into another—which spawned a revolution in biology and the birth of biotechnology.

Community Health Clinics

To help meet the health needs of the City's most vulnerable populations, UCSF has established clinics around San Francisco and provides staff for other existing clinics. Examples of these efforts are:

- *St. Anthony Free Medical Center.* The UCSF School of Pharmacy partners with the St. Anthony Foundation to provide needed pharmaceutical care to patients with no health insurance and limited access to health care.
 - Ninety percent of patients at the clinic have incomes below the federal poverty level.
 - St. Anthony Free Medical Clinic sees a diverse patient population—61 percent Latino, 14 percent African America, 15 percent Caucasian, and 9 percent Asian.
- *UCSF School of Dentistry Buchanan Dental Center.* The dental school clinic on Buchanan Street provides comprehensive services to low-income adults and children.
 - The clinic sees approximately 2,700 patients each year, with 10,000 total patient visits.
 - Seventy percent of patients are Latino, African American, Asian, or another ethnic minority.

- *Glide Health Services.* This Tenderloin District community clinic is managed by the UCSF School of Nursing, in cooperation with Glide Memorial United Methodist Church, Catholic Healthcare West, and other community partners. Founded in 1997, the clinic sees 3,000 underserved patients a year in more than 10,000 visits.

UCSF Affiliations

San Francisco General Hospital

San Francisco General Hospital (SFGH) is one of two major hospital affiliations maintained by UCSF (the other is the Veterans Affairs Medical Center). UCSF has been the City's partner in providing patient care at SFGH since 1873. All SFGH physicians at SFGH are UCSF faculty, committed to providing quality, culturally sensitive care to the people of San Francisco. Today, almost 2,000 UCSF physicians, specialty nurses, health care professionals and other professionals work side by side with 3,500 City employees at SFGH.

Most UCSF faculty based at SFGH are from the School of Medicine and provide patient care, research, and teaching at all levels for many UCSF learners. Approximately one-third of UCSF's physician training is conducted at SFGH. The research enterprise encompasses more than 190 investigators and approximately \$100 million a year in research grants. This research helps SFGH provide low-cost, leading-edge care to SFGH patients.

The clinical services that UCSF provides at SFGH are provided under terms covered in an affiliation agreement, which also outlines how UCSF is to be compensated for these services. In recent years, the City's annual compensation to UCSF has not fully covered the cost of services provided. The gap between the cost of services provided and compensation received has been estimated by UCSF at \$6 million a year, under a formula agreed upon by both the City and UCSF. Nonetheless, the affiliation continues to provide mutual benefit to both UCSF and the City and enables the City to provide quality care at a lower cost than providing it directly or contracting with another health care entity.

Veterans Affairs Medical Center

The Veterans Affairs Medical Center (VAMC) is a 124-bed tertiary care teaching hospital in San Francisco that provides a full range of patient care services and world-class research programs. The VAMC includes a 120-bed nursing home and provides outpatient services through clinics located in San Francisco and in four other northern California communities. Patients from these clinics come to San Francisco for hospitalization and for specialty care.

The facility is owned by the Department of Veterans Affairs (VA) and affiliated with all four UCSF schools—Dentistry, Medicine, Nursing, and Pharmacy. More than 240 full- and part-time UCSF physicians are on staff at the VAMC. Additionally, the VAMC is a UCSF teaching hospital. It funds 171 residency positions for UCSF residents who train at the VAMC and provides clinical training for one-third of UCSF medical students.

The VAMC's research enterprise is the largest funded research program in the VA with 180 funded investigators overseeing more than \$77 million a year in expenditures. UCSF PhD faculty also are on staff at the VAMC and integral to both the clinical and research programs.

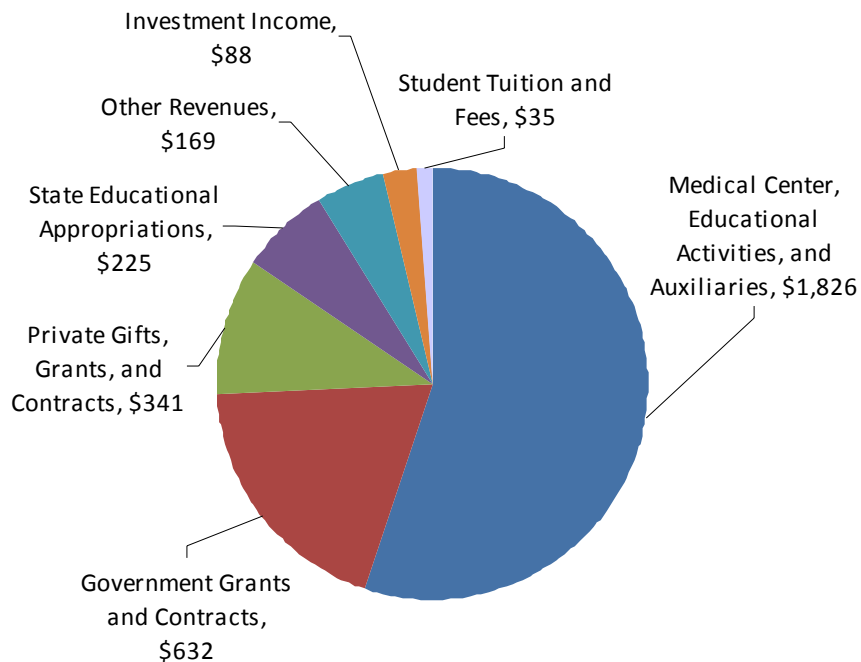
The VAMC provides comprehensive health care through primary care, tertiary care and long-term care in the areas of medicine, surgery, psychiatry, dermatology, physical medicine and rehabilitation, neurology, oncology, dentistry, geriatrics and extended care.

UCSF Budget Overview

UCSF's revenues in FY 2008/09 summed to \$3.3 billion. Nearly half of that amount was derived from the Medical Center's income. About 7 percent of total UCSF revenues are from the State of California appropriations. A portion of UCSF's funding is for services it provides at San Francisco General Hospital (SFGH). More than 2,000 UCSF physicians and staff work at SFGH, along with San Francisco Department of Public Health employees. SFGH is the only trauma center in the City and County of San Francisco.

UCSF expenditures for the fiscal year totaled \$3.2 billion. About half of expenditures were for hospital operations and almost 40 percent went to research, instruction and academic support uses. **Figure 7** and **Figure 8** depict the breakdown of revenues and expenditures, respectively.

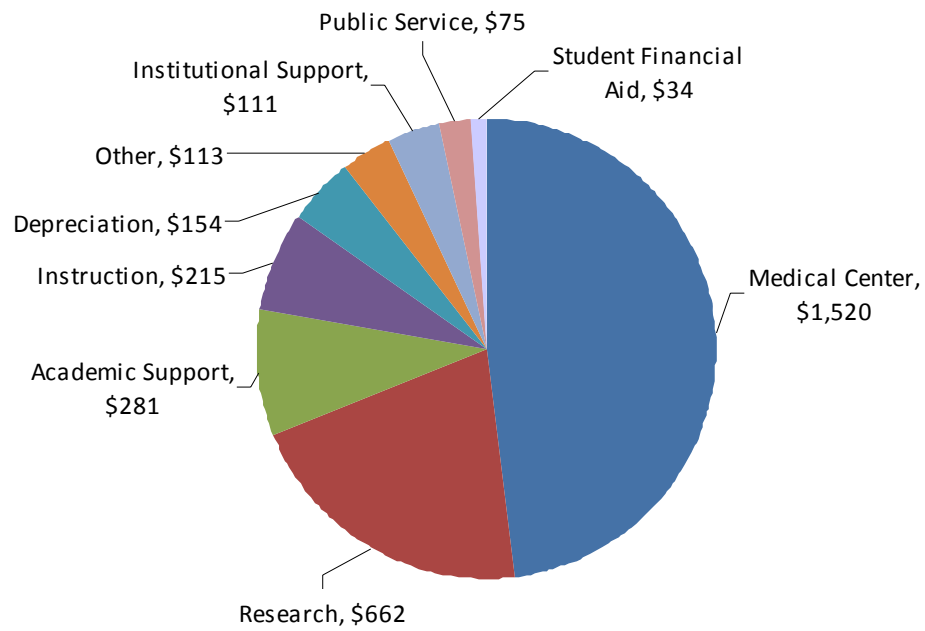
Figure 7. UCSF Revenues Supporting Core Activities, FY 2009, \$3.3 Billion



Pie chart is shown in millions.

Source: UCSF Annual Financial Report, 2009, pg. 7.

Figure 8. UCSF Operating Expenses, FY 2009, \$3.2 Billion



Pie chart is shown in millions.

Source: UCSF Annual Financial Report, 2009, pg. 21.