



College of Natural and Agricultural Sciences Space Benchmarking Analysis

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- Washington State University

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Introduction

STRATUS was retained to conduct a national comparative benchmark study of research space allocation per Tenure-Track Faculty FTE in support of the Academic Plan and Facilities Master Plan Update on behalf of the College of Natural and Agricultural Sciences (CNAS) at the University of California, Riverside (UCR).

Selection of benchmark institutions was based on the Institution's inclusion in the "Top 100" academic institutions in research expenditures as published by the National Science Foundation (2001) survey (please see appendix for complete list); the overall enrollment size of the institution; and its composition of science-related programs and departments. Enrollment sizes ranged from 16,610 to 48,477 students across the selected institutions.

Selected benchmark institutions for this study include:

- Louisiana State University
- Mississippi State University
- North Carolina State University
- Ohio State University
- University of California, Berkeley
- University of California, Davis
- University of California, Irvine
- University of Tennessee
- Virginia Polytechnic Institute and State University
- Washington State University

Data was collected by the following Space Types listed below - assignable square feet (ASF) from 2002-03 space inventory with Room Use Categories as identified by the National Center for Educational Statistics (NCES), Postsecondary Education Facilities Inventory and Classification Manual:

- Research Laboratory/Service (250/255)
- Office Facilities (300-355)

- Study Facilities (400-455)
- Field Building (560)
- Animal Quarters/Service (570/575)
- Greenhouse/Service (580/585)
- Shop/Service (720/725)

For purposes of determining ASF of research space per Tenure-Track Faculty FTE, research space included the following:

- Research laboratories
- Computer laboratories or other departmental space used for research
- Controlled-environment space, such as clean or white rooms
- Technical-support space, such as carpentry and machine shops
- Space for laboratory animals, such as animal production colonies, holding rooms, isolation and germ-free rooms
- Faculty staff offices or graduate student offices, to the extent they are used for research
- Department libraries, to the extent they are used for research
- Facilities containing single pieces of non-fixed equipment, each costing at least \$1 million (i.e. NMR)

Tenure-Track Faculty FTE is defined as Professor, Associate Professor, Assistant Professor appointments, which entail full responsibility for teaching, performing research, advising students, and performing professional and University service, including funded, but vacant positions.

Please note that although data was gathered for Research Laboratory/Service (250/255); Office Facilities (300-355); Study Facilities (400-455); Field Building (560); Animal Quarters/Service (570/575); Greenhouse/Service (580/585); and Shop/Service (720/725); only Research Laboratory/Service (250/255) and Office Facilities (300-355) data when used as the primary space for research, was analyzed for the purposes of this report. All other data was excluded.

Section two of this report presents an analysis of the data gathered with comparative tables and graphs.

Section three contains research findings of general trends in academic science research facilities.

Section four covers recently completed science research facilities across the nation and several slated to be completed in the near future.

The appendix contains survey results by individual institutions; the "Top 100" academic institutions in research expenditures as published by the National Science Foundation (2001) survey; and contacts at each institution surveyed for future reference if needed.

University of California, Riverside

College of Natural and Agricultural Sciences

Table 1: Ratio of Research Space (ASF) per Tenure-Track Faculty FTE by Institution

Table 2: Ratio of Average Research Space (ASF) per Tenure-Track Faculty FTE by Institution (excluding UCR)

Research Space includes Research Laboratory/Service Space NCES Room Use Code 250/255 and Office Facilities Code 300-355 where applicable

UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS														
Table 1: Ratio of Research Space (ASF) per Tenure-Track Faculty FTE by Institution														
Institutions	Total Enrollment	Agricultural Sciences					Biological Sciences				Physical Sciences			
		Botany and Plant Sciences	Entomology	Environmental Sciences	Nematology	Plant Pathology	Biochemistry	Biology	Cell Biology and Neuroscience	Chemistry	Earth Sciences	Mathematics**	Physics	Statistics**
Louisiana State University	32,228	N/A	2,124	1,424	N/A	N/A	1,803	1,803	1,603	1,270	1,085	N/A	311	N/A
Mississippi State University	16,810	1,943	3,588	N/A	N/A	3,588	1,047	660	N/A	1,531	N/A	N/A	142	N/A
North Carolina State University	29,637	595	707	797	1,182	885	1,232	667	1,178	811	624	N/A	418	N/A
Ohio State University	48,477	1,446	2,332	1,273	N/A	1,667	1,709	2,479	N/A	2,603	1,570	N/A	1,353	N/A
University of California, Berkeley	33,145	1,210	742	742	N/A	N/A	N/A	1,308	1,346	1,627	644	40	640	50
University of California, Davis	29,087	1,611	1,112	882	982	2,014	N/A	541	1,169	1,629	442	19	367	14
University of California, Irvine	23,179	N/A	N/A	N/A	N/A	N/A	1,531	690	1,205	2,140	530	N/A	780	N/A
University of California, Riverside*	15,934	1,188	2,098	1,097	971	1,320	1,321	1,045	952	1,944	702	28	855	145
University of Tennessee	27,971	347	22	1,362	22	22	743	911	1,341	878	395	N/A	207	N/A
Virginia Polytechnic Institute and State University	25,645	N/A	455	732	N/A	1,041	1,726	938	N/A	1,878	848	N/A	440	N/A
Washington State University	22,184	2,493	987	301	N/A	1,787	3,712	1,630	3,712	2,673	1,141	N/A	2,186	N/A

UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS														
Table 2: Ratio of Average Research Space (ASF) per Tenure-Track Faculty FTE by Department (excluding UCR)														
Institutions	Total Enrollment	Agricultural Sciences					Biological Sciences				Physical Sciences			
		Botany and Plant Sciences	Entomology	Environmental Sciences	Nematology	Plant Pathology	Biochemistry	Biology	Cell Biology and Neuroscience	Chemistry	Earth Sciences	Mathematics**	Physics	Statistics**
Louisiana State University	32,228	N/A	2,124	1,424	N/A	N/A	1,803	1,803	1,603	1,270	1,085	N/A	311	N/A
Mississippi State University	16,810	1,943	3,588	N/A	N/A	3,588	1,047	660	N/A	1,531	N/A	N/A	142	N/A
North Carolina State University	29,637	595	707	797	1,182	885	1,232	667	1,178	811	624	N/A	418	N/A
Ohio State University	48,477	1,446	2,332	1,273	N/A	1,667	1,709	2,479	N/A	2,603	1,570	N/A	1,353	N/A
University of California, Berkeley	33,145	1,210	742	742	N/A	N/A	N/A	1,308	1,346	1,627	644	40	640	50
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University of Tennessee	27,971	347	22	1,362	22	22	743	911	1,341	878	395	N/A	207	N/A
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Washington State University	22,184	2,493	987	301	N/A	1,787	3,712	1,630	3,712	2,673	1,141	N/A	2,186	N/A
	Total	9,645	12,069	7,513	2,166	11,004	13,503	11,847	11,754	17,040	7,279	59	6,844	64
	Average	1,378	1,341	939	722	1,572	1,688	1,165	1,679	1,704	809	30	684	32

**Data was excluded from all Institutions except that of UC Berkeley, UC Davis and UC Riverside due to inconsistencies in the methodology used for the Departments of Math and Statistics.

Please note the following for the shaded cells:

Louisiana State University: Department of Biochemistry, Department of Biology, and Department of Cell Biology and Neuroscience is combined.

Mississippi State University: Department of Math and Department of Statistics is combined.

Mississippi State University: Department of Entomology and Department of Plant Pathology is combined.

North Carolina State University: Biological Resources Center data is not included here.

Ohio State University: Department of Horticulture and Crop Science; and Central Lab Animal Facilities data is not included here.

University of CA, Berkeley: Department of Entomology and Department of Environmental Sciences data is combined.

University of CA, Berkeley: College of Chemistry data is not included.

University of CA, Irvine: Department of Ecology and Evolutionary Biology data not included here.

University of Tennessee: Department of Entomology, Department of Nematology, and Department of Plant Pathology data is combined.

Washington State University: Department of Biochemistry and Department of Cell Biology and Neuroscience data is combined.

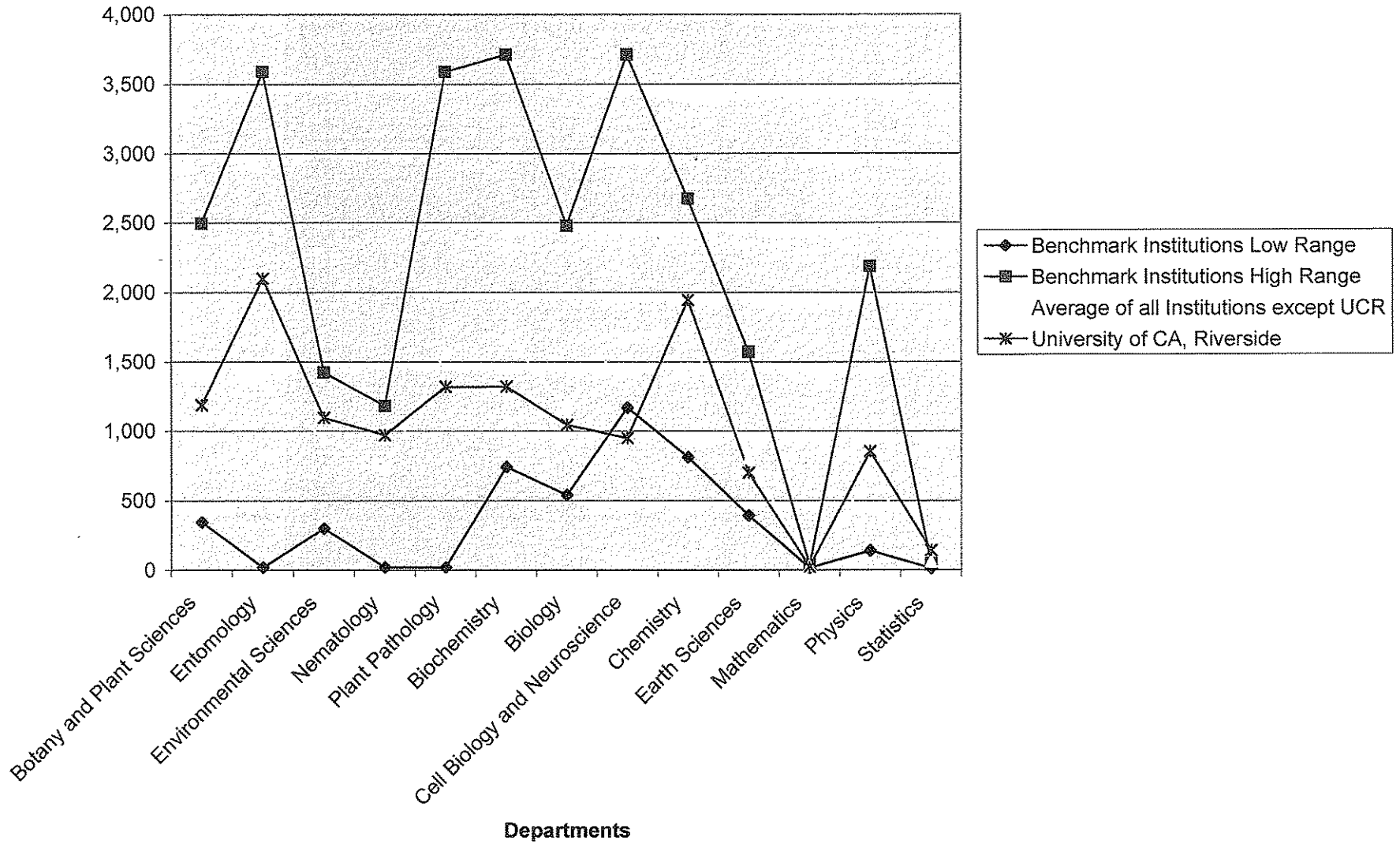
University of California, Riverside
 College of Natural and Agricultural Sciences
 Comparative Table

Low and High Range of Ratios of Research Space (ASF) per Tenure-Track Faculty FTE by Department
 Ratio of Average Research Space (ASF) per Tenure-Track Faculty FTE by Department (excluding UCR)
 Ratio of Research Space (ASF) per Tenure-Track Faculty FTE at UCR by Department

TABLE 3

University of California, Riverside Departments	Benchmark Institutions Low Range		Benchmark Institutions High Range		Average of all Institutions except UCR	University of CA, Riverside*
Botany and Plant Sciences	U of TN	347	WA State U	2,493	1,378	1,188
Entomology	U of TN	22	Miss. State U	3,588	1,341	2,098
Environmental Sciences	WA State U	301	LA State U	1,424	939	1,097
Nematology	U of TN	22	NC State U	1,182	722	971
Plant Pathology	U of TN	22	Miss. State U	3,588	1,572	1,320
Biochemistry	U of TN	743	WA State U	3,712	1,688	1,321
Biology	UC Davis	541	Ohio State U	2,479	1,165	1,045
Cell Biology and Neuroscience	UC Davis	1,169	WA State U	3,712	1,679	952
Chemistry	NC State U	811	WA State U	2,673	1,704	1,944
Earth Sciences	U of TN	395	Ohio State U	1,570	809	702
Mathematics	UC Davis	19	UC Berkeley	40	30	28
Physics	Miss. State U	142	WA State U	2,186	684	855
Statistics	UC Davis	14	UC Berkeley	50	32	145

Research Space (ASF) per Tenure-Track Faculty FTE



Current Trends in Academic Research Facilities

The transformation of science during the past decade has compelled major changes in undergraduate science education. Science is becoming progressively interdisciplinary; researchers have access to increasingly sophisticated equipment. Universities are rethinking the way faculty work, teach, and conduct research and the way students learn. Research facilities need to support a research-rich environment that sustains a curriculum steeped in investigation, where students and faculty work collaboratively as partners. Buildings need to be planned and designed with flexibility, sustainability, and efficiency in mind.

The following summarizes the current trends in academic research facilities.

Interdisciplinary and Collaborative

Professors, researchers, and administrators are requesting spaces that are less rigidly defined by discipline and more versatile in nature, and that invite and encourage interaction between students and teachers. Departments, programs, and schools are located in a manner that makes intellectual sense, given the fields of study, and that encourages authentic interdisciplinary activity, such as the strategic placement of highly flexible teaching spaces that can be utilized by more than one discipline. The goal is spaces in which interaction becomes the routine rather than the exception and where the traffic patterns and placement of offices, labs, and common spaces make conversations a part of daily life. This arrangement provides opportunities for people to meet as a result of their normal, day-to-day use of the building, thus fostering informal interaction. This concept also serves to encourage the kind of serendipitous encounters (faculty-faculty, student-faculty, student-student) that are at the heart of scientific culture and which may lead to the expansion of educational or scientific ideas and collaborations.

Flexibility

Today more than ever, research laboratories must be designed for maximum flexibility to serve universities' short-, medium-, and long-term needs - flexible laboratory casework and adaptable laboratory services infrastructure. Maximizing flexibility enables lab spaces to serve as classrooms for other disciplines, increasing not only their functionality but that of the building as a whole, by serving multiple disciplines. The teaching of science is changing and will continue to change.

Laboratories and classrooms must be designed in ways that will both support and adapt to change. The challenge is to meet the specific needs of the individual scientific disciplines with fixed facilities, such as fume hoods, sinks, and piped services, while allowing the flexibility of movable furniture, benches that are suitable for group work, and a plentiful supply of power and data outlets. Schools and colleges must employ a flexible lab architecture that can change with science over time.

Efficient common facilities

Facilities can be operated more efficiently by bringing together many of the support services—such as machine shops and animal, chemical storage, and computer facilities—that otherwise would be operated independently and less efficiently in individual departments. This consolidation can allow not only for an economic efficiency, but also an improved ability to meet regulatory requirements. For example, the regulatory requirements for animal facilities are particularly stringent; combining such facilities for different departments (typically biology and psychology) can improve an institution's ability to comply.

Sustainability

Increasingly, laboratory buildings are being evaluated for their efficiency and how well engineered systems conform to new energy standards. Sustainability begins with planning a building that is flexible and adaptable, avoiding the need to be replaced. Energy conservation is maximized when a building is sited in a way that reduces the load on the mechanical systems required for heating and cooling.

Technology

New technologies will change the way research is conducted. These technologies will require flexible space for implementation as well as support space for the maintenance and modification of the systems. The evolution of research equipment is as important to the research team as the research itself.

Computer technology is continuing to develop at a rate which doubles every six months and has been the single largest contributor to growth and advancements in science. Its influence will continue to revolutionize the investigation, exploration, and teaching of science. Computer technology will also lead to greater utilization of virtual laboratories. The development of software in combination with

computing power and visualization devices allows for the theoretical study of complex and dynamic systems.

Likewise, concurrent advancements in communications have occurred. This has dramatically impacted the ability to access information whether it is by videoconference, cell phone, instant messaging, e-mail, the web, or institutional databases. Information and data can be shared and provide the basis for independent analysis and discovery. Opening up scientific databases to the web or by other electronic means can facilitate collaborative work between institutions as well as independent study without duplicating research activities that require a standard lab.

New Science Research Facilities

Below are new science research facilities across the nation that have been constructed/renovated in recent years, as well as a few that are currently undergoing construction.

Arizona State University, Tempe, Arizona
Arizona Biodesign Institute
\$69 million
170,000 GSF
Completion slated for Fall 2004

University Contacts:

Michael J. Mobley, Ph.D.
Executive Director, Arizona Biodesign Institute
Phone: (480) 965-8304
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For specific architectural drawings, contact Joseph Marra, the ASU Architect for this project:
Joseph.Marra@asu.edu



The 170,000 gross-square-foot building will provide lab and office space for research in areas such as neural rehabilitation, genomics, molecular biophysics, neutraceuticals and edible vaccines, and nano-scale bio-optics and bioscience. The research will be interdisciplinary in nature, with a focus on the life sciences, bioengineering and biotechnology. The design of the building will

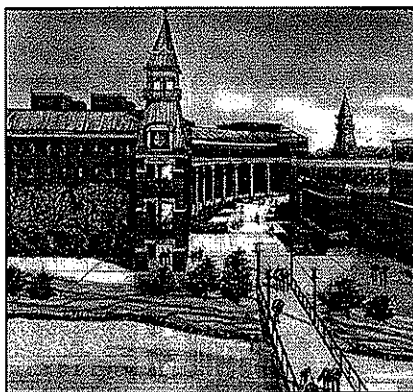
include an open, flexible interior that encourages research collaboration and allows the building to evolve to accommodate specific project needs. Current conceptual design calls for three floors with a sub-basement.

Square Footage Per Space Type				
Floor	Occupied Area Gross Square Feet	Occupied Area Net Square Feet	Percent of Net Square Feet	Total Structured Square Foot Area
Lab / Lab Support	60460	49511	42.6%	79255
Lab Support	22167	18153	15.6%	29058
Office	36321	29743	25.6%	47611
Lobby / Atrium / Café	22815	18683	16.1%	29907
Total	141763	116090	100%	185831
Total Net to Gross	82%	62%		
Square Footage of Toilets		1800	4	7200
Square Footage of Site		194400		

Baylor University, Waco, Texas
Baylor Sciences Building
\$103 million
500,000 SF
Completion slated for Fall 2004

University Contact:

Dr. Ben Pierce
 Professor of Biology and Associate Dean for Sciences
 Phone: (254) 710-2911
 Email: Ben.Pierce@baylor.edu



The four-story facility's three research wings will house the life sciences (biology and neuroscience); the physical sciences (physics, chemistry and geology); and five multidisciplinary research/education centers on pre-health education, molecular biosciences, drug discovery, reservoir and water studies, and scientific analysis and computing.

The three wings will span out with modular design to maximize flexibility. All utilities come from a three-foot space above the ceiling, rather than being built into the walls, so that classrooms and labs can be enlarged or reduced as needed. The building also includes a 300-seat auditorium and a variety of classroom sizes, from 150 seats to numerous smaller, 12-person classrooms; a four-story atrium designed to promote student interaction; and two towers featuring student lounges and small conference rooms. There are four usable stories and a fifth floor under a sloped roof that will house mechanical equipment and other research support space.

The basic lab module is 330 SF. The average per tenure-track faculty research space for Biology, Neuroscience, Geology, and Physics is 660 SF (2 modules); and Chemistry and Biochemistry is 990 SF(3 modules). These numbers are averages and departments were allocated research space on this basis; however, most departments allocated space to individual faculty based on needs, therefore, some faculty received more space while others received less space.

All faculty and staff offices are 150 SF (to accommodate one faculty or staff member) and graduate student office space is 36 SF per student.

Cornell University, Ithaca, New York
Life Science Technology Building
\$140 million
250,000 SF
Preliminary Groundwork to begin early 2004

University Contacts:

Stephen Kresovich
Director, Institute for Biotechnology and Life Science Technologies
Chair, Life Science Technology Building Planning Committee
Phone: (607) 255-1492
Fax: (607) 255-6249
Email: sk20@cornell.edu

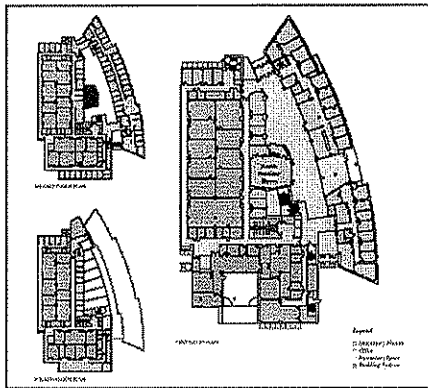
Todd Mattison
Program Manager, Life Science Technology Building
Phone: (607) 254-7289
E-mail: tfm9@cornell.edu

The Life Science Technology Building will serve as the hub for the many researchers and students engaged in functional and comparative genomics as well as other interdisciplinary, technology-driven activities, including computational biology, biomedical engineering, nanobiotechnology and biophysics.

The Life Science Technology Building will bring together researchers and students in a diverse range of disciplines such as physical sciences, engineering and computational sciences, not only to conduct research but also to apply their research to problem-solving in the areas of human medicine, veterinary science, sustainable agriculture and environmental remediation. The greatest part of the usable space will be occupied by research and teaching labs with a strong focus on graduate and undergraduate research and education. It is expected that several hundred students, including undergraduates, will use the building every day. Other currently planned facilities in the building include a mouse vivarium controlled environment facilities, a distance learning center, teaching labs and a business incubator in which Cornell-based research by faculty, students and staff can be utilized by fledgling companies with the help of on-site business experts.

Ohio State University, Columbus Ohio
Physics Research Building
\$50 million
233,739 SF
Completed slated for Fall 2004

University Contact:
 William Saam
 Professor and Chair, Department of Physics
 Phone: (619) 292-2653
 Fax: (619) 292-7557
 Email: saam@mps.ohio-state.edu



The building will house the Department of Physics, College of Mathematical and Physical Sciences and will house administrative offices, conference space, and faculty offices, as well as 210 laboratory modules. The facility features an atrium and adjoining patio space.

The building design incorporates a central atrium flanked by a four-story research laboratory wing to the west and south, and a four-level office and office support wing to the east. Flexible laboratory spaces can easily be modified and changed to maintain new research environments. Located on the top floor is a 950 SF departmental meeting room which provides flexible conference seating for more than 50 people.

The Physics Department programs include Astrophysics, Atomic, Molecular and Optical Physics, Condensed Matter Physics, High- Energy Particle Physics, Nuclear Physics, and Physics Education Research.

Southern Methodist University, Dallas, Texas
Dedman Life Sciences Building
\$18 million
68,100SF
Opened Spring 2002

University Contact:
 Larry Ruben
 Chair, Department of Biological Sciences in Dedman College
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The building houses classrooms, research and teaching labs, computer labs and faculty offices for the Department of Biological Sciences as well as space for the university's premedical studies program and its interdisciplinary biochemistry program. The building makes it possible to offer new courses, to add research programs and to increase the size of the biology faculty.



The first floor of the building houses the Pre-medical Studies Center, which includes core teaching facilities with specialized equipment for microbiology, biochemistry, toxicology, immunology, tissue culture, microscopy, parasitology, and botany. Also located on the first floor are classrooms, departmental offices, a computer laboratory and conference room. The largest of the first-floor classrooms, a 98-seat lecture hall, is equipped with interactive computer access at each seat, computer access for lecturers, and computer projection, video and multimedia components. The second and third floors include faculty offices, research laboratories, two seminar/meeting rooms, offices for graduate students and postdoctoral researchers, and support facilities.

The building is designed to be flexible, so that the size and dimensions of laboratory spaces can change as the fields of discipline change.

University of California, Berkeley
Stanley Quantitative Biosciences and Bioengineering Facility
285,000 GSF
\$162 Million
Currently under construction (September 2003)
Completion slated for January 2006

University Contacts:
 Director of Development
 Berkeley Health Sciences Initiative
 Phone: (510) 643-7004

UC Berkeley Capital Projects
 Phone (510) 643-4793

Mary Keegan
 Director, Development Communications
 Phone: (510) 643-8890
 Fax: (510) 643-8066
 Email: mjk@dev.urel.berkeley.edu

The Stanley Quantitative Biosciences and Bioengineering Facility building is constructed on the site of the 47-year old, seismically deficient Stanley Hall. The new building will replace the existing Stanley Hall with a larger, modern laboratory, office, and classroom facility that will combine advanced research with education and training for future scientists.

Plans for the Stanley Quantitative Biosciences and Bioengineering Facility emphasize high-quality, sophisticated laboratories, powerful new science equipment, state-of-the-art educational technologies, and efficient support facilities. Special care is being taken in the design of this large building to create

an environment that encourages interaction among the different disciplines and stimulates the creativity and innovation of its occupants.

The space program includes laboratories for structural and chemical biology, biophysics, imaging, bio-microelectromechanical systems, tissue engineering, and computational and theoretical biology. Non-laboratory facilities include instructional and shared meeting spaces, academic and administrative offices, and shared support. A 300-seat auditorium and a café are also planned.

University of California, Davis
Contained Research Facility
\$26 million
40,000 SF
Opened early 2003

University Contact:

Robert Washino
Professor Emeritus of Entomology
Chair, Contained Research Facility Committee
Phone: (530) 752-5652
Email: rkwashino@ucdavis.edu

The Contained Research Facility is located near the College of Agricultural and Environmental Sciences. The first of its kind in the United States, it is a complex of greenhouses and laboratories where research on agricultural pests and plant diseases can be conducted in a highly secure, biologically-contained environment. The new facility houses research projects related to food and fiber crops, especially those involving invading pests, disease-causing organisms and genetically modified plants. It is also used to study the role that fresh fruits and vegetables may play in transmitting food-borne illnesses.

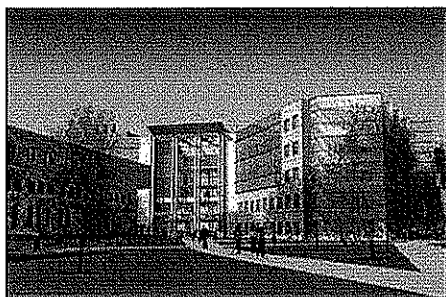
What makes this project different is its size and the inclusion of "Level 3" greenhouses. The structure consists of office space, general wet labs and high-containment wet labs and greenhouses. About 6,000 square feet of space is planned for future lab expansion. Features include everything from break-proof windows in the greenhouses to double doors, and an air filtration system.

University of Chicago, Chicago, Illinois
Interdivisional Research Building
\$180 million
430,000 SF
Completion slated for 2004

University Contacts:

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Associate Director, Project Management
Phone: (773) 834-7805
Fax: (773) 702-5814
Email: jlewis@uchicago.edu

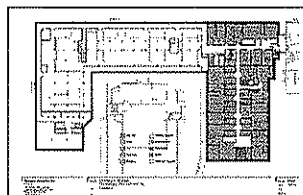
Donald Levy
 Professor, Division of Physical Sciences, Chemistry
 Phone: (773) 702-7196
 Fax: (773) 702-5863
 Email: d-levy@uchicago.edu



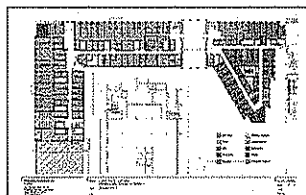
The Interdivisional Research Building is being designed to enhance collaboration and to better enable the sharing of ideas among researchers -- biological and physical scientists working in fields ranging from condensed-matter physics to synthetic chemistry to complexity theory. The building will have two floors below ground and five above.

The building will provide offices and laboratories for approximately 100 faculty members when it opens in 2004. The IRB will house the Institute for Biophysical Dynamics as well as the Materials

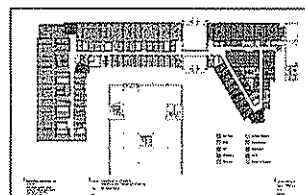
Research Science and Engineering Center, both of which include scientists from the Biological and Physical Sciences divisions. Also relocating into the IRB from the Physical Sciences are faculty members in the Chemistry Department and from the Biological Sciences will come the Biochemistry and Molecular Biology Department.



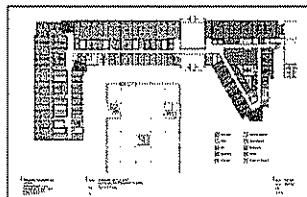
Basement



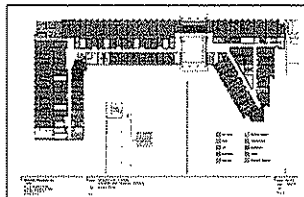
Ground Floor



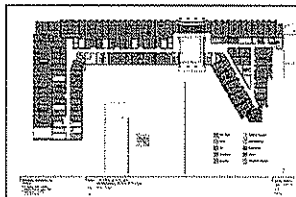
Second Floor



Third Floor



Fourth Floor



Fifth Floor

**University of Wisconsin
 Chemistry Department Renovation
 \$38.9 million
 322,701 GSF
 Completed November 2002**

University Contact:

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The Mathews Chemistry Laboratories and the Daniels Chemistry Building, built for the Department of Chemistry in 1963 and 1967 respectively, originally provided the required research space for the University of Wisconsin's Department of Chemistry. However, the aging buildings fell behind current standards for safe and productive laboratories. Remodeling of the existing research laboratories was a priority and included increased fume hood access for students at workstations, as well as installation of localized bench-top exhaust systems. The renovations not only addressed safety concerns, but also brought state-of-the-art equipment to the facility.

Renovation work included removing student desks from lab space to create student offices and apparatus labs in a module adjacent to the lab. The number of students was reduced to create a better ratio between fume hood and bench space per student. An instructional laboratory and computer laboratory allow students to conduct data research. Study rooms are also available for teams to discuss their findings. Offices for teaching assistants provide for small-group interactions between the TAs and students. An integrated Chemistry Learning Center provides academic assistance to minority and "at-risk" undergraduate students. The renovated chemistry library provides substantially expanded access to electronic information resources. A 120-seat Seminar Hall is used for course instruction, research seminars, graduate student presentations, group meetings, conferences, and outreach activities.

Williams College, Williamstown, Massachusetts
Unified Science Center
\$47 million
118,000 GSF Addition
100,000 GSF Remodel
33,000 GSF Science Library
Completed in 2000



University Contact:

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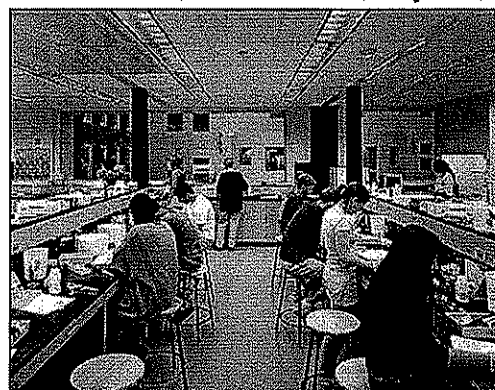
With existing science facilities housed in four buildings, the project involved the renovation of 100,000 GSF of the existing space, the addition of a 118,000 GSF laboratory building, and the creation of the 33,000 GSF Schow Science Library.



Designed to encourage interdisciplinary learning among all the sciences, the addition houses teaching and research labs for each department and interconnects the four existing buildings. Nestled within the center is the centralized Science Library, providing new study space on the south side of the campus. The new facility serves the departments of Astronomy, Biology, Chemistry, Computer Science, Environmental Analysis, Geosciences, Mathematics, Physics, Psychology and other science disciplines.

The new science addition also contains

an animal facility and clinical suite. The first floor of the addition houses teaching labs for biology, undergraduate chemistry research, upper-level chemistry (analytical, organic and inorganic), an NMR and support areas. The second level contains additional chemistry core support facilities, an Instrument Suite for environmental sciences, teaching labs for chemistry and environmental science, and chemistry instrument labs.



Yale University
Environmental Sciences Facility
98,000 SF
Completed early 2001

University Contact:

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The Environmental Sciences Facility is located adjacent to the Peabody Museum of Natural History; half the building's space provides a climate-controlled home for many of the museum's valuable specimens and other collections. The three-story building supports collaborative research and teaching in all the environmental sciences. The facility houses laboratories, classrooms, and other space for the departments of Ecology and Evolutionary Biology, Geology and Geophysics, and Anthropology; for the School of Forestry and Environmental Studies; and for the Yale Institute for Biospheric Studies (YIBS). The building is connected on all floors to the Peabody Museum and to the Kline Geology Laboratory on the second floor.

Survey Results by Institution

Data is arranged across the top row by the following **Departments (1)** at UCR CNAS (please refer to **page 3 of this section for reference**):

- Agricultural Sciences
 - Botany and Plant Sciences
 - Entomology
 - Environmental Sciences
 - Nematology
 - Plant Pathology
- Biological Sciences
 - Biochemistry
 - Biology
 - Cell Biology and Neuroscience
- Physical Sciences
 - Chemistry
 - Earth Sciences
 - Mathematics
 - Physics
 - Statistics

Data is sorted along the left column by **(2) Space Type** - assignable square feet (ASF) from 2002-03 space inventory for the following Room Use Category as identified by the National Center for Educational Statistics (NCES), Postsecondary Education Facilities Inventory and Classification Manual:

- Research Laboratory/Service (250/255)

Although data was also gathered for the following space types below, for the purposes of this study, they were excluded from the final data analysis.

- Office Facilities (300-355)
- Study Facilities (400-455)
- Field Building (560)

- Animal Quarters/Service (570/575)
- Greenhouse/Service (580/585)
- Shop/Service (720/725)

Data element (3) is the **number of Tenure-Track Faculty FTE per department**. Tenure-Track Faculty is defined as Professor, Associate Professor, Assistant Professor appointments, which entail full responsibility for teaching, performing research, advising students, and performing professional and University service, including funded, but vacant, positions.

Data element (4) is the **Ratio of Research Space (ASF) per Tenure-Track Faculty FTE** and data element (5) is the **Total Enrollment for Fall of 2002**.

Benchmark Institutions:

- Louisiana State University
- Mississippi State University
- North Carolina State University
- Ohio State University
- University of California, Berkeley
- University of California, Davis
- University of California, Irvine
- University of Tennessee
- Virginia Polytechnic Institute and State University
- Washington State University

Please note that the ASF data for the Departments of Math and Statistics for the space type Office Facilities (300-355) may reflect inconsistencies in the methodology used for all other departments. Office facilities space in these two departments may include more than just research space – in some instances, academic office space may have been figured into the total ASF.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 Name of University

(1)

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences				Biological Sciences				Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Sciences	Entomology	Environmental Sciences	Nematology	Plant Pathology	Biochemistry	Biology	Cell Biology and Neuroscience	Chemistry	Earth Sciences	Mathematics	Physics	Statistics
Research Laboratory/Service	250/255													
Office Facilities	300-355													
Study Facilities	400-455													
Field Building	560													
Animal Quarters/Service	570/575													
Greenhouse/Service	580/585													
Shop/Service	720/725													
Total ASF														
Tenure-Track Faculty FTE														
ASF/Tenure-Track Faculty FTE														
Total Enrollment														

(2)

(3)

(4)

(5)

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 Louisiana State University
 Baton Rouge, Louisiana

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences					Biological Sciences			Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Sciences (1)	Entomology	Environmental Sciences	Nematology (1)	Plant Pathology (1)	Biochemistry (2)	Biology (2)	Cell Biology and Neuroscience (2)	Chemistry	Earth Sciences	Mathematics	Physics	Statistics
Research Laboratory/Service	250/255		7,754	12,202		12,441		91,199		35,969	19,995	15,640	11,720	0
Office Facilities	300-355													
Study Facilities	400-455													
Field Building	560													
Animal Quarters/Service	570/575													
Greenhouse/Service	580/585													
Shop/Service	720/725													
Total ASF		NA	7,754	12,202	N/A	12,441		91,199		35,969	19,995	15,640	11,720	0
Tenure-Track Faculty FTE		N/A	3.65	8.57	N/A	N/A	See	50.59	See	28.33	18.43	44.70	37.71	6.69
ASF/Tenure-Track Faculty FTE		N/A	2,124	1,424	N/A	N/A	Biology	1,803	Biology	1,270	1,085	350	311	-
Total Enrollment (Fall 2002)	32,228													

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments Louisiana State University Departments

(1) Comparable data not available between the two institutions.

(2) The data in the Biology Department column includes the Departments of Biology, Biochemistry, and Cell Biology and Neuroscience at Louisiana State University.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 Mississippi State University
 Starkville, Mississippi

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences				Biological Sciences				Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Sciences (2)	Entomology (3)	Environmental Sciences (1)	Nematology (1)	Plant Pathology (3)	Biochemistry (4)	Biology	Cell Biology and Neuroscience (1)	Chemistry	Earth Sciences (5)	Mathematics (6)	Physics (7)	Statistics (6)
Research Laboratory/Service	250/255	34,968	46,644				7,332	11,218		15,307	0	0	2,269	
Office Facilities	300-355													
Study Facilities	400-455													
Field Building	560													
Animal Quarters/Service	570/575													
Greenhouse/Service	580/585													
Shop/Service	720/725													
Total ASF		34,968	46,644	N/A	N/A		7,332	11,218	N/A	15,307	0	0	2,269	
Tenure-Track Faculty FTE		18.00	13.00	N/A	N/A	See	7.00	17.00	N/A	10.00	10.00	23.00	16.00	See
ASF/Tenure-Track Faculty FTE		1,943	3,588	N/A	N/A	Entomology	1,047	660	N/A	1,531	N/A	-	142	Math
Total Enrollment (Fall 2002)		16,610												

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

<u>University of California, Riverside Departments</u>	<u>Mississippi State University Departments</u>
(1) Comparable data is not available between the two institutions.	
(2) Botany and Plant Sciences	Plant and Soil Science
(3) Entomology; Plant Pathology	Department of Entomology and Department of Plant Pathology is combined at Mississippi State University.
(4) Biochemistry	Biochemistry and Molecular Biology
(5) Earth Sciences	Geosciences
(6) Mathematics and Statistics	Department of Math and Department of Statistics are combined at Mississippi State University.
(7) Physics	Physics and Astronomy

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 North Carolina State University
 Raleigh, North Carolina

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)													
		Agricultural Sciences					Biological Sciences				Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Science (1)	Entomology	Environmental Sciences (2)	Nematology (3)	Plant Pathology	Biochemistry	Biology (4)	Cell Biology and Neuroscience (5)	Chemistry	Earth Sciences (6)	Mathematics	Physics	Statistics	Biological Resources Center (7)
Research Laboratory/Service	250/255	58,929	17,684	19,130	17,735	25,675	18,477	22,685	14,140	32,430	23,703	17,952	17,986	20,612	1,019
Office Facilities	300-355														
Study Facilities	400-455														
Field Building	560														
Animal Quarters/Service	570/575														
Greenhouse/Service	580/585														
Shop/Service	720/725														
Total ASF		58,929	17,684	19,130	17,735	25,675	18,477	22,685	14,140	32,430	23,703	17,952	17,986	20,612	1,019
Tenure-Track Faculty FTE		99.00	25.00	24.00	15.00	29.00	15.00	33.00	12.00	40.00	38.00	61.00	43.00	35.00	1.00
ASF/Tenure-Track Faculty FTE		595	707	797	1,182	885	1,232	687	1,178	811	624	294	418	589	1,019
Total Enrollment (Fall 2002)	29,637														

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

- (1) Botany and Plant Sciences
- (2) Environmental Sciences
- (3) Nematology
- (4) Biology
- (5) Cell Biology and Neuroscience
- (6) Earth Sciences

North Carolina State University Departments

- Department of Botany, Department of Horticultural Science, and Department of Crop Science are combined.
- Soil Science
- Genetics
- Biological Sciences and Zoology
- Microbiology
- Marine, Earth and Atmospheric Sciences

(7) Biological Resources Center provides research support (Animal Quarters) to the following NCSU departments: Toxicology, Microbiology, Genetics, Zoology, Biochemistry, Animal Science and Food Science.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 North Carolina State University
 Raleigh, North Carolina

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)													
		Agricultural Sciences					Biological Sciences				Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Science (1)	Entomology	Environmental Sciences (2)	Nematology (3)	Plant Pathology	Biochemistry	Biology (4)	Cell Biology and Neuroscience (5)	Chemistry	Earth Sciences (6)	Mathematics	Physics	Statistics	Biological Resources Center (7)
Research Laboratory/Service	250/255	58,929	17,684	19,130	17,735	25,675	18,477	22,685	14,140	32,430	23,703	270	17,986	2,807	1,019
Office Facilities	300-355														
Study Facilities	400-455														
Field Building	560														
Animal Quarters/Service	570/575														
Greenhouse/Service	580/585														
Shop/Service	720/725														
Total ASF		58,929	17,684	19,130	17,735	25,675	18,477	22,685	14,140	32,430	23,703	270	17,986	2,807	1,019
Tenure-Track Faculty FTE		99.00	25.00	24.00	15.00	29.00	15.00	33.00	12.00	40.00	38.00	61.00	43.00	35.00	1.00
ASF/Tenure-Track Faculty FTE		595	707	797	1,182	885	1,232	687	1,178	811	624	4	418	80	1,019
Total Enrollment (Fall 2002)	29,637														

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

- (1) Botany and Plant Sciences
- (2) Environmental Sciences
- (3) Nematology
- (4) Biology
- (5) Cell Biology and Neuroscience
- (6) Earth Sciences

North Carolina State University Departments

- Department of Botany, Department of Horticultural Science, and Department of Crop Science are combined.
- Soil Science
- Genetics
- Biological Sciences and Zoology
- Microbiology
- Marine, Earth and Atmospheric Sciences

(7) Biological Resources Center provides research support (Animal Quarters) to the following NCSU departments: Toxicology, Microbiology, Genetics, Zoology, Biochemistry, Animal Science and Food Science.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 University of California, Berkeley
 Berkeley, California

Space Types	NCES* Room Use Code	University of CA Room Use Code	UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS													College of Chemistry (9)	
			Agricultural Sciences			Biological Sciences					Physical Sciences						
			Botany and Plant Sciences (2)	Entomology (3)	Environmental Sciences (4)	Nematology (1)	Plant Pathology (1)	Biochemistry (5)	Biology (6)	Cell Biology and Neuroscience (7)	Chemistry	Earth Sciences (8)	Mathematics	Physics	Statistics		
Research Laboratory/Service	250/255	210/225/250/255	49,704	67,012						53,824	111,028	91,608	15,137	3,059	40,337	1,251	24,266
Office Facilities	300-355	211/226															
Study Facilities	400-455	N/A															
Field Building	560	570															
Animal Quarters/Service	570/575	580/585															
Greenhouse/Service	580/585	590/595															
Shop/Service	720/725	710/715/720															
Total ASF			49,704	67,012						53,824	111,028	91,608	15,137	3,059	40,337	1,251	24,266
Tenure-Track Faculty FTE			41.07	90.31	See	N/A	N/A	N/A	41.14	82.51	56.30	23.52	77.03	63.03	25.26	N/A	N/A
ASFTenure-Track Faculty FTE			1,210	742	Entomology	N/A	N/A	N/A	1,308	1,346	1,627	644	40	640	50	N/A	N/A
Total Enrollment (Fall 2002)		33,145															

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

University of California, Berkeley Departments

(1) Comparable data not available between the two institutions.

(2) Botany and Plant Science

Plant Biology

(3) Entomology

Department of Environmental Science, Policy and Management at Berkeley includes both Entomology and Environmental Sciences.

(4) Environmental Sciences

Department of Environmental Science, Policy and Management at Berkeley includes both Entomology and Environmental Sciences.

(5) Biochemistry

For decades, Berkeley has had a building called Biochemistry, recently re-named at Barker Hall, which is now used primarily by the Department of Molecular and Cell Biology.

(6) Biology

Integrated Biology

(7) Cell Biology and Neuroscience

Molecular and Cell Biology

(8) Earth Sciences

Earth and Planetary Science

(9) The College of Chemistry at UC Berkeley has two Departments - Chemistry and Chemical Engineering. Space allocated here supports both departments.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 University of California, Davis
 Davis, California

			UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
			Agricultural Sciences					Biological Sciences			Physical Sciences				
Space Types	NCES* Room Use Code	University of CA Room Use Code	Botany and Plant Sciences (1)	Entomology	Environmental Sciences (2)	Nematology	Plant Pathology	Biochemistry (3)	Biology (4)	Cell Biology and Neuroscience (5)	Chemistry	Earth Sciences (6)	Mathematics	Physics	Statistics
Research Laboratory/Service	250/255	210/225/250/255	21,086	24,433	22,939	5,754	38,705		7,202	62,531	58,881	8,387	975	14,317	226
Office Facilities	300-355	211/226													
Study Facilities	400-455	N/A													
Field Building	560	570													
Animal Quarters/Service	570/575	580/585													
Greenhouse/Service	580/585	590/595													
Shop/Service	720/725	710/715/720													
Total ASF			21,086	24,433	22,939	5,754	38,705	N/A	7,202	62,531	58,881	8,387	975	14,317	226
Tenure-Track Faculty FTE			13.09	21.97	26.02	5.98	19.22	N/A	13.32	53.47	36.15	18.98	51.83	38.99	16.11
ASF/Tenure-Track Faculty FTE			1,611	1,112	882	962	2,014	N/A	541	1,169	1,629	442	19	367	14
Total Enrollment	29,087														

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

- (1) Botany and Plant Science
- (2) Environmental Sciences

University of California, Davis Departments

Plant Biology

There are two departments at UCD that are comparable: Department of Toxicology; and Department of Environmental Science and Policy. The data for the two departments are combined.

Department of Toxicology:

Research Lab/Service: 14,600 ASF; Office Facilities: 378 ASF; Total ASF: 14,978; Tenure-Track FTE: 8.68

Department of Environmental Science and Policy:

Research Lab/Service: 8,339 ASF; Office Facilities: 3702 ASF; Shop/Service: 194ASF; Total ASF: 12,235; Tenure-Track FTE: 17.34

(3) Comparable data not available between the two departments.

(4) Biology

Wildlife, Fish and Conservation Biology

(5) Cell Biology and Neuroscience

Data by department:

Department of Molecular and Cellular Biology:

There are two departments at UCD that are comparable: Department of Molecular and Cellular Biology; and Department of Neurobiology, Physiology, and Behavior. The data for the two departments are combined.

Dept. of Neurobiology, Physiology, and Behavior:

Research Lab/Service: 45,445 ASF; Office Facilities: 162 ASF; Animal Quarters: 611 ASF; Greenhouse/Service 493 ASF; Total ASF: 46,711; Tenure-Track Faculty FTE: 32.23

Geology

Research Lab/Service: 17,086 ASF; Office Facilities: 496 ASF; Animal Quarters: 832 ASF; Shop/Service 400 ASF; Total ASF: 18,814; Tenure-Track Faculty FTE: 21.24

(6) Earth Sciences

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 University of California, Irvine
 Irvine, California

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)														
		Agricultural Sciences					Biological Sciences			Physical Sciences						
Space Types	NCES* Room Use Code	University of CA Room Use Code	Botany and Plant Sciences (1)	Entomology (1)	Environmental Sciences (1)	Nematology (1)	Plant Pathology (1)	Biochemistry (2)	Biology	Cell Biology and Neuroscience (3)	Chemistry	Earth Sciences (4)	Mathematics	Physics	Statistics (1)	Ecology and Evolutionary Biology (5)
Research Laboratory/Service	250/255	210/225/250/255						46,709	11,958	57,821	100,578	8,481	1,601	38,203		34,611
Office Facilities	300-355	211/226														
Study Facilities	400-455	N/A														
Field Building	560	570														
Animal Quarters/Service	570/575	580/585														
Greenhouse/Service	580/585	590/595														
Shop/Service	720/725	710/715/720														
Total ASF			N/A	N/A	N/A	N/A	N/A	46,709	11,958	57,821	100,578	8,481	1,601	38,203	N/A	34,611
Tenure-Track Faculty FTE			N/A	N/A	N/A	N/A	N/A	30.50	17.33	48.00	47.00	16.00	42.00	49.00	N/A	32.67
ASF/Tenure-Track Faculty FTE			N/A	N/A	N/A	N/A	N/A	1,531	690	1,205	2,140	530	38	780	N/A	1,059
Total Enrollment	23,179															

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

University of California, Irvine Departments

(1) Comparable data not available between the two institutions.

(2) Biochemistry

Molecular Biology and Biochemistry

(3) Cell Biology and Neuroscience

There are two departments at UCI that are comparable: Department of Development and Cell Biology; and Department of Neurobiology and Behavior. The data for the two departments are combined.

Data by department: Department of Development and Cell Biology: Research Lab Service: 35,517 ASF; Total ASF 35,517 Tenure Track Faculty FTE: 27

Department of Neurobiology and Behavior: Research Lab Service: 22,304 ASF; Total ASF: 22,304; Faculty FTE: 21

(4) Earth Sciences

Earth System Science

(5) Additional Department at Irvine: Department of Ecology and Evolutionary Biology.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 University of California, Riverside
 Riverside, California

			UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
			Agricultural Sciences					Biological Sciences				Physical Sciences			
Space Types	NCES* Room Use Code	University of CA Room Use Code	Botany and Plant Sciences	Entomology	Environmental Sciences	Nematology	Plant Pathology	Biochemistry	Biology	Cell Biology and Neuroscience	Chemistry	Earth Sciences	Mathematics	Physics	Statistics
Research Laboratory/Service	250/255	210/225/250/255	30,068	61,151	22,506	6,116	21,249	20,483	22,463	14,880	46,850	8,373	688	19,111	1,304
Office Facilities	300-355	211/226													
Study Facilities	400-455	N/A													
Field Building	560	570													
Animal Quarters/Service	570/575	580/585													
Greenhouse/Service	580/585	590/595													
Shop/Service	720/725	710/715/720													
Total ASF			30,068	61,151	22,506	6,116	21,249	20,483	22,463	14,880	46,850	8,373	688	19,111	1,304
Tenure-Track Faculty FTE**			25.30	29.15	20.51	6.30	16.10	15.50	21.50	15.63	24.10	11.92	25.00	22.34	9.00
ASF/Tenure-Track Faculty FTE			1,188	2,098	1,097	971	1,320	1,321	1,045	952	1,944	702	28	855	145
Total Enrollment (Fall 2002)	15,934														

*National Center for Educational Statistics

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 University of Tennessee
 Knoxville, Tennessee

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences				Biological Sciences				Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Sciences	Entomology (1)	Environmental Sciences	Nematology (1)	Plant Pathology (1)	Biochemistry (2)	Biology	Cell Biology and Neuroscience	Chemistry	Earth Sciences	Mathematics	Physics	Statistics (3)
Research Laboratory/Service	250/255	12,140	287	23,157			15,599	24,591	32,178	24,587	4,739	0	5,794	
Office Facilities	300-355													
Study Facilities	400-455													
Field Building	560													
Animal Quarters/Service	570/575													
Greenhouse/Service	580/585													
Shop/Service	720/725													
Total ASF		12,140	287	23,157			15,599	24,591	32,178	24,587	4,739	0	5,794	N/A
Tenure-Track Faculty FTE		35.00	13.00	17.00	See	See	21.00	27.00	24.00	28.00	12.00	36.00	28.00	10.00
ASF/Tenure-Track Faculty FTE		347	22	1,362	Entomology	Entomology	743	911	1,341	878	395	-	207	N/A
Total Enrollment (Fall 2002)		27,971												

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

- (1) Entomology, Nematology, and Plant Pathology
- (2) Biochemistry
- (3) Statistics

University of Tennessee Departments

Department of Entomology, Department of Nematology, and Department Plant Pathology are combined.
 Biochemical and Cell Molecular Biology
 Space data is not available for this Department, pending a facilities database conversion.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 Virginia Polytechnic Institute and State University
 Blacksburg, Virginia

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences					Biological Sciences				Physical Sciences			
Space Types	NCES* Room Use Code	Botany and Plant Sciences (1)	Entomology	Environmental Sciences (2)	Nematology (1)	Plant Pathology (3)	Biochemistry	Biology	Cell Biology and Neuroscience (1)	Chemistry	Earth Sciences (4)	Mathematics	Physics	Statistics
Research Laboratory/Service	250/255		6,821	15,366		18,735	28,996	33,767		48,815	15,265	3,236	10,109	869
Office Facilities	300-355													
Study Facilities	400-455													
Field Building	560													
Animal Quarters/Service	570/575													
Greenhouse/Service	580/585													
Shop/Service	720/725													
Total ASF		N/A	6,821	15,366	N/A	18,735	28,996	33,767	N/A	48,815	15,265	3,236	10,109	869
Tenure-Track Faculty FTE		N/A	15.00	21.00	N/A	18.00	16.80	36.00	N/A	26.00	18.00	46.30	23.00	14.00
ASF/Tenure-Track Faculty FTE		N/A	455	732	N/A	1,041	1,726	938	N/A	1,878	848	70	440	62
Total Enrollment (Fall 2002)	25,645													

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

(1) Comparable data is not available between the two institutions.

(2) Environmental Sciences

(3) Plant Pathology

(4) Earth Sciences

Virginia Polytechnic Institute and State University Departments

Crop and Soil Environmental Sciences

Plant Pathology, Physiology and Weed Science

Geological Sciences

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 Washington State University
 Pullman, Washington

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences					Biological Sciences			Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Sciences (1)	Entomology	Environmental Sciences	Nematology (2)	Plant Pathology	Biochemistry (3)	Biology (4)	Cell Biology and Neuroscience (3)	Chemistry	Earth Sciences (5)	Mathematics (6)	Physics	Statistics (6)
Research Laboratory/Service	250/255	47,365	9,374	1,304		11,615	51,964	36,768		47,037	12,552	0	27,707	0
Office Facilities	300-355													
Study Facilities	400-455													
Field Building	560													
Animal Quarters/Service	570/575													
Greenhouse/Service	580/585													
Shop/Service	720/725													
Total ASF		47,365	9,374	1,304	N/A	11,615	51,964	36,768		47,037	12,552	-	27,707	-
Tenure-Track Faculty FTE		19.00	9.50	4.33	N/A	6.50	14.00	22.55	See	17.60	11.00	21.88	12.67	4.54
ASF/Tenure-Track Faculty FTE		2,493	987	301	N/A	1,787	3,712	1,630	Biochemistry	2,673	1,141	-	2,186	-
Total Enrollment (Fall 2002)	22,184													

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

- (1) Botany and Plant Sciences
- (2) Nematology
- (3) Biochemistry
- (4) Biology
- (5) Earth Sciences

Washington State University Departments

Department of Crop and Soil Sciences and Department of Plant Physiology
 Comparable data not available between the two institutions.
 School of Molecular Biosciences: The School offers programs leading to B.S., M.S., and Ph.D. degrees in Biochemistry, Biotechnology, Genetics and Cell Biology, and Microbiology.
 Data for Biochemistry and Cell Biology are included here.
 School of Biological Sciences
 Geology

(6) Math and Statistics ASF data for the Office Facilities category includes all office-related space for all faculty (both research and academic offices).

Top 100 Academic Institutions in Research Expenditures

**National Science Foundation Survey
2001**

TOP 100 ACADEMIC INSTITUTIONS*

INST ID	INSTITUTION
29077	Applied Physics Lab
1081	Arizona State University
4949	Baylor College of Medicine
2130	Boston University
1131	California Institute of Technology
3242	Carnegie Mellon University
3024	Case Western Reserve University
3425	Clemson University
1350	Colorado State University
2707	Columbia University in the City of New York
8779	Cornell University
2920	Duke University
1564	Emory University
1489	Florida State University
1445	Georgetown University
8723	Georgia Institute of Technology
21553	Harvard Faculty of Arts and Sciences
21551	Harvard Medical School
21552	Harvard School of Public Health
8731	Indiana University
1869	Iowa State University
2077	Johns Hopkins University
2010	Louisiana State University, A & M College
2014	Louisiana State University, Health Science Center
2178	Massachusetts Institute of Technology
2290	Michigan State University
2423	Mississippi State University
7026	Mount Sinai School of Medicine
2785	New York University
2972	North Carolina State University
1739	Northwestern University
8802	Ohio State University
4882	Oregon Health Sciences University
3210	Oregon State University
8813	Pennsylvania State University
2627	Princeton University
8732	Purdue University
2807	Rockefeller University
8771	Rutgers, The State University of New Jersey
1305	Stanford University
9554	State University of New York, Buffalo
9555	State University of New York, Stony Brook
3632	Texas A&M University
1892	The University of Iowa
2219	Tufts University
2029	Tulane University
3657	U TX MD Anderson Cancer Center
2620	UMDNJ-New Jersey Medical School

TOP 100 ACADEMIC INSTITUTIONS*

INST ID	INSTITUTION
1052	University of Alabama, Birmingham
29094	University of Alaska Fairbanks
1083	University of Arizona
1312	University of California, Berkeley
1313	University of California, Davis
1314	University of California, Irvine
1315	University of California, Los Angeles
1317	University of California, San Diego
1319	University of California, San Francisco
1320	University of California, Santa Barbara
1774	University of Chicago
8805	University of Cincinnati
4508	University of Colorado Health Sciences Center
1370	University of Colorado, Boulder
4509	University of Colorado, Colorado Springs
6740	University of Colorado, Denver
8718	University of Connecticut
1535	University of Florida
1598	University of Georgia
1610	University of Hawaii
1776	University of Illinois, Chicago
1775	University of Illinois, Urbana-Champaign
29001	University of Kansas
8744	University of Kentucky
2103	University of Maryland College Park
2104	University of Maryland, Baltimore
2221	University of Massachusetts
1536	University of Miami
9091	University of Michigan
8761	University of Minnesota
2516	University of Missouri, Columbia
2565	University of Nebraska, Lincoln
2663	University of New Mexico, Main Campus
2015	University of New Orleans
2974	University of North Carolina, Chapel Hill
8807	University of Oklahoma
3378	University of Pennsylvania
8815	University of Pittsburgh
2894	University of Rochester
8819	University of South Carolina
1537	University of South Florida
1328	University of Southern California
8051	University of Tennessee
3529	University of Tennessee, Chattanooga
3659	University of Texas Health Science Center at San Antonio
4952	University of Texas Medical Branch at Galveston
3660	University of Texas Southwestern Medical Center at Dallas
3658	University of Texas, Austin

TOP 100 ACADEMIC INSTITUTIONS*

INST ID	INSTITUTION
3675	University of Utah
3745	University of Virginia
3798	University of Washington, Seattle
3895	University of Wisconsin, Madison
11618	UT Houston Health Science Center
3677	Utah State University
3535	Vanderbilt University
3754	Virginia Polytechnic Institute and State University
3800	Washington State University
2520	Washington University in St. Louis
2329	Wayne State University
1426	Yale University
2903	Yeshiva University

* Five of the top 100 institutions (Harvard University, University of Colorado, Louisiana State University, University of Tennessee, and Johns Hopkins University) contained 14 separate reporting entities.

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Additional Data/Survey Results:

Space Data for all the Space Types
(excluded from Final Report and Analysis)

University of California, Riverside
College of Natural and Agricultural Sciences

Table 1: Ratio of Research Space (ASF) per Tenure-Track Faculty FTE by Institution

Table 2: Ratio of Average Research Space (ASF) per Tenure-Track Faculty FTE by Institution (excluding UCR)

UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS														
Table 1: Ratio of Research Space (ASF) per Tenure-Track Faculty FTE by Institution														
Institutions	Total Enrollment	Agricultural Sciences					Biological Sciences				Physical Sciences			
		Botany and Plant Sciences	Entomology	Environmental Sciences	Nematology	Plant Pathology	Biochemistry	Biology	Cell Biology and Neuroscience	Chemistry	Earth Sciences	Mathematics **	Physics	Statistics **
Louisiana State University	32,228	N/A	2,604	2,044	N/A	N/A	2,295	2,295	2,295	2,196	1,832	N/A	789	N/A
Mississippi State University	16,610	3,909	4,823	N/A	N/A	4,823	1,392	828	N/A	2,101	945	N/A	784	N/A
North Carolina State University	29,637	2,635	1,989	1,705	2,531	2,782	1,592	1,431	1,496	1,311	1,195	N/A	1,073	N/A
Ohio State University	48,477	2,148	3,257	1,533	N/A	3,289	1,996	2,591	N/A	2,730	2,011	N/A	1,789	N/A
University of California, Berkeley	33,145	1,779	1,525	1,525	N/A	N/A	1,480	1,492	1,985	1,271	58	1,033	126	
University of California, Davis	29,087	3,046	1,785	1,046	2,059	4,059	N/A	1,258	1,225	1,858	579	19	523	14
University of California, Irvine	23,179	N/A	N/A	N/A	N/A	N/A	1,631	1,860	1,205	2,291	822	N/A	1,038	N/A
University of California, Riverside	15,934	4,512	3,160	2,324	3,389	4,102	1,487	1,397	1,065	2,305	999	28	1,109	145
University of Tennessee	27,971	780	363	1,759	363	363	765	1,116	1,466	1,035	395	N/A	629	N/A
Virginia Polytechnic Institute and State University	25,645	N/A	1,153	2,020	N/A	1,963	2,152	1,415	N/A	2,301	1,211	N/A	801	N/A
Washington State University	22,184	4,923	1,984	1,244	N/A	2,933	4,577	3,337	4,577	3,516	1,741	N/A	3,770	N/A

UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS														
Table 2: Ratio of Average Research Space (ASF) per Tenure-Track Faculty FTE by Department (excluding UCR)														
Institutions	Total Enrollment	Agricultural Sciences					Biological Sciences				Physical Sciences			
		Botany and Plant Sciences	Entomology	Environmental Sciences	Nematology	Plant Pathology	Biochemistry	Biology	Cell Biology and Neuroscience	Chemistry	Earth Sciences	Mathematics**	Physics	Statistics **
Louisiana State University	32,228	N/A	2,604	2,044	N/A	N/A	2,295	2,295	2,295	2,196	1,832	N/A	789	N/A
Mississippi State University	16,610	3,909	4,823	N/A	N/A	4,823	1,392	828	N/A	2,101	945	N/A	784	N/A
North Carolina State University	29,637	2,635	1,989	1,705	2,531	2,782	1,592	1,431	1,496	1,311	1,195	N/A	1,073	N/A
Ohio State University	48,477	2,148	3,257	1,533	N/A	3,289	1,996	2,591	N/A	2,730	2,011	N/A	1,789	N/A
University of California, Berkeley	33,145	1,779	1,525	1,525	N/A	N/A	1,480	1,492	1,985	1,271	58	1,033	126	
University of California, Davis	29,087	3,046	1,785	1,046	2,059	4,059	N/A	1,258	1,225	1,858	579	19	523	14
University of California, Irvine	23,179	N/A	N/A	N/A	N/A	N/A	1,631	1,860	1,205	2,291	822	N/A	1,038	N/A
University of California, Riverside	27,971	780	363	1,759	363	363	765	1,116	1,466	1,035	395	N/A	629	N/A
Virginia Polytechnic Institute and State University	25,645	N/A	1,153	2,020	N/A	1,963	2,152	1,415	N/A	2,301	1,211	N/A	801	N/A
Washington State University	22,184	4,923	1,984	1,244	N/A	2,933	4,577	3,337	4,577	3,516	1,741	N/A	3,770	N/A
Total	19,220	19,483	12,876	4,953	20,212	16,400	17,611	13,756	21,324	12,002	77	12,229	140	
Average	2,746	2,165	1,610	1,651	2,887	2,050	1,761	1,965	2,132	1,200	39	1,223	70	

**Data was excluded from all institutions except that of UC Berkeley, UC Davis, and UC Riverside due to inconsistencies in the methodology used for the Departments of Math and Statistics.

Please note the following for the shaded cells:

Louisiana State University: Department of Biochemistry, Department of Biology, and Department of Cell Biology and Neuroscience is combined.

Mississippi State University: Department of Math and Department of Statistics is combined.

Mississippi State University: Department of Entomology and Department of Plant Pathology is combined.

North Carolina State University: Biological Resources Center data is not included here.

Ohio State University: Department of Horticulture and Crop Science; and Central Lab Animal Facilities data is not included here.

University of CA, Berkeley: Department of Entomology and Department of Environmental Sciences data is combined.

University of CA, Berkeley: College of Chemistry data is not included.

University of CA, Irvine: Department of Ecology and Evolutionary Biology data not included here.

University of Tennessee: Department of Entomology, Department of Nematology, and Department of Plant Pathology data is combined.

Washington State University: Department of Biochemistry and Department of Cell Biology and Neuroscience data is combined.

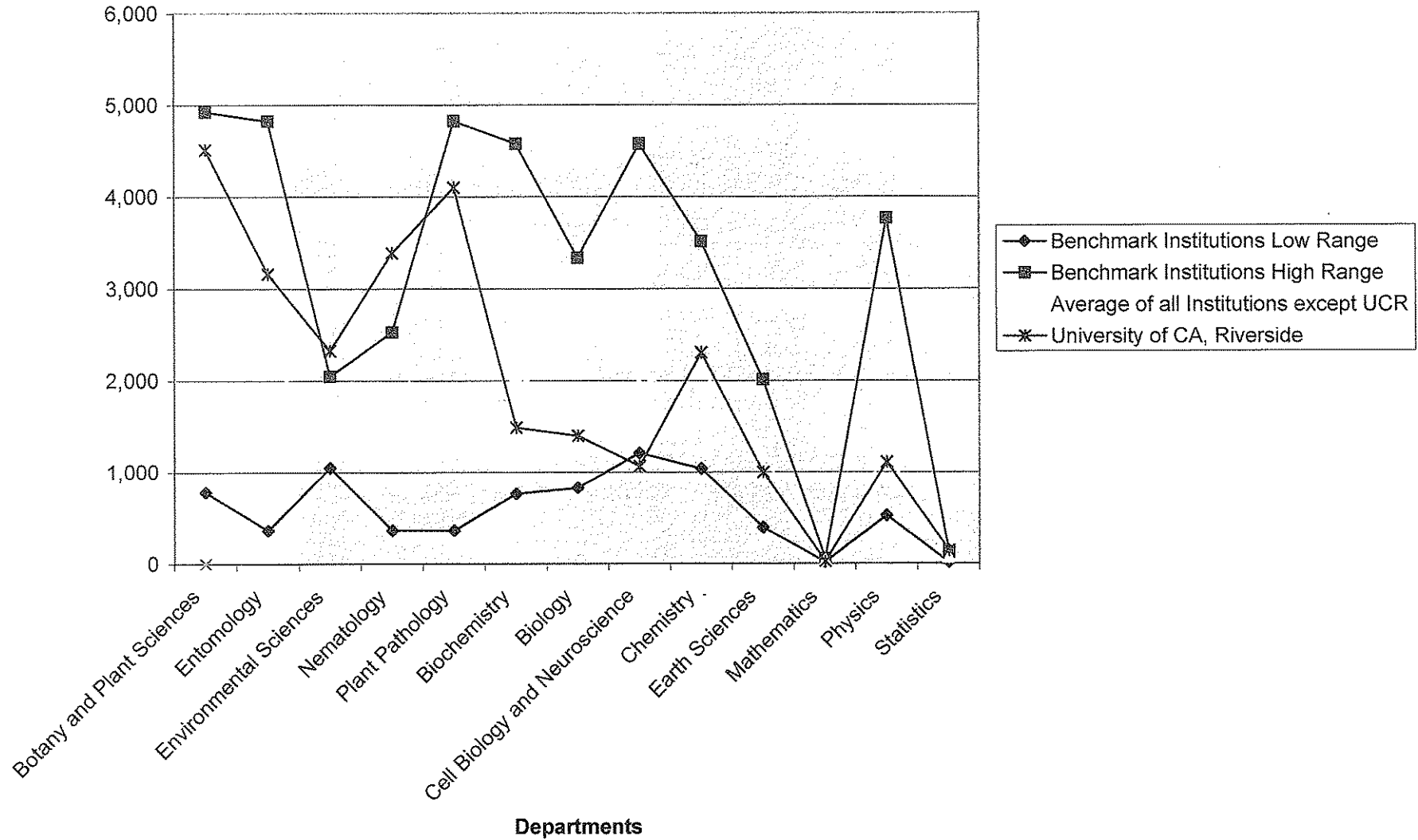
University of California, Riverside
 College of Natural and Agricultural Sciences
 Comparative Table

Low and High Range of Ratios of Research Space (ASF) per Tenure-Track Faculty FTE by Department
 Ratio of Average Research Space (ASF) per Tenure-Track Faculty FTE by Department (excluding UCR)
 Ratio of Research Space (ASF) per Tenure-Track Faculty FTE at UCR by Department

TABLE 3

University of California, Riverside Departments	Benchmark Institutions Low Range		Benchmark Institutions High Range		Average of all Institutions except UCR	University of CA, Riverside
Botany and Plant Sciences	U of TN	780	WA State U	4,923	2,746	4,512
Entomology	U of TN	363	Miss. State U	4,823	2,165	3,160
Environmental Sciences	UC Davis	1,046	LA State U	2,044	1,610	2,324
Nematology	U of TN	363	NC State U	2,531	1,651	3,389
Plant Pathology	U of TN	363	MA State U	4,823	2,887	4,102
Biochemistry	U of TN	765	WA State U	4,577	2,050	1,487
Biology	Miss. State	828	WA State U	3,337	1,761	1,397
Cell Biology and Neuroscience	UC Irvine	1,205	WA State U	4,577	1,965	1,065
Chemistry	U of TN	1,035	WA State U	3,516	2,132	2,305
Earth Sciences	U of TN	395	Ohio State U	2,011	1,200	999
Mathematics	UC Davis	19	UC Berkeley	58	39	28
Physics	UC Davis	523	WA State U	3,770	1,223	1,109
Statistics	UC Davis	14	UC Berkeley	126	70	145

Research Space (ASF) per Tenure-Track Faculty FTE



University of California, Riverside
 College of Natural and Agricultural Sciences
 Comparative Table

Low and High Range of Ratios of Research Space (ASF) per Tenure-Track Faculty FTE by Department
 Ratio of Average Research Space (ASF) per Tenure-Track Faculty FTE by Department (excluding UCR)
 Ratio of Research Space (ASF) per Tenure-Track Faculty FTE at UCR by Department

University of California, Riverside Departments	Benchmark Institutions Low Range	Benchmark Institutions High Range	Average of all Institutions except UCR	University of CA, Riverside
Botany and Plant Sciences	780	4,923	2,746	4,512
Entomology	363	4,823	2,165	3,160
Environmental Sciences	1,046	2,044	1,610	2,324
Nematology	363	2,531	1,651	3,389
Plant Pathology	363	4,823	2,887	4,102
Biochemistry	765	4,577	2,050	1,487
Biology	828	3,337	1,761	1,397
Cell Biology and Neuroscience	1,205	4,577	1,965	1,065
Chemistry	1,035	3,516	2,132	2,305
Earth Sciences	395	2,011	1,200	999
Mathematics	19	58	39	28
Physics	523	3,770	1,223	1,109
Statistics	14	126	70	145

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 Louisiana State University
 Baton Rouge, Louisiana

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences					Biological Sciences			Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Sciences (1)	Entomology	Environmental Sciences	Nematology (1)	Plant Pathology (1)	Biochemistry (2)	Biology (2)	Cell Biology and Neuroscience (2)	Chemistry	Earth Sciences	Mathematics	Physics	Statistics
Research Laboratory/Service	250/255		7,754	12,202		12,441		91,199		35,969	19,995	15,640	11,720	0
Office Facilities	300-355		1,752	5,316		1,766		23,005		16,494	13,648	0	14,553	4,489
Study Facilities	400-455		0	0		0		0		8,739	120	0	2,632	0
Field Building	560		0	0		0		0		0	0	0	0	0
Animal Quarters/Service	570/575		0	0		0		0		0	0	0	0	0
Greenhouse/Service	580/585		0	0		0	1,914		0	0	0	0	0	0
Shop/Service	720/725		0	0		0			1,012	0	0	830	0	
Total ASF		NA	9,506	17,518	N/A	14,207	116,118		62,214	33,763	15,640	29,735	4,489	
Tenure-Track Faculty FTE		N/A	3.65	8.57	N/A	N/A	See	50.59	See	28.33	18.43	44.70	37.71	6.69
ASF/Tenure-Track Faculty FTE		N/A	2,604	2,044	N/A	N/A	Biology	2,295	Biology	2,196	1,832	350	789	671
Total Enrollment (Fall 2002)	32,228													

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments Louisiana State University Departments

(1) Comparable data not available between the two institutions.

(2) The data in the Biology Department column includes the Departments of Biology, Biochemistry, and Cell Biology and Neuroscience at Louisiana State University.

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences				Biological Sciences				Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Sciences (2)	Entomology (3)	Environmental Sciences (1)	Nematology (1)	Plant Pathology (3)	Biochemistry (4)	Biology	Cell Biology and Neuroscience (1)	Chemistry	Earth Sciences (5)	Mathematics (6)	Physics (7)	Statistics (6)
Research Laboratory/Service	250/255	34,968	46,644				7,332	11,218		15,307	0	0	2,269	
Office Facilities	300-355	17,293	11,870				2,414	0		5,699	9,145	8,093	7,376	
Study Facilities	400-455	3,520	239				0	0		0	306	0	972	
Field Building	560	0	0				0	0		0	0	0	0	
Animal Quarters/Service	570/575	0	0				0	2,851		0	0	0	0	
Greenhouse/Service	580/585	14,572	3,948				0	0		0	0	0	0	
Shop/Service	720/725	0	0				0	0		0	0	0	1,929	
Total ASF		70,353	62,701	N/A	N/A		9,746	14,069	N/A	21,006	9,451	8,093	12,546	
Tenure-Track Faculty FTE		18.00	13.00	N/A	N/A	See	7.00	17.00	N/A	10.00	10.00	23.00	16.00	See
ASF/Tenure-Track Faculty FTE		3,909	4,823	N/A	N/A	Entomology	1,392	828	N/A	2,101	945	352	784	Math
Total Enrollment (Fall 2002)	16,610													

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

(1) Comparable data is not available between the two institutions.

(2) Botany and Plant Sciences

(3) Entomology; Plant Pathology

(4) Biochemistry

(5) Earth Sciences

(6) Mathematics and Statistics

(7) Physics

Mississippi State University Departments

Plant and Soil Science

Department of Entomology and Department of Plant Pathology is combined at Mississippi State University.

Biochemistry and Molecular Biology

Geosciences

Department of Math and Department of Statistics are combined at Mississippi State University.

Physics and Astronomy

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)													
		Agricultural Sciences					Biological Sciences				Physical Sciences				
Space Types	NCES* Room Use Code	Botany and Plant Science (1)	Entomology	Environmental Sciences (2)	Nematology (3)	Plant Pathology	Biochemistry	Biology (4)	Cell Biology and Neuroscience (5)	Chemistry	Earth Sciences (6)	Mathematics	Physics	Statistics	Biological Resources Center (7)
Research Laboratory/Service	250/255	58,929	17,684	19,130	17,735	25,675	18,477	22,685	14,140	32,430	23,703	270	17,986	2,807	1,019
Office Facilities	300-355	55,085	17,072	14,213	7,456	15,021	5,204	21,701	3,809	19,062	18,545	17,682	26,495	17,805	670
Study Facilities	400-455	800	0	0	0	225	0	209	0	939	434	658	1,030	2,207	0
Field Building	560	23,537	4,328	859	5,254	8,191	0	0	0	0	0	0	0	0	0
Animal Quarters/Service	570/575	108	3,108	0	0	0	201	2,424	0	0	0	0	0	0	6,108
Greenhouse/Service	580/585	115,651	7,523	5,905	7,514	31,560	0	193	0	0	0	0	0	0	0
Shop/Service	720/725	6,780	0	820	0	0	0	0	0	0	2,731	0	647	0	0
Total ASF		260,870	49,715	40,927	37,959	80,672	23,882	47,212	17,949	52,431	45,413	18,610	46,158	22,819	7,797
Tenure-Track Faculty FTE		99.00	25.00	24.00	15.00	29.00	15.00	33.00	12.00	40.00	38.00	61.00	43.00	35.00	1.00
ASF/Tenure-Track Faculty FTE		2,635	1,989	1,705	2,531	2,782	1,592	1,431	1,496	1,311	1,195	305	1,073	652	7,797
Total Enrollment (Fall 2002)	29,637														

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

- (1) Botany and Plant Sciences
- (2) Environmental Sciences
- (3) Nematology
- (4) Biology
- (5) Cell Biology and Neuroscience
- (6) Earth Sciences

North Carolina State University Departments

- Department of Botany, Department of Horticultural Science, and Department of Crop Science are combined.
- Soil Science
- Genetics
- Biological Sciences and Zoology
- Microbiology
- Marine, Earth and Atmospheric Sciences

(7) Biological Resources Center provides research support (Animal Quarters) to the following NCSU departments: Toxicology, Microbiology, Genetics, Zoology, Biochemistry, Animal Science and Food Science.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 Ohio State University
 Columbus, Ohio

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)														
		Agricultural Sciences					Biological Sciences				Physical Sciences					
Space Types	NCES* Room Use Code	Botany and Plant Sciences (2)	Entomology	Environmental Sciences (5)	Nematology (1)	Plant Pathology	Biochemistry	Biology (3)	Cell Biology and Neuroscience (1)	Chemistry	Earth Sciences	Mathematics (4)	Physics	Statistics (4)	Horticulture and Crop Science (6)	Central Lab Animal Facilities (7)
Research Laboratory/Service	250/255	13,018	26,821	19,739		6,669	20,503	29,746		100,202	37,691		66,982		37,165	6,249
Office Facilities	300-355	1,410	7,029	3,302		935	3,454	1,135		4,495	10,580		20,520		5,060	3,085
Study Facilities	400-455	0	383	0		0	0	0		402	0		1,063		0	0
Field Building	560	0	0	718		0	0	0		0	0		0		34,521	0
Animal Quarters/Service	570/575	0	0	0		0	0	213		0	0		0		9,504	80,260
Greenhouse/Service	580/585	4,900	3,220	0		5,553	0	0		0	0		0		36,293	0
Shop/Service	720/725	0	0	0		0	0	0		0	0		0		0	0
Total ASF		19,328	37,453	23,759	N/A	13,157	23,957	31,094	N/A	105,099	48,271	N/A	88,565	N/A	122,543	89,594
Tenure-Track Faculty FTE		9.00	11.50	15.50	N/A	4.00	12.00	12.00	N/A	38.50	24.00	N/A	49.50	N/A	8.50	--
ASF/Tenure-Track Faculty FTE		2,148	3,257	1,533	N/A	3,289	1,996	2,591	N/A	2,730	2,011	N/A	1,789	N/A	14,417	--
Total Enrollment (Fall 2002)	48,477															

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments Ohio State University Departments

(1) Comparable data is not available between the two institutions.

(2) Botany and Plant Sciences Plant Biology

(3) Biology Microbiology

(4) Departments of Mathematics and Statistics Data for these two departments is not readily available.

(5) Environmental Sciences School of Natural Resources within the College of Food, Agricultural, and Environmental Sciences is an interdisciplinary program focusing on the science and management of natural resources and the environment. Undergraduate majors and concentration areas include: Environmental Science; Fisheries and Wildlife Management; Forestry and Urban Forestry; Human Dimensions of Natural Resources and Environment; and Natural Resources Management Minor. The three graduate programs are: Natural Resources; Soil Science; and Environmental Science Interdisciplinary Graduate Program.

(6) Programs include: Agronomic crop management, arboriculture, crop ecophysiology, digital technology applications in plant science, floriculture, forage physiology and management, fruit and vegetable crop management, golf and sports turf landscape design, greenhouse management, landscape ecology, ornamental horticulture, ornamental nursery management, plant biotechnology, plant breeding and genetics, plant molecular biology, plant physiology and biochemistry, seed science, turfgrass science, viticulture and enology, and weed science ecology.

(7) Most lab animal facilities are part of a central university-wide operation, rather than being assigned to individual departments. This space is listed in its own column here. The association of lab animal space with specific disciplines is not easily determined.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 University of California, Berkeley
 Berkeley, California

			UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS													
			Agricultural Sciences				Biological Sciences				Physical Sciences					
Space Types	NCES* Room Use Code	University of CA Room Use Code	Botany and Plant Sciences (2)	Entomology (3)	Environmental Sciences (4)	Nematology (1)	Plant Pathology (1)	Biochemistry (5)	Biology (6)	Cell Biology and Neuroscience (7)	Chemistry	Earth Sciences (8)	Mathematics	Physics	Statistics	College of Chemistry (9)
Research Laboratory/Service	250/255	210/225/250/255	49,704	67,012					53,824	111,028	91,608	15,137	3,059	40,337	1,251	24,266
Office Facilities	300-355	211/226	1,638	16,131					0	5,941	17,395	5,322	438	14,052	1,615	580
Study Facilities	400-455	N/A	0	0					0	0	0	0	0	0	0	0
Field Building	560	570	0	121					0	0	0	0	0	0	0	0
Animal Quarters/Service	570/575	580/585	0	0					0	0	0	0	0	0	0	0
Greenhouse/Service	580/585	590/595	19,529	45,182					1,947	0	0	0	0	0	0	0
Shop/Service	720/725	710/715/720	2,212	9,284					5,120	6,112	2,769	9,426	960	10,710	316	12,133
Total ASF			73,083	137,730		N/A	N/A	N/A	60,891	123,081	111,772	29,885	4,457	65,099	3,182	36,979
Tenure-Track Faculty FTE			41.07	90.31	See	N/A	N/A	N/A	41.14	82.51	58.30	23.52	77.03	63.03	25.26	N/A
ASF/Tenure-Track Faculty FTE			1,779	1,525	Entomology	N/A	N/A	N/A	1,480	1,492	1,985	1,271	58	1,033	126	N/A
Total Enrollment (Fall 2002)	33,145															

*National Center for Educational Statistics

Departments within this Benchmark institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

University of California, Berkeley Departments

(1) Comparable data not available between the two institutions.

(2) Botany and Plant Science

Plant Biology

(3) Entomology

Department of Environmental Science, Policy and Management at Berkeley includes both Entomology and Environmental Sciences.

(4) Environmental Sciences

Department of Environmental Science, Policy and Management at Berkeley includes both Entomology and Environmental Sciences.

(5) Biochemistry

For decades, Berkeley has had a building called Biochemistry, recently re-named at Barker Hall, which is now used primarily by the Department of Molecular and Cell Biology.

(6) Biology

Integrated Biology

(7) Cell Biology and Neuroscience

Molecular and Cell Biology

(8) Earth Sciences

Earth and Planetary Science

(9) The College of Chemistry at UC Berkeley has two Departments - Chemistry and Chemical Engineering. Space allocated here supports both departments.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 University of California, Davis
 Davis, California

			UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
			Agricultural Sciences					Biological Sciences				Physical Sciences			
Space Types	NCES* Room Use Code	University of CA Room Use Code	Botany and Plant Sciences (1)	Entomology	Environmental Sciences (2)	Nematology	Plant Pathology	Biochemistry (3)	Biology (4)	Cell Biology and Neuroscience (5)	Chemistry	Earth Sciences (6)	Mathematics	Physics	Statistics
Research Laboratory/Service	250/255	210/225/250/255	21,086	24,433	22,939	5,754	38,705		7,202	62,531	58,881	8,387	975	14,317	226
Office Facilities	300-355	211/226	-	762	4,080	323	1,721		3,222	658	5,756	1,643	-	2,458	-
Study Facilities	400-455	N/A	-	-	-	-	-		-	-	-	-	-	-	-
Field Building	560	570	1,815	8,038	-	-	4,902		5,736	-	-	-	-	-	-
Animal Quarters/Service	570/575	580/585	-	364	-	-	-		180	1,443	-	-	-	-	-
Greenhouse/Service	590/595	590/595	16,977	4,418	-	6,237	32,646		415	-	-	-	-	-	-
Shop/Service	720/725	710/715/720	-	1,198	194	-	31		-	893	2,514	962	-	3,624	-
Total ASF			39,878	39,213	27,213	12,314	78,005	N/A	16,765	65,525	67,151	10,992	975	20,399	226
Tenure-Track Faculty FTE			13.09	21.97	26.02	5.98	19.22	N/A	13.32	53.47	36.15	18.98	51.83	38.99	16.11
ASF/Tenure-Track Faculty FTE			3,046	1,785	1,046	2,059	4,059	N/A	1,258	1,225	1,858	579	19	523	14
Total Enrollment	29,087														

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments	University of California, Davis Departments
(1) Botany and Plant Science	Plant Biology
(2) Environmental Sciences	There are two departments at UCD that are comparable: Department of Toxicology; and Department of Environmental Science and Policy. The data for the two departments are combined. Department of Toxicology: Research Lab/Service: 14,600 ASF, Office Facilities: 378 ASF; Total ASF: 14,978; Tenure-Track FTE: 8.68 Department of Environmental Science and Policy: Research Lab/Service: 8,339 ASF, Office Facilities: 3702 ASF; Shop/Service: 194ASF; Total ASF: 12,235; Tenure-Track FTE: 17.34
(3) Comparable data not available between the two departments.	
(4) Biology	Wildlife, Fish and Conservation Biology
(5) Cell Biology and Neuroscience	There are two departments at UCD that are comparable: Department of Molecular and Cellular Biology; and Department of Neurobiology, Physiology, and Behavior. The data for the two departments are combined. Data by department: Department of Molecular and Cellular Biology: Research Lab/Service: 45,445 ASF; Office Facilities: 162 ASF; Animal Quarters: 611 ASF; Greenhouse/Service 493 ASF; Total ASF: 46,711; Tenure-Track Faculty FTE: 32.23 Dept. of Neurobiology, Physiology, and Behavior: Research Lab/Service: 17,088 ASF; Office Facilities: 496 ASF; Animal Quarters: 832 ASF; Shop/Service 400 ASF; Total ASF: 18,814; Tenure-Track Faculty FTE: 21.24
(6) Earth Sciences	Geology

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF) **														
		Agricultural Sciences					Biological Sciences				Physical Sciences					
Space Types	NCES* Room Use Code	University of CA Room Use Code	Botany and Plant Sciences (1)	Entomology (1)	Environmental Sciences (1)	Nematology (1)	Plant Pathology (1)	Biochemistry (2)	Biology	Cell Biology and Neuroscience (3)	Chemistry	Earth Sciences (4)	Mathematics	Physics	Statistics (1)	Ecology and Evolutionary Biology (5)
Research Laboratory/Service	250/255	210/225/250/255						46,709	11,958	57,821	100,578	8,481	1,601	38,203		34,611
Office Facilities	300-355	211/226						3,036	110	0	6,246	4,663	7,483	9,845		1,000
Study Facilities	400-455	N/A						0	0	0	0	0	0	0		0
Field Building	560	570						0	0	0	0	0	0	0		0
Animal Quarters/Service	570/575	580/585						0	0	0	0	0	0	0		2,160
Greenhouse/Service	580/585	590/595						0	9,886	0	0	0	0	0		0
Shop/Service	720/725	710/715/720						0	10,280	0	833	0	0	2,806		3,432
Total ASF			N/A	N/A	N/A	N/A	N/A	49,745	32,236	57,821	107,657	13,144	9,084	50,854	N/A	41,203
Tenure-Track Faculty FTE			N/A	N/A	N/A	N/A	N/A	30.50	17.33	48.00	47.00	16.00	42.00	49.00	N/A	32.67
ASF/Tenure-Track Faculty FTE			N/A	N/A	N/A	N/A	N/A	1,631	1,860	1,205	2,291	822	216	1,038	N/A	1,261
Total Enrollment	23,179															

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

University of California, Irvine Departments

(1) Comparable data not available between the two institutions.

(2) Biochemistry

Molecular Biology and Biochemistry

(3) Cell Biology and Neuroscience

There are two departments at UCI that are comparable: Department of Development and Cell Biology; and Department of Neurobiology and Behavior. The data for the two departments are combined.

Data by department: Department of Development and Cell Biology: Research Lab Service: 35,517 ASF; Total ASF 35,517 Tenure Track Faculty FTE: 27

Department of Neurobiology and Behavior: Research Lab Service: 22,304 ASF; Total ASF: 22,304; Faculty FTE: 21

(4) Earth Sciences

Earth System Science

(5) Additional Department at Irvine: Department of Ecology and Evolutionary Biology.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 University of California, Riverside
 Riverside, California

			UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
			Agricultural Sciences					Biological Sciences				Physical Sciences			
Space Types	NCES* Room Use Code	University of CA Room Use Code	Botany and Plant Sciences	Entomology	Environmental Sciences	Nematology	Plant Pathology	Biochemistry	Biology	Cell Biology and Neuroscience	Chemistry	Earth Sciences	Mathematics	Physics	Statistics
Research Laboratory/Service	250/255	210/225/250/255	30,068	61,151	22,506	6,116	21,249	20,483	22,463	14,880	46,850	8,373	688	19,111	1,304
Office Facilities	300-355	211/226	1,702	4,308	3,262	305	3,049	2,354	2,230	1,683	5,346	2,004	0	2,386	0
Study Facilities	400-455	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0
Field Building	560	570	25,076	4,021	6,032	3,051	12,029	0	0	0	0	0	0	0	0
Animal Quarters/Service	570/575	580/585	0	0	0	0	0	0	347	0	0	0	0	0	0
Greenhouse/Service	580/585	590/595	55,353	18,843	12,944	11,798	29,562	0	2,361	0	0	0	0	0	0
Shop/Service	720/725	710/715/720	1,948	3,794	2,920	82	157	206	2,627	62	3,354	1,531	0	3,277	0
Total ASF			114,147	92,117	47,664	21,352	66,046	23,043	30,028	16,645	55,550	11,908	688	24,774	1,304
Tenure-Track Faculty FTE**			25.30	29.15	20.51	6.30	16.10	15.50	21.50	15.63	24.10	11.92	25.00	22.34	9.00
ASF/Tenure-Track Faculty FTE			4,512	3,160	2,324	3,389	4,102	1,487	1,397	1,065	2,305	999	28	1,109	145
Total Enrollment (Fall 2002)	15,934														

*National Center for Educational Statistics

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences					Biological Sciences				Physical Sciences			
Space Types	NCES* Room Use Code	Botany and Plant Sciences	Entomology (1)	Environmental Sciences	Nematology (1)	Plant Pathology (1)	Biochemistry (2)	Biology	Cell Biology and Neuroscience	Chemistry	Earth Sciences	Mathematics	Physics	Statistics (3)
Research Laboratory/Service	250/255	12,140	287	23,157			15,599	24,591	32,178	24,587	4,739	0	5,794	
Office Facilities	300-355	1,499	914	6,267			473	5,297	3,016	2,536	0	307	9,264	
Study Facilities	400-455	0	0	480			0	257	0	0	0	0	0	
Field Building	560	0	0	0			0	0	0	0	0	0	0	
Animal Quarters/Service	570/575	0	0	0			0	0	0	0	0	0	0	
Greenhouse/Service	580/585	13,672	3,519	0			0	0	0	0	0	0	0	
Shop/Service	720/725	0	0	0			0	0	0	1,852	0	0	2,564	
Total ASF		27,311	4,720	29,904			16,072	30,145	35,194	28,975	4,739	307	17,622	N/A
Tenure-Track Faculty FTE		35.00	13.00	17.00	See	See	21.00	27.00	24.00	28.00	12.00	36.00	28.00	10.00
ASF/Tenure-Track Faculty FTE		780	363	1,759	Entomology	Entomology	765	1,116	1,466	1,035	395	9	629	N/A
Total Enrollment (Fall 2002)	27,971													

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

(1) Entomology, Nematology, and Plant Pathology

(2) Biochemistry

(3) Statistics

University of Tennessee Departments

Department of Entomology, Department of Nematology, and Department Plant Pathology are combined.

Biochemical and Cell Molecular Biology

Space data is not available for this Department, pending a facilities database conversion.

University of California, Riverside
 College of Natural and Agricultural Sciences
 Survey Results
 2002-2003
 Virginia Polytechnic Institute and State University
 Blacksburg, Virginia

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences					Biological Sciences				Physical Sciences			
Space Types	NCES* Room Use Code	Botany and Plant Sciences (1)	Entomology	Environmental Sciences (2)	Nematology (1)	Plant Pathology (3)	Biochemistry	Biology	Cell Biology and Neuroscience (1)	Chemistry	Earth Sciences (4)	Mathematics	Physics	Statistics
Research Laboratory/Service	250/255		6821	15366		18735	28996	33767		48815	15265	3236	10109	869
Office Facilities	300-355		4031	4738		4242	7165	10189		7117	5753	393	2493	2912
Study Facilities	400-455		795	295		0	0	0		807	0	231	2086	227
Field Building	560		0	14798		4231	0	0		0	0	0	0	0
Animal Quarters/Service	570/575		803	0		0	0	2919		0	0	0	0	0
Greenhouse/Service	580/585		4845	7221		8134	0	4078		0	0	0	0	0
Shop/Service	720/725		0	0		0	0	0		3095	781	0	3737	0
Total ASF		N/A	17,295	42,418	N/A	35,342	36,161	50,953	N/A	59,834	21,799	3,860	18,425	4,008
Tenure-Track Faculty FTE		N/A	15.00	21.00	N/A	18.00	16.80	36.00	N/A	26.00	18.00	46.30	23.00	14.00
ASF/Tenure-Track Faculty FTE		N/A	1,153	2,020	N/A	1,963	2,152	1,415	N/A	2,301	1,211	83	801	286
Total Enrollment (Fall 2002)	25,645													

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

(1) Comparable data is not available between the two institutions.

(2) Environmental Sciences

(3) Plant Pathology

(4) Earth Sciences

Virginia Polytechnic Institute and State University Departments

Crop and Soil Environmental Sciences

Plant Pathology, Physiology and Weed Science

Geological Sciences

		UNIVERSITY OF CALIFORNIA, RIVERSIDE DEPARTMENTS (ASF)												
		Agricultural Sciences					Biological Sciences				Physical Sciences			
Space Types	NCES* Room Use Code	Botany and Plant Sciences (1)	Entomology	Environmental Sciences	Nematology (2)	Plant Pathology	Biochemistry (3)	Biology (4)	Cell Biology and Neuroscience (3)	Chemistry	Earth Sciences (5)	Mathematics (6)	Physics	Statistics (6)
Research Laboratory/Service	250/255	47,365	9,374	1,304		11,615	51,964	36,768		47,037	12,552	0	27,707	0
Office Facilities	300-355	15,494	4,073	3,680		4,785	11,656	13,968		14,845	5,698	12,593	20,072	2,243
Study Facilities	400-455	0	186	0		0	0	231		0	901	691	0	0
Field Building	560	26,046	0	0		2,662	0	0		0	0	0	0	0
Animal Quarters/Service	570/575	0	3,288	0		0	406	14,924		0	0	0	0	0
Greenhouse/Service	580/585	1,056	1,278	400		0	46	9,374		0	0	0	0	0
Shop/Service	720/725	3,577	645	0		0	0	0		0	0	0	0	0
Total ASF		93,538	18,844	5,384	N/A	19,062	64,072	75,265		61,882	19,151	13,284	47,779	2,243
Tenure-Track Faculty FTE		19.00	9.50	4.33	N/A	6.50	14.00	22.55	See	17.60	11.00	21.88	12.67	4.54
ASF/Tenure-Track Faculty FTE		4,923	1,984	1,244	N/A	2,933	4,577	3,337	Biochemistry	3,516	1,741	607	3,770	494
Total Enrollment (Fall 2002)		22,184												

*National Center for Educational Statistics

Departments within this Benchmark Institution did not correspond exactly to those at the University of California, Riverside. Please note the following differences:

University of California, Riverside Departments

- (1) Botany and Plant Sciences
- (2) Nematology
- (3) Biochemistry
- (4) Biology
- (5) Earth Sciences

Washington State University Departments

- Department of Crop and Soil Sciences and Department of Plant Physiology
- Comparable data not available between the two institutions.
- School of Molecular Biosciences: The School offers programs leading to B.S., M.S., and Ph.D. degrees in Biochemistry, Biotechnology, Genetics and Cell Biology, and Microbiology. Data for Biochemistry and Cell Biology are included here.
- School of Biological Sciences
- Geology

(6) Math and Statistics ASF data for the Office Facilities category includes all office-related space for all faculty (both research and academic offices).