



AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE

STATE R&D PROFILE

Kentucky



Table 1. Federal R&D to Kentucky by Agency and Performer, Fiscal Year 2000
(obligations in millions of dollars)

Performers	Agencies							TOTAL
	HHS	DOD	NSF	USDA	DOE	NASA	other	
Federal Labs	0	6	0	0	0	0	1	8
Industry	67	8	0	0	0	0	0	76
Univs. / Colleges	78	5	14	11	5	3	1	115
FFRDCs *	0	0	0	0	0	0	0	0
Nonprofits	0	0	0	0	0	2	0	2
State / Local Govts.	5	0	0	0	0	0	0	6
Total Kentucky	151	19	14	11	5	5	2	206
U.S. Total	18,577	33,010	2,930	1,830	6,872	9,714	2,818	75,751
KY % of U.S.	0.8%	0.1%	0.5%	0.6%	0.1%	0.0%	0.1%	0.3%

Source: National Science Foundation, *Federal Funds for Research and Development Fiscal Years 2000, 2001, and 2002*, 2002.

R&D data are for the 10 largest R&D supporting agencies only.

* Federally Funded Research and Development Centers. Government-owned, contractor-operated laboratories.

R&D = conduct of R&D and R&D plant (facilities and capital equipment).

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This AAAS State R&D Profile is one of a series of reports on the state and regional impacts of federal R&D, produced in cooperation with the AAAS Center for Science, Technology, and Congress from data provided by the National Science Foundation Division of Science Resources Statistics. More information on these reports, summary tables on R&D in the states, current profiles of the other states, and full-color, full-size versions of these charts are all available in the "State and Regional Reports" section of the AAAS R&D Web site (<http://www.aaas.org/spp/rd>). These profiles will be updated annually as new data become available.

AAAS State R&D Profiles - Kentucky

- Kentucky received \$206 million in federal R&D funds in FY 2000, or 0.3 percent of the national total, which gives it a ranking of 41st among the 50 states and the District of Columbia. The state is home to 4.1 million people, 1.4 percent of the total U.S. population (25th in rank), and its gross state product in 2000 was \$119 billion (1.2 percent of the national gross domestic product and 27th among the 50 states and DC; see Facts and Rankings).

- Kentucky ranks 50th in federal R&D per capita with \$51 per person, less than one-fifth the national average of \$269. Kentucky is a participant in the Experimental Program to Stimulate Competitive Research (EPSCoR) started by NSF to help states that traditionally have been underrepresented as recipients of federal R&D funds to become more competitive in winning federal R&D dollars. The program has expanded to include funding from other federal agencies such as DOE, DOD, USDA, EPA, and NASA. Kentucky also participates in the Institutional Development Award (IDeA) program, a program administered by NIH that is designed to foster research in states that have not traditionally received significant levels of competitive funding from NIH.

- Most of Kentucky's federal R&D support in FY 2000 came from HHS, which contributed \$151 million, or nearly three-fourths of total federal support (see Table 1 and Chart 1).

- Kentucky's largest research university is the University of Kentucky in Lexington, which ranked 47th among universities nationwide in total R&D expenditures in FY 2000 with \$202 million (see Table 3). However, thanks to generous institutional support of R&D, just 36.5 percent came from federal funding sources.

- The University of Kentucky is nonetheless the largest academic performer of federal R&D in the state. Of the \$115 million in total federal funding to Kentucky's universities and colleges in FY 2000, the institution (including all of its campuses) received \$88 million (see Table 2 and Chart 4). This included \$60 million from HHS, \$11 million from NSF, \$8 million from USDA, and \$5 million from DOE. The university ranked 63rd in the nation in federal R&D support. The Lexington campus houses several major research centers, including the Center on Aging, which conducts cutting edge work on Alzheimer's disease, and the Markey Cancer Center.

- The University of Louisville and Kentucky State University also receive significant federal R&D funding, primarily from HHS and USDA. The University of Louisville's Health Sciences Center performs leading research on areas such as heart disease and the role of genetics in the aging process, while Kentucky State University houses a major land grant program that conducts research in aquaculture, human health and nutrition, and plant and soil science.

- Just \$8 million in federal R&D funds went to federal labs in Kentucky (see Table 1 and Chart 2). Most of this went to the DOD's Armored Forces Research Unit in Fort Knox, which conducts R&D on improved training methods and technologies; DOD's Mounted Maneuver Battlespace Battle Laboratory, also in Fort Knox, which conducts research for the Army on mounted maneuvers at the brigade level and below; and the Department of the Interior's Kentucky District Office of Water Resources, a unit of the US Geological Survey which performs research in a variety of areas related to groundwater.

- Total R&D performance in the state was \$866 million in 2000 (see Table 4). Of this amount, some 70 percent was funded by industry, as compared with the federal government's 12 percent funding share of the state's R&D activity.

- Federal R&D to Kentucky has fluctuated greatly over the past few decades, but has mostly hovered around \$100 million a year in today's dollars (see Chart 5). Most of the upswings have been due to large R&D contracts of limited duration for DOD's labs in the state. Kentucky has never received more than 0.5 percent of the federal R&D portfolio (see Chart 6), far below the state's share of the U.S. population.

Click on the charts to view or download full-size color PDF versions of these charts.

**Table 2. Federal R&D to Kentucky Universities and Colleges,
Fiscal Year 2000**
(obligations in millions of dollars)

	HHS	NSF	USDA	DOE	DOD	NASA	other	TOTAL
U Kentucky (63)	60	11	8	5	1	1	1	88
U Louisville (148)	18	2	0	0	1	0	0	21
KY State U	0	0	2	0	0	0	0	3
All Other	1	0	0	0	1	2	1	4
Total Kentucky	79	14	11	5	3	3	1	115
U.S. Total	10,533	2,475	564	696	1,832	872	557	17,529
KY % of U.S.	0.7%	0.6%	1.9%	0.7%	0.2%	0.3%	0.3%	0.7%

Source: National Science Foundation, *Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, Fiscal Year 2000*, 2002.

Figures may differ from other tables because of differing survey methods.

Figures in parentheses denote national rank among universities and colleges in federal R&D funds received.

R&D = conduct of R&D and R&D plant (facilities and capital equipment).

**Table 3. Total R&D Expenditures at Kentucky Universities and Colleges
by Source of Funds, Fiscal Year 2000**
(expenditures in millions of dollars)

	Federal	State/ Local	Industry	Institutional Funds	All Other	TOTAL R&D	Federal / Total R&D
U Kentucky (47)	74	19	11	86	12	202	36.5%
U Louisville (124)	18	2	7	33	5	64	27.6%
All Other	5	1	0	2	0	8	60.6%
Total Kentucky	96	22	18	121	17	274	35.1%
U.S. Total	17,493	2,204	2,178	5,924	2,262	30,062	58.2%
KY % of U.S.	0.6%	1.0%	0.8%	2.0%	0.7%	0.9%	

Source: National Science Foundation, *Survey of Research and Development Expenditures at Universities and Colleges, Fiscal Year 2000*, 2002.

These data differ significantly from the federal R&D data for the following reasons:

1/ data are from performer surveys rather than funding sources; 2/ data are in expenditures rather than obligations; and 3/ R&D in this survey does not include R&D facilities.

Figures in parentheses denote national rank among universities and colleges in total R&D performed.

Table 4. Total R&D (all funding sources) in Kentucky by Funding Source and Performer, 2000
(expenditures in millions of dollars)

Performers	Funding Sources					Total
	Federal Government	Industry	Univs./ Colleges	State / Local Government	Nonprofits	
Federal Labs	8	--	--	--	--	8
Industry	1	581	--	--	--	582
Universities / Colleges	96	18	121	22	17	274
FFRDCs*	0	--	--	--	--	0
Nonprofits	2	--	--	--	--	2
Total Kentucky	107	599	121	22	17	866
U.S. Total	66,208	182,622	6,210	2,257	7,320	264,617
KY % of U.S.	0.2%	0.3%	2.0%	1.0%	0.2%	0.3%

Source: National Science Foundation, 2002.

* Federally Funded Research and Development Centers. Government-owned, contractor-operated laboratories. FFRDCs operated by universities/colleges and nonprofits only. Industry FFRDCs are included under industry.

Industry funding of nonprofit R&D is not included in state data, but is included in national totals.

Industry funding of industry R&D includes all non-federal funding of industry-performed R&D.

Nonprofit support for nonprofits is not included in state data, but is included in national totals.

Nonfederal support for FFRDCs and nonprofits are not included.

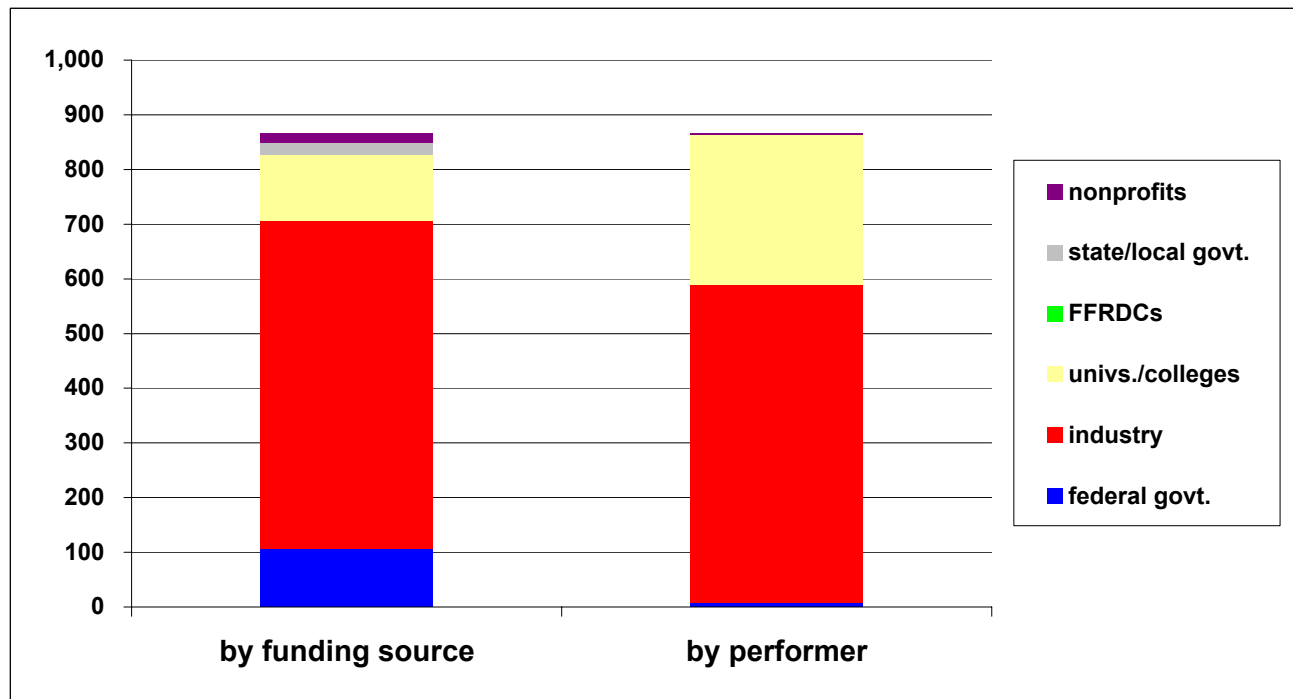
State and local government performance of R&D is not included.

Conduct of R&D only (R&D facilities and capital equipment excluded).

These data differ significantly from the federal R&D data for the following reasons:

1/ data are for calendar year 2000 rather than FY 2000; 2/ data are from performer surveys rather than funding sources; and 3/ data are in expenditures rather than obligations.

Chart. Total R&D in Kentucky by Funding Source and by Performer, 2000
expenditures in millions of dollars



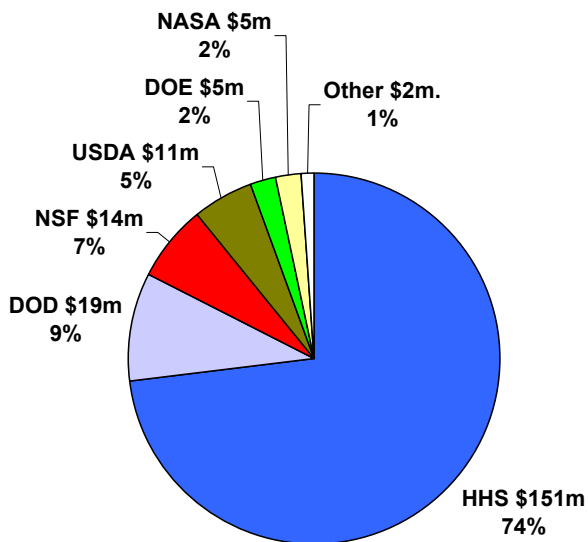
Facts and Rankings for Kentucky

	KY		U.S.	KY % of U.S.	Rank *
Total Federal R&D	206 million \$ ('00)		75,751	0.3%	41
Population	4.05 million ('00)		282.13	1.4%	25
Federal R&D Per Capita	\$ 51 ('00)		\$ 269	19.0%	50
Total Federal Expenditures	24,444 million \$ ('00)		1,637,170	1.5%	23
Federal R&D / Total Federal	0.8% ('00)		4.6%		49
Total R&D (all funds)	866 million \$ ('00)		264,616	0.3%	35
Total R&D Per Capita	\$ 214 ('00)		\$ 938	22.8%	43
Gross State Product (GSP)	118,508 million \$ ('00)		9,941,552	1.2%	27
GSP Per Capita	\$ 29,280 ('00)		\$ 35,238	83.1%	41
R&D Intensity (R&D / GSP)	0.73% ('00)		2.66%	27.4%	43

Source: Federal R&D: National Science Foundation, *Federal Funds for Research and Development: Fiscal Years 2000, 2001, and 2002* and other data, 2002; Population: U.S. Bureau of the Census; Federal Expenditures: U.S. Bureau of the Census, *Federal Expenditures by State for Fiscal Year 2000, 2001*; GSP: U.S. Department of Commerce, Bureau of Economic Analysis.

* - Rank among 50 states and District of Columbia.

Federal R&D to Kentucky by Agency
 FY 2000 (obligations in millions of dollars)
 Total: \$zzz million

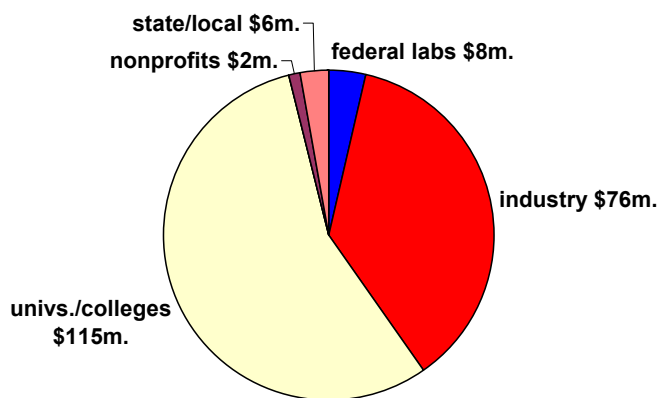


Source: National Science Foundation, Federal Funds for Research and Development, Fiscal Years 2000, 2001, and 2002, 2002.
 R&D = conduct of R&D and R&D plant.
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Chart 1.

Federal R&D to Kentucky by Performer
 FY 2000 (obligations in millions of dollars)
 Total: \$206 million

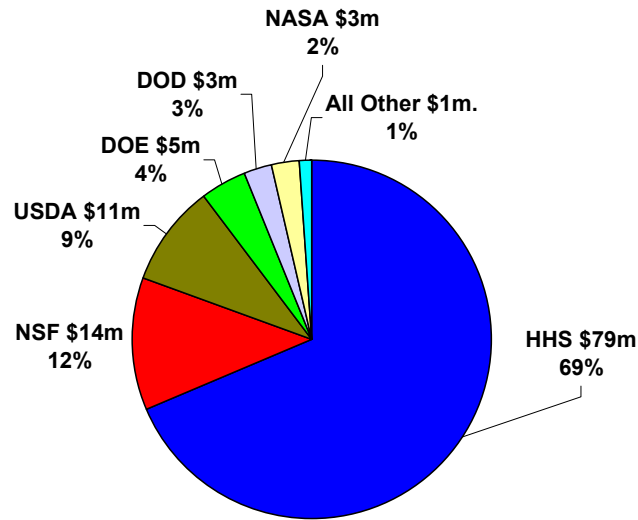


Source: National Science Foundation, Federal Funds for Research and Development, Fiscal Years 2000, 2001, and 2002, 2002.
 R&D = conduct of R&D and R&D plant.
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Chart 2.

Federal R&D to Kentucky Universities and Colleges
 FY 2000 (obligations in millions of dollars)
 Total: \$115 million

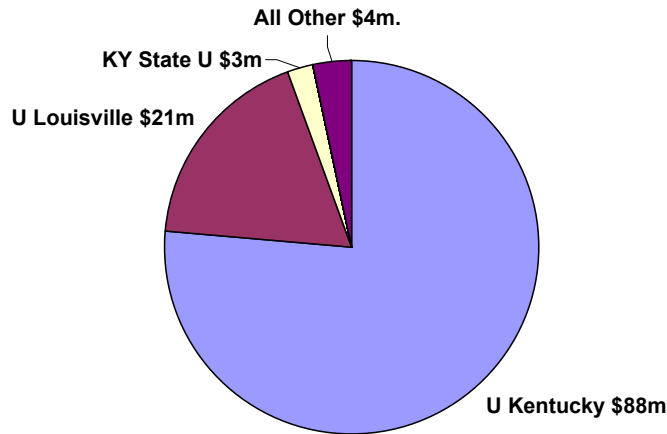


Source: National Science Foundation, *Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, FY 2000, 2002.*
 R&D = conduct of R&D and R&D plant.
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Chart 3.

Federal R&D to Kentucky Universities and Colleges
 FY 2000 (obligations in millions of dollars)
 Total: \$115 million

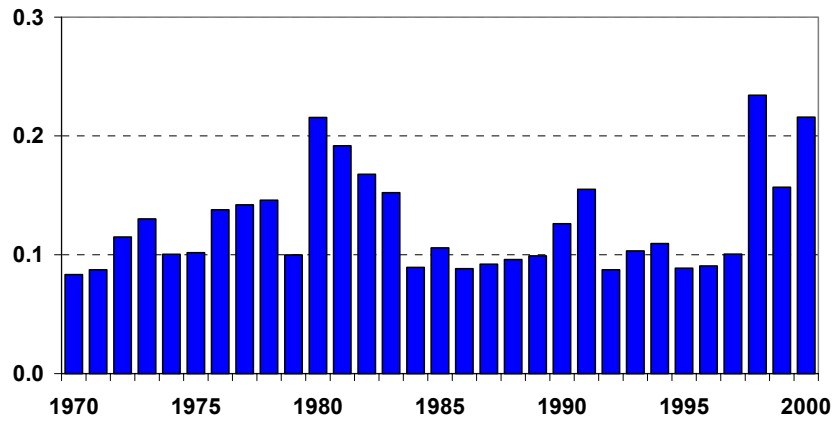


Source: National Science Foundation, *Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions, FY 2000, 2002.*
 R&D = conduct of R&D and R&D plant.
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Chart 4.

Federal R&D to Kentucky, FY 1970-2000
(billions of constant FY 2002 dollars)

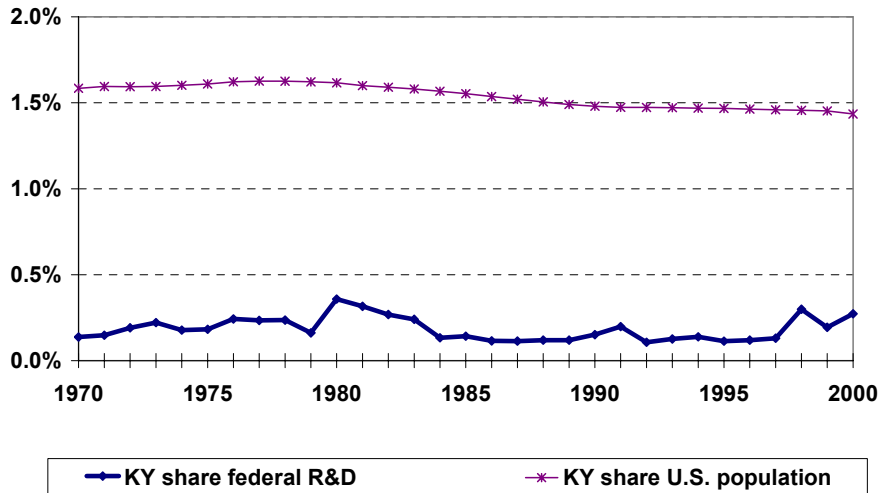


Source: National Science Foundation, Federal Funds for Research and Development Historical Tables, 2002.
R&D = conduct of R&D and R&D plan
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Chart 5.

Kentucky share of federal R&D, FY 1970-2000
(percent of total federal R&D)



Source: National Science Foundation, Federal Funds for Research and Development Historical Tables, 2002.
R&D = conduct of R&D and R&D plant.
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Chart 6.