# >> Office of Institutional Research and Planning



Research & Development Expenditures (R&D) at Georgia Tech, FY2013-2018



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# **EXECUTIVE SUMMARY**

# **Purpose and Rationale**

This report is intended to provide insights regarding Georgia Institute of Technology's Research and Development (R&D) expenditures. The Office of Institutional Research and Planning conducted a trend analysis of Georgia Tech's R&D expenditures using (a) the National Science Foundation's (NSF) Higher Education Research and Development Survey (HERD) data for FY2013-2017, and (b) FY2018 NSF-HERD data reported by the Office of Institutional Research and Planning. Research institutions whose R&D expenditures ranked among the top 25 nationally, as well as Georgia Tech's Peer institutions, were also included in the report as basis for comparing (a) overall R&D expenditures, (b) types of funding, (c) sources of funding, and (d) expenditures by discipline. NSF-R&D data from the FY2018 HERD survey have not been released yet; therefore, FY2018 R&D expenditures among the top research institutions cannot be compared at this time. Similarly, R&D expenditures for FY2019 are preliminary and have not yet been finalized or reported.

# **Summary of Findings**

- Nationally, Georgia Tech ranked 24th in Research and Development expenditures in FY2017 at \$804.30M with an average of \$822.62M in R&D expenditures for FY2013-2019.
- Georgia Tech's R&D expenditures have continued to increase each year with the greatest increase reported in FY2018 at \$891.73M (\$87.43M increase over PY), and a projected increase of \$158.40M over prior year for FY2019 at \$1,050.17M (See Figures 9 and 10).
- Georgia Tech's U.S. Federal funding has continued to increase since FY2015 with the greatest increase in FY2018 by 11.97%. Likewise, State & Local Government, Business, and Nonprofit funding have also continued to increase (See Table 1).
- Institutional funding decreased greatly in FY2017 by \$91.53M (-61.01%), but increased in FY2018 by \$6.97M (11.42%). The decrease in institutional funding could be related to an increase in both U.S. Federal and State & Local Government funding (See Table 1). Therefore, research that was previously funded by the institution might now be funded by U.S. Federal and/or State & Local Government monies. Additionally, there was an error is the HERD survey's category of institutionally financed research. NSF-NCSES discovered there were varying definitions of what should be included on the HERD Survey as institutionally funded research. Therefore, some adjustments were made based on differences in definitional interpretations.
- With the exception of FY2017, R&D expenditures related to DoD funding have continued to increase, most notably in FY2018 at \$53.30M (13.66%). Similarly, with the exception of FY2017, expenditures related to Nonfederal funding have continued to rise with the greatest increase in FY2018 at \$17.44M (7.94%) (See Table 1).
- Georgia Tech's R&D expenditures have increased across most disciplines, including Computer & Information Sciences (22.68%), Engineering (6.05%), Geosciences, Atmospheric and Ocean Sciences (3.64%), Life Sciences (59.36%), Mathematics and Statistics (6.10%), Physical Sciences (2.66%), and Non-S&E Fields (75.00%) (See Table 3; See also Figure 8).
- With (a) an increase in R&D expenditures across most disciplines and (b) the reclassification of certain NSF R&D disciplines and fields of study, the distribution of expenditures by discipline also changed (See figure 7). Engineering and Computer & Information Sciences are still proportionately larger and account for 84.35% of Georgia Tech's R&D expenditures; however, Physical Sciences, Life Sciences, and Non-S&E Fields now account for 6.33%, 3.02%, and 1.69% of R&D expenditures respectively (See Figure 7).

(Summary of Findings continued on next page)

(Summary of Findings continued)

- Prior to FY2017 Psychology was previously grouped with either Social Sciences or Non-S&E Fields. Thus, the \$4.03M increase is a result of the reclassification of NSF R&D disciplines and fields of study, which may also have impacted the decrease in R&D expenditures for Social Sciences (-\$7.02M) by -54.91%.
- FY2017 R&D Rankings Among Top Research Institutions
  - For FY2017 Georgia Tech ranked 8<sup>th</sup> in R&D Expenditures funded by the State and Local Government, and 12th for U.S. Federal Government, which are also Georgia Tech's largest types of sponsored awards (See Table 4).
  - Among the top research institutions, Georgia Tech ranked 2<sup>nd</sup> in R&D expenditures funded by the U.S. Department of Defense (DoD), which is also the institution's largest source of federal funds.
  - For FY2017 Georgia Tech ranked 2<sup>nd</sup> in Engineering expenditures and 3<sup>rd</sup> in Computer and Information Sciences expenditures.

R&D (\$) by Funding Type	R&D (\$) by Funding Source	R&D (\$) by Discipline
State and Local Government	<ul> <li>DoD (\$390.10M) – 2<sup>nd</sup></li> </ul>	<ul> <li>Engineering (\$578.66M) – 2<sup>nd</sup></li> </ul>
(\$85.70M) – 8th	<ul> <li>Other Sources (\$72.94M) – 5<sup>th</sup></li> </ul>	Computer & Info Sciences
<ul> <li>U.S. Federal Gov. (\$584.90M) – 12<sup>th</sup></li> </ul>	• NASA (\$12.85M) – 21 <sup>st</sup>	<ul> <li>(\$115.72M) – 3<sup>rd</sup></li> <li>Mathematics &amp; Statistics</li> </ul>
• Business (\$54.3M) – 22 <sup>nd</sup>	<ul> <li>USDA (\$0.90M) – 106<sup>th</sup></li> </ul>	(\$7.11M) – 15 <sup>th</sup>
• All Other Source(Types)	• ENERGY (\$13.96M) – 37 <sup>th</sup>	<ul> <li>Geo, Atmos, and Ocean Sciences</li> <li>(\$11.94M) – 19<sup>th</sup></li> </ul>
(\$6.0M) – 65 <sup>th</sup>	<ul> <li>NSF (\$62.59M) – 21<sup>st</sup></li> </ul>	Physical Sciences (\$37.00M) –
<ul> <li>Institutional Funds</li> </ul>	<ul> <li>Nonfederal (\$219.41M) – 50<sup>th</sup></li> </ul>	23 <sup>rd</sup>
(\$61.0M) – 99 <sup>th</sup>	<ul> <li>HHS (\$31.55M) – 115<sup>th</sup></li> </ul>	• Non-S&E Fields (\$18.70M) – 24 <sup>th</sup>
<ul> <li>Nonprofit Organizations</li> </ul>		<ul> <li>Life Sciences (\$22.39M) – 30<sup>th</sup></li> </ul>
(\$12.4M) – 97 <sup>th</sup>		<ul> <li>Social Sciences (\$4.87M) – 29<sup>th</sup></li> </ul>
		<ul> <li>Psychology (7.91M) – 22<sup>nd</sup></li> </ul>

# **Research Questions**

- RQ1. What are Georgia Institute of Technology's Research and Development trends for FY2012 –
   FY2018 in terms of (a) overall R&D expenditures, (b) types of funding, (c) sources of funding, and (d) expenditures by discipline?
- RQ2. How does Georgia Institute of Technology's Research and Development compare to its national peers in terms of **overall expenditures** for FY2012 FY2017?
- RQ3. How does Georgia Institute of Technology's Research and Development compare to its national peers in terms of *types of funding* for FY2012 FY2017?
- RQ4. How does Georgia Institute of Technology's Research and Development compare to its national peers in terms of *sources of funding* for FY2012 FY2017?
- RQ5. How does Georgia Institute of Technology's Research and Development compare to its national peers in terms of *research disciplines* for FY2012 FY2017?

# RESULTS

# **R&D Trends at Georgia Institute of Technology**

RQ1. What are Georgia Institute of Technology's Research and Development trends for FY2012 – FY2018 in terms of (a) overall R&D expenditures, (b) types of funding, (c) sources of funding, and (d) expenditures by discipline?

## Overall R&D Expenditures

- With the exception of FY2014, Georgia Tech has experienced a continued increase in R&D expenditures with the greatest increase in FY2018 at \$87.43M, which surpassed last year's R&D expenditures by 10.87% (See Figure 1).
- While there were some decreases in expenditures by funding source for certain disciplines such as Physical Sciences and Social Sciences, other disciplines such as Computer & Information Sciences, Engineering, Life Sciences, and Non-S&E Fields experienced an increase in R&D expenditures (See Tables 2 and 3; See also Figure 8).



Figure 1: Georgia Tech's R&D Expenditures (FY2013-2019)



Figure 2: Changes in Georgia Tech's R&D Expenditures (FY2013-2019)

## **Types of Funding**

- Georgia Tech's R&D expenditures funded by the U.S. Federal Government have increased since FY2015 with the greatest increase in FY2018 by 11.97%. Likewise, State & Local Government, Business, and Nonprofit funding have also continued to increase (See Table 1).
- Institutional funding decreased greatly in FY2017 by \$91.53M (-61.01%), but increased in FY2018 by \$6.97M (11.42%). With the exception of FY2017, other types of funding (All Other Sources) have also steadily decreased each year since FY2014.
  - Based on the redistribution of funds by funding type, it can be assumed that roughly \$78.90M of research previously funded by the institution in FY2016 was funded by State and Local Government in FY2017 (See Figure 3; See Also Table 2). Additionally, there was an error is the HERD survey's category of institutionally financed research. NSF-NCSES discovered there were varying definitions of what should be included on the HERD Survey as institutionally funded research. Therefore, some adjustments were made based on differences in definitional interpretations.
  - Research funded by the institution in FY2016 for Engineering, Life Sciences, Physical Sciences, Mathematics and Statistics, Geosciences, Atmospheric and Ocean Sciences, and Psychology appears to have been funded by State and Local Government in FY2017, with the greatest change in R&D expenditures for Engineering research (See Table 2).
  - R&D expenditures for Non-S&E Fields has also continued to increase.

Year				R&D Types	of Funding		
		U.S. Federal Gov.	State & Local Gov.	Institutional Funds	Business	Nonprofit Org.	All Other Sources
FY2013	2013	\$522.13M	\$11.52M	\$132.95M	\$46.19M	\$6.05M	\$11.65M
522044	2014	\$512.02M	\$12.68M	\$143.81M	\$41.57M	\$5.03M	\$10.45M
FY2014	Var. to PY	(\$10.12M)	\$1.16M	\$10.86M	(\$4.61M)	(\$1.03M)	(\$1.20M)
FV201F	2015	\$551.08M	\$10.25M	\$148.06M	\$41.09M	\$6.33M	\$8.55M
FY2015	Var. to PY	\$39.07M	(\$2.43M)	\$4.25M	(\$0.48M)	\$1.31M	(\$1.89M)
FV2016	2016	\$568.43M	\$7.49M	\$152.52M	\$46.48M	\$10.94M	\$4.86M
F12016	Var. to PY	\$17.35M	(\$2.76M)	\$4.46M	\$5.39M	\$4.61M	(\$3.70M)
52047	2017	\$584.89M	\$85.67M	\$60.99M	\$54.28M	\$12.45M	\$6.03M
FY2017	Var. to PY	\$16.46M	\$78.18M	(\$91.53M)	\$7.81M	\$1.51M	\$1.17M
FV2010	2018	\$654.88M	\$86.19M	\$67.95M	\$57.60M	\$24.06M	\$1.05M
FY2018	Var. to PY	\$69.99M	\$0.52M	\$6.97M	\$3.32M	\$11.61M	(\$4.98M)
Avg	g (μ)	\$565.57M	\$35.63M	\$117.71M	\$47.87M	\$10.81M	\$7.10M

## Table 1: R&D Expenditures by Funding Type (FY2013-2018)



# Figure 3: Changes in Institutional and State and Local Government Funding (FY2016-2017)

Table 2: Changes R&L	Expenditures by	Funding Ty	pe (FY2016	5-2017)
Discipline	Funding Type	FY2016	FY2017	Var. to PY
Engineering	Institutional Funds	\$90,401,071	\$29,475,000	(\$60,926,071)
Engineering	State and Local Gov.	\$4,755,123	\$53,520,000	\$48,764,877
Geosciences, Atmospheric Sciences,	Institutional Funds	\$3,564,052	\$205,000	(\$3,359,052)
and Ocean Sciences	State and Local Gov.	\$247,271	\$3,480,000	\$3,232,729
Life Sciences	Institutional Funds	\$11,061,397	\$4,301,000	(\$6,760,397)
Life Sciences	State and Local Gov.	\$914,747	\$9,055,000	\$8,140,253
Mathematics and Statistics	Institutional Funds	\$4,021,716	\$325,000	(\$3,696,716)
	State and Local Gov.	\$0	\$3,666,000	\$3,666,000
Non-S&E Fields	Institutional Funds	\$8,913,040	\$18,589,000	\$9,675,960
Non-Sal Fields	State and Local Gov.	\$217,257	\$3,135,000	\$2,917,743
Physical Sciences	Institutional Funds	\$12,183,316	\$2,185,000	(\$9,998,316)
r nysical sciences	State and Local Gov.	\$51,277	\$10,626,000	\$10,574,723
Baychology	Institutional Funds	\$2,598,102	\$48,000	(\$2,550,102)
rsychology	State and Local Gov.	\$0	\$1,606,000	\$1,606,000
Overall Change in Funding Type	Institutional Funds	\$132,742,694	\$55,128,000	(\$77,614,694)
overall change in Funding Type	State and Local Gov.	\$6,185,675	\$85,088,000	\$78,902,325

	Funding Type					
2013 (M)	U.S. Federal Gov.				\$522.13M	
	State & Local Gov.	\$11.52M				
	Institutional Funds	\$13	2.95M			
	Business	\$46.19M				
	Nonprofit Org.	\$6.05M				
	All other sources	\$11.65M				
2014 (M)	U.S. Federal Gov.				\$512.02M	
	State & Local Gov.	\$12.68M				
	Institutional Funds	\$1	43.81M			
	Business	\$41.57M				
	Nonprofit Org.	\$5.03M				
	All other sources	\$10.45M				
2015 (M)	U.S. Federal Gov.				\$551.08M	
	State & Local Gov.	\$10.25M				
	Institutional Funds	\$1	48.06M			
	Business	\$41.09M				
	Nonprofit Org.	\$6.33M				
	All other sources	\$8.55M				
2016 (M)	U.S. Federal Gov.				\$568.43M	
	State & Local Gov.	\$7.49M				
	Institutional Funds	\$	152.52M			
	Business	\$46.48M				
	Nonprofit Org.	\$10.94M				
	All other sources	\$4.86M				
2017 (M)	U.S. Federal Gov.				\$584.89M	
	State & Local Gov.	\$85.67N	4			
	Institutional Funds	\$60.99M				
	Business	\$54.28M				
	Nonprofit Org.	\$12.45M				
	All other sources	\$6.03M				
2018 (M)	U.S. Federal Gov.				\$654.88M	1
	State & Local Gov.	\$86.19	И			
	Institutional Funds	\$67.95M				
	Business	\$57.60M				
	Nonprofit Org.	\$24.06M				
	All other sources	\$1.05M				
		\$0M \$2	200M	\$400M	\$600M \$800	м

Figure 4: Georgia Tech's R&D Expenditures by Funding Type (FY2013-2018)

	Funding Type						
2014 Var. to	U.S. Federal Gov.		(\$	\$10.12M)			
FY2013 (M)	State & Local Gov.				\$1.16M		
	Institutional Funds				\$10.86N	И	
	Business			(\$4.61M)			
	Nonprofit Org.			(\$1.03M)			
	All other sources			(\$1.20M)			
2015 Var. to	U.S. Federal Gov.				9	39.07M	
FY2014 (M)	State & Local Gov.			(\$2.43M)			
	Institutional Funds				\$4.25M		
	Business			(\$0.48M)			
	Nonprofit Org.				\$1.31M		
	All other sources			(\$1.89M)			
2016 Var. to	U.S. Federal Gov.				\$17.3	5M	
FY2015 (M)	State & Local Gov.			(\$2.76M)			
	Institutional Funds				\$4.46M		
	Business				\$5.39M		
	Nonprofit Org.				\$4.61M		
	All other sources			(\$3.70M)			
2017 Var. to	U.S. Federal Gov.				\$16.46	SM	
FY2016 (M)	State & Local Gov.					\$78	.18M
	Institutional Funds	(\$91.53M)					
	Business				\$7.81M		
	Nonprofit Org.				\$1.51M		
	All other sources				\$1.17M		
2018 Var. to	U.S. Federal Gov.					\$69.99	ЭМ
FY2017 (M)	State & Local Gov.				\$0.52M		
	Institutional Funds				\$6.97M		
	Business				\$3.32M		
	Nonprofit Org.				\$11.61	и	
	All other sources			(\$4.98M)			
		(\$1001	M) (\$50	DM) \$0	M \$5	50M \$10	ом

Figure 5: Changes in Georgia Tech's R&D Expenditures by Funding Type (FY2013-2018)

## **Sources of Funding**

- R&D expenditures related to USDA, ENERGY, NASA, and NSF funding have decreased, however, expenditures related to HHS, DoD, Nonfederal, and Other sources of funding have increased.
- With the exception of FY2014 and FY2017, R&D expenditures related to DoD funding have continued to increase with the greatest increase in FY2018 at \$53.30M (13.66%). Similarly, with the exception of FY2017, expenditures related to Nonfederal funding have continued to increase with the greatest increase in FY2018 at \$17.44M (7.94%).

			R&D Sources of Funding									
Year		Dept. of Ag (USDA)	Dept. Humn. Hith Serv. (HHS)	Dept. of Defense (DoD)	Dept. of Energy (ENERGY)	Nat'l Aero. & Space Admin. (NASA)	Nat'l Sci Found (NSF)	Nonfederal	Other			
FY2013	2013	\$0.62M	\$38.89M	\$337.61M	\$25.37M	\$14.01M	\$70.38M	\$208.35M	\$35.25M			
FV2014	2014	\$0.67M	\$37.87M	\$335.73M	\$27.17M	\$13.65M	\$69.19M	\$213.54M	\$27.74M			
F12014	Var. to PY	\$0.05M	(\$1.02M)	(\$1.89M)	\$1.80M	(\$0.36M)	(\$1.18M)	\$5.18M	(\$7.51M)			
51/2045	2015	\$0.85M	\$35.23M	\$374.01M	\$28.50M	\$15.93M	\$68.75M	\$214.29M	\$27.82M			
F12015	Var. to PY	\$0.18M	(\$2.64M)	\$38.28M	\$1.33M	\$2.28M	(\$0.45M)	\$0.75M	\$0.08M			
FV2016	2016	\$1.40M	\$35.14M	\$396.20M	\$29.36M	\$13.88M	\$70.83M	\$222.28M	\$21.61M			
F12010	Var. to PY	\$0.55M	(\$0.09M)	\$22.19M	\$0.86M	(\$2.05M)	\$2.08M	\$7.99M	(\$6.21M)			
FV2017	2017	\$0.90M	\$31.55M	\$390.10M	\$13.96M	\$12.85M	\$62.59M	\$219.41M	\$72.94M			
F12017	Var. to PY	(\$0.50M)	(\$3.59M)	(\$6.10M)	(\$15.40M)	(\$1.03M)	(\$8.24M)	(\$2.87M)	\$51.33M			
FV2019	2018	\$0.78M	\$40.38M	\$443.40M	\$13.23M	\$12.83M	\$65.89M	\$236.85M	\$78.36M			
F12018	Var. to PY	(\$0.11M)	\$8.83M	\$53.30M	(\$0.73M)	(\$0.02M)	\$3.30M	\$17.44M	\$5.42M			
	Avg (µ)	\$0.87M	\$36.51M	\$379.51M	\$22.93M	\$13.86M	\$67.94M	\$219.12M	\$43.95M			

## Table 3: R&D Expenditures by Funding Source (FY2013-2018)

#### Note:

- Nonfederal sources refers to sources not funded by a U.S. federal agency and includes sources such as Business, Institutional, State and Local Government, Nonprofit Organizations, and other sources not funded by the federal government.
- **Other** refers to other U.S. federal agencies not listed as one of the seven major agencies for R&D expenditures as identified by the National Science Foundation (NSF).

(Continued on next page)

	Federal Agency			
2013 (M)	Dept of Ag (USDA)			
	Dept. Humn. HIth Serv. (HHS)	\$38.89M		
	Dept of Defense (DoD)	<b>4</b>		\$337 61M
	Dept. of Energy (ENEDGY)	\$25 27M		\$357.01W
	NACA	= \$25.37W		
	INASA	\$14.01M		
	Nat'l Sci Found (NSF)	\$70.38M		
	Nonfederal		\$208.35M	
	Other	\$35.25M		
2014 (M)	Dept of Ag (USDA)			
	Dept. Humn. Hith Serv. (HHS)	\$37.87M		
	Dept of Defense (DoD)	407.07M		\$225 72M
	Dept. of Bereray (ENEDGY)	407 17M		\$335.7 SIVI
	NACA	\$27.17M		
	NASA	\$13.65M		
	Nat'l Sci Found (NSF)	\$69.19M		
	Nonfederal		\$213.54M	
	Other	\$27.74M		
2015 (M)	Dept of Ag (USDA)			
	Dept, Humn, Hith Serv. (HHS)	\$35.23M		
	Dept of Defense (DoD)	400.20m		\$374.01M
	Dept. of Energy (ENERGY)	\$29 FOM		\$374.01W
	NACA	\$28.50M		
	NASA	\$15.93M		
	Nat'l Sci Found (NSF)	\$68.75M		
	Nonfederal		\$214.29M	
	Other	\$27.82M		
2016 (M)	Dept of Ag (USDA)			
	Dept. Humn. HIth Serv. (HHS)	\$35.14M		
	Dept. of Defense (DoD)	<b>•</b>		\$396.20M
	Dept of Energy (ENERGY)	\$29.26M		4550.2010
	NASA	\$12.00M		
	Natil Sai Faurad (NSE)	\$13.80M		
	Nat'l Sci Found (NSF)	\$70.83M		
	Nonfederal		\$222.28M	
	Other	\$21.61M		
2017 (M)	Dept of Ag (USDA)			
	Dept. Humn. HIth Serv. (HHS)	\$31.55M		
	Dept. of Defense (DoD)			\$390.10M
	Dept. of Energy (ENERGY)	\$13.96M		
	NASA	\$12.85M		
	Nat/I Sci Found (NSE)	\$12.85W		
	Nacional (NSI)	\$62.59M		
	Nontederal		\$219.41M	
	Other	\$72.94M		
2018 (M)	Dept of Ag (USDA)			
	Dept. Humn. HIth Serv. (HHS)	\$40.38M		
	Dept. of Defense (DoD)			\$443.40M
	Dept. of Energy (ENERGY)	\$13.23M		
	NASA	\$12.83M		
	Nat'l Sci Found (NSE)	¢CE 00M		
	Nonfederal	NIE8.20¢	#000 0515	
	Other	#70.000	\$236.85M	
	Other	\$/8.36M		
		\$0M \$100M \$20	0M \$300M	\$400M \$500M

Figure 6: Georgia Tech's R&D Expenditures by Funding Source (FY2013-2018)

	Federal Agency					
Var to	Dept of Ag (USDA)		\$0.05M			
FY2013 (M)	Dept. Humn. HIth Serv. (HHS)	(\$1.02M)				
	Dept. of Defense (DoD)	(\$1.89M)				
	Dept. of Energy (ENERGY)		\$1.80M			
	NASA	(\$0.36M)				
	Nat'l Sci Found (NSF)	(\$1.18M)				
	Nonfederal		\$5.18M			
	Other	(\$7.51M)				
Var to	Dept of Ag (USDA)		\$0.18M			
FY2014 (M)	Dept. Humn. HIth Serv. (HHS)	(\$2.64M)				
	Dept. of Defense (DoD)				\$38.28M	
	Dept. of Energy (ENERGY)		\$1.33M			
	NASA		\$2.28M			
	Nat'l Sci Found (NSF)	(\$0,45M)				
	Nonfederal	(+)	\$0.75M			
	Other		\$0.08M			
Var to	Dept of Ag (USDA)		\$0.55M			
FY2015 (M)	Dept. Humn. Hith Serv. (HHS)	(\$0.09M)	φ0.00m			
	Dept. of Defense (DoD)	(\$0.05111)		\$22 19M		
	Dept. of Energy (ENERGY)		\$0.86M	<i>yy</i>		
	NASA	(\$2.05M)	40.00M			
	Nat'l Sci Found (NSF)	(#2.03W)	\$2.08M			
	Nonfederal		\$7.99M			
	Other	(\$6.21M)	φ7.55W			
Var to	Dept of Ag (USDA)	(\$0.50M)				
FY2016 (M)	Dept. Humn. Hith Serv. (HHS)	(\$3.59M)				
	Dept. of Defense (DoD)	(\$6.10M)				
	Dept. of Energy (ENERGY)	(\$15.40M)				
	NASA	(\$1.03M)				
	Nat'l Sci Found (NSF)	(\$8 24M)				
	Nonfederal	(\$2.87M)				
	Other	(+)			\$51	33M
Var to	Dept of Ag (USDA)	(\$0.11M)				
FY2017 (M)	Dept. Humn. HIth Serv. (HHS)		\$8.83M			
	Dept. of Defense (DoD)				\$5	3.30M
	Dept. of Energy (ENERGY)	(\$0.73M)			, c.	
	NASA	(\$0.02M)				
	Nat'l Sci Found (NSF)	(+	\$3,30M			
	Nonfederal		\$17	7.44M		
	Other		\$5.42M			
		(\$20M) \$0	M \$20M	\$40	0M \$60	0M \$80M
		(4-010) 40		- φ.+.	φ0ι	400M

Figure 7: Changes in Georgia Tech's R&D Expenditures by Funding Source (FY2013-2018)

## **Expenditures by Discipline**

- With the exception of Social Sciences, Georgia Tech's R&D expenditures have increased across all disciplines, including Computer & Information Sciences (22.68%), Engineering (6.05%), Geosciences, Atmospheric and Ocean Sciences (3.64%), Life Sciences (59.36%), Mathematics and Statistics (6.10%), Physical Sciences (2.66%), and Non-S&E Fields (75.00%) (See Table 3; See also Figure 8).
- Prior to FY2017, Psychology was previously grouped with either Social Sciences or Non-S&E Fields. Thus, the \$4.03M increase is a result of the reclassification of NSF R&D disciplines and fields of study.
- With (a) an increase in R&D expenditures across all disciplines and (b) the reclassification of certain NSF R&D disciplines and fields of study, the distribution of expenditures by discipline also changed (See figure 7). Engineering and Computer & Information Sciences are still proportionately larger and account for 84.35% of Georgia Tech's R&D expenditures, however, Physical Sciences, Life Sciences, and Non-S&E Fields now account for 6.33%, 3.02%, and 1.69% of R&D expenditures respectively (See Figure 9).



Figure 8: Distribution of Georgia Tech's R&D Expenditures by Discipline (FY2013-2018)

			R&D Expenditures by Discipline										
Year		Computer & Info Sciences	Engineering	Geo, Atmos, and Ocean Sciences	Life Sciences	Mathematics & Statistics	Non-S&E Fields	Physical Sciences	Psychology	Social Sciences			
FY2013	2013	\$100.75M	\$503.47M	\$15.73M	\$20.96M	\$6.48M	\$4.11M	\$62.43M	\$0.00M	\$16.57M			
FY2014	2014	\$98.56M	\$505.38M	\$16.17M	\$19.45M	\$6.96M	\$5.30M	\$56.48M	\$0.00M	\$17.24M			
	Var. to PY	(\$2.19M)	\$1.92M	\$0.44M	(\$1.50M)	\$0.48M	\$1.19M	(\$5.95M)	\$0.00M	\$0.67M			
EV204 E	2015	\$106.68M	\$533.33M	\$19.07M	\$19.88M	\$6.68M	\$8.25M	\$54.92M	\$0.00M	\$16.56M			
FY2015	Var. to PY	\$8.11M	\$27.95M	\$2.90M	\$0.43M	(\$0.28M)	\$2.95M	(\$1.56M)	\$0.00M	(\$0.68M)			
EV2016	2016	\$114.79M	\$558.22M	\$11.38M	\$23.92M	\$7.19M	\$10.59M	\$49.37M	\$0.00M	\$15.26M			
F12010	Var. to PY	\$8.11M	\$24.89M	(\$7.68M)	\$4.04M	\$0.51M	\$2.33M	(\$5.55M)	\$0.00M	(\$1.31M)			
52047	2017	\$115.72M	\$578.66M	\$11.94M	\$22.39M	\$7.11M	\$18.70M	\$37.00M	\$7.91M	\$4.87M			
FY2017	Var. to PY	\$0.93M	\$20.44M	\$0.56M	(\$1.52M)	(\$0.08M)	\$8.11M	(\$12.37M)	\$7.91M	(\$2.48M)			
52040	2018	\$141.97M	\$613.65M	\$12.38M	\$35.69M	\$7.54M	\$32.72M	\$37.98M	\$4.03M	\$5.76M			
FT2018	Var. to PY	\$26.25M	\$34.99M	\$0.44M	\$13.29M	\$0.43M	\$14.02M	\$0.98M	(\$3.88M)	(\$7.02M)			
	Avg (μ)	\$113.08M	\$548.79M	\$14.44M	\$23.71M	\$6.99M	\$13.28M	\$49.70M	\$1.99M	\$12.71M			

## Table 4: R&D Expenditures by Discipline (FY2013-2018)



# Figure 9: Breakdown of Non-S&E (Science and Engineering) R&D Expenditures by Discipline (FY2013-2017)

	R&D Field/Discipline			
Varto	Computer & Info Sciences	(\$2.19M)		
FY2013 (M)	Engineering		\$1.92M	
	Geo, Atmos, and Ocean Sciences	(\$4.500.0)	\$0.44M	
	Life Sciences	(\$1.50M)		
	Mathematics & Statistics		\$0.48M	
	Non-S&E Fields		\$1.19M	
	Physical Sciences	(\$5.95M)		
	Psychology		\$0.00M	
	Social Sciences		\$0.67M	
Varto	Computer & Info Sciences			
FY2014 (M)	Engineering		to 0014	\$27.95M
	Geo, Atmos, and Ocean Sciences		\$2.90M	
	Life Sciences	(*** ****	\$0.43M	
	Mathematics & Statistics	(\$0.28M)		
	Non-S&E Fields	(\$4.500.0)	\$2.95M	
	Physical Sciences	(\$1.56M)	** ***	
	Psychology	(\$2,000)	\$0.00M	
	Social Sciences	(\$0.68M)		
Varto	Computer & Info Sciences			to 4 0014
FY2015 (M)	Engineering	(47.004)		\$24.89IVI
	Geo, Atmos, and Ocean Sciences	(\$7.68M)	<b>t</b> 4 0 4 4	
	Life Sciences		\$4.04M	
	Mathematics & Statistics		\$0.51M	
	Non-S&E Fields	(to com)	\$2.33M	
	Physical Sciences	(\$5.55M)	\$0.00M	
	Psychology	(#1.01.4)	\$0.00M	
Manta	Social Sciences	(\$1.31NI)		
var to	Computer & Into Sciences			\$20.44M
FY2016 (IVI)	Engineering		\$0.5CM	\$20.44IVI
	Geo, Atmos, and Ocean Sciences	(\$1 EOM)	\$0.50W	
	Lite Sciences	(\$1.52W) (\$0.09M)		
	Mathematics & Statistics	(\$0.00M)	¢0 11M	
	Non-Sac Fields	(\$12 37M)	\$0.11W	
	Physical Sciences	(912.3710)	\$7.911	
	Psychology Social Sciences	(\$10.39M)	\$7.5±1V	
Varto	Computer & Info Sciences	(\$10.55141)		
EV2017 (M)	Engineering			\$34.99M
112017 (W)	Geo Atmos and Ocean Sciences		\$0.44M	φ0-4.551W
	Life Sciences		\$13	29M
	Mathematics & Statistics		\$0.43M	
	Non-S&F Fields		\$14	1 02M
	Physical Sciences		\$0.98M	T.VEIVI
	Physical Sciences	(\$2.15M)	40.00M	
	Social Sciences	(\$0.84M)		
	Social Sciences	(40.04/11)		··· · ··· ···
		(\$20M) \$0	DM \$2	OM \$40M \$60M

Figure 10: Changes in Georgia Tech's R&D Expenditures by Discipline (FY2013-2018)

# **R&D Trends Compared with Georgia Tech's Peer Institutions**

- RQ2. How does Georgia Institute of Technology's Research and Development compare to its national peers in terms of **overall expenditures** for FY2012 FY2017?
- RQ3. How does Georgia Institute of Technology's Research and Development compare to its national peers in terms of **types of funding** for FY2012 FY2017?
- RQ4. How does Georgia Institute of Technology's Research and Development compare to its national peers in terms of **sources of funding** for FY2012 FY2017?
- RQ5. How does Georgia Institute of Technology's Research and Development compare to its national peers in terms of **research disciplines** for FY2012 FY2017?

## **Overall R&D Expenditures Compared with Peer Institutions**

- Among its peers Georgia Tech ranks 24<sup>th</sup> in overall R&D expenditures with an average of \$763.28M for FY2013-2018. However, Georgia Tech's R&D expenditures have continued to increase each fiscal year with the greatest increase in FY2018 at \$891.73M (\$87.43M increase over PY), which is \$128.45M above average (See Figures 9 and 10).
- NSF-R&D data from the FY2018 HERD survey have not been released yet, therefore, FY2018 R&D expenditures among Georgia Tech and its peer institutions cannot be compared at this time.

okins Univ.	\$2.562.30M	\$2.431.20M	\$2.305.70M	\$2.242.50M	\$2.168.60N
gan, Ann Arbor	\$1,530.14M	\$1,436.45M	\$1,369.28M	\$1,349.26M	\$1,375.12M
ington, Seattle	\$1,348.22M	\$1,277.68M	\$1,180.56M	\$1,176.34M	\$1,192.51M
nsin-Madison	\$1,193.41M	\$1,157.68M	\$1,069.08M	\$1,108.56M	\$1,123.50M
rnia, San Diego	\$1,133.50M	\$1,087.10M	\$1,101.50M	\$1,067.40M	\$1,075.60M
rnia, San Francisco	\$1,409.40M	\$1,294.30M	\$1,126.60M	\$1,084.00M	\$1,042.80M
iv.	\$1,123.20M	\$1,077.30M	\$1,013.80M	\$934.00M	\$1,012.80M
	\$1,126.90M	\$1,055.80M	\$1,036.70M	\$1,036.80M	\$992.80M
Carolina, Chapel Hill	\$1,102.10M	\$1,045.30M	\$966.80M	M08.686\$	\$973.00M
rnia, Los Angeles	\$1,076.92M	\$1,037.53M	\$1,021.23M	\$948.20M	\$966.66M
liv.	\$1,109.71M	\$1,066.27M	\$1,022.55M	\$959.25M	\$945.45M
etts Institute of Tech.	\$952.02M	\$946.16M	\$930.72M	\$908.02M	\$900.52M
niv. New York	\$893.10M	\$837.30M	\$868.20M	\$890.60M	\$889.20M
ourgh, Pittsburgh	\$939.70M	M08.88\$	\$861.20M	\$856.80M	\$872.70M
sota, Twin Cities	\$921.70M	\$910.20M	\$880.60M	\$876.90M	\$858.40M
	\$984.48M	\$974.20M	\$954.41M	\$883.29M	\$845.18M
ia State Univ.	\$854.82M	\$825.56M	\$791.03M	\$800.77M	\$837.88M
ylvania	\$1,374.30M	\$1,296.40M	\$864.10M	\$828.40M	\$828.40M
Univ.	\$905.47M	\$892.72M	\$866.68M	\$854.21M	\$820.02M
Jniv.	\$864.30M	\$818.50M	\$817.90M	\$815.10M	\$793.40M
	\$951.10M	\$881.80M	\$803.00M	\$772.80M	\$788.80M
s, Urbana-Champaign	\$642.08M	\$625.18M	\$639.82M	\$621.73M	\$743.49M
titute of Tech.	\$804.30M	\$790.71M	\$765.37M	\$725.55M	\$730.49M
rnia, Berkeley	\$770.82M	\$774.26M	\$788.51M	\$744.34M	\$727.00M
Anderson Cancer Center	\$888.00M	\$852.10M	\$833.40M	\$795.00M	\$718.10M
g	\$801.40M	\$791.30M	\$739.50M	\$708.50M	\$695.10M
, Austin	\$652.19M	\$621.69M	\$604.38M	\$585.25M	\$634.13M
v., West Lafayette	\$622.81M	\$606.30M	\$558.61M	\$564.92M	\$595.74M
niv.	\$917.70M	\$809.70M	\$602.00M	\$523.60M	\$471.90M
nstitute of Tech.	\$400.31M	\$371.06M	\$374.42M	\$367.18M	\$347.11M
ellon Univ.	\$328.10M	\$319.17M	\$242.00M	\$251.22M	\$271.28M
	0M \$2,000M \$4,000M	\$0M \$2,000M \$4,000M	\$1,500M \$3,000M	\$1,500M \$3,000M	\$0M \$1,500M \$3,000M

Figure 11: Overall R&D Expenditures among Top Research Institutions (FY2013-2017)

## Types of Funding among Top Research Institutions for FY2017

- For FY2017 Georgia Tech ranked 8<sup>th</sup> in R&D Expenditures funded by the State and Local Government, and 12<sup>th</sup> for U.S. Federal Government, which are also Georgia Tech's largest types of sponsored awards (See Table 4).
- Other types of funding and Georgia Tech's rank among top research institutions include:
  - Business (\$54.3M) 22<sup>nd</sup>
  - All Other Source(Types) (\$6.0M) 65<sup>th</sup>
  - Institutional Funds (\$61.0M) 99th
  - Nonprofit Organizations (\$12.4M) 97<sup>th</sup>

## Table 5: Top Research Institutions by R&D Funding Type for FY2017

U.S. Federal Gov. 201	l <b>7</b>	Ranking	State and Local Gov. 2	017	Ranking
Johns Hopkins U.	\$2,178.61N	1	U. Texas Anderson Cancer Cent	£\$255.96M	1
U. Washington, Seattle	\$952.74M	2	Texas A&M U.	\$207.33M	2
U. Michigan, Ann Arbor	\$829.70M	3	U. Florida	\$142.48M	3
Stanford U.	\$710.70M	4	Purdue U., West Lafayette	\$111.59M	4
U. North Carolina, Chapel Hill	\$676.28M	5	Cornell U.	\$88.96M	7
U. Pennsylvania	\$669.91M	6	Georgia Institute of Tech.	\$85.67M	8
Columbia U., New York	\$647.84M	7	U. Minnesota, Twin Cities	\$71.70M	11
U. California, San Diego	\$641.47M	8	U. Wisconsin-Madison	\$57.53M	14
Duke U.	\$623.57M	9	Ohio State U.	\$56.44M	16
U. Pittsburgh, Pittsburgh	\$617.88M	10	Pennsylvania State U.	\$54.34M	19
U. California, San Francisco	\$606.77M	11	U. California, Berkeley	\$49.87M	23
Georgia Institute of Tech.	\$584.89M	12	U. California, Los Angeles	\$47.10M	24
Harvard U.	\$573.16M	13	U. California, San Diego	\$34.59M	34
U. Wisconsin-Madison	\$570.80M	14	U. California, San Francisco	\$32.95M	37
Yale U.	\$541.61M	15	Stanford U.	\$30.36M	41
Pennsylvania State U.	\$538.16M	16	U. Illinois, Urbana-Champaign	\$30.13M	42
U. California, Los Angeles	\$487.85M	17	U. Washington, Seattle	\$27.95M	45
Massachusetts Institute of Tech	\$487.43M	18	U. Texas, Austin	\$27.37M	46
Ohio State U.	\$464.31M	20	U. North Carolina, Chapel Hill	\$17.81M	66
U. Minnesota, Twin Cities	\$456.44M	21	New York U.	\$17.12M	67
Cornell U.	\$438.18M	25	U. Pennsylvania	\$16.70M	72
U. Texas, Austin	\$396.45M	26	U. Pittsburgh, Pittsburgh	\$9.21M	96
New York U.	\$391.14M	27	Columbia U., New York	\$5.76M	117
U. Illinois, Urbana-Champaign	\$358.91M	33	Johns Hopkins U.	\$5.33M	125
U. California, Berkeley	\$330.34M	37	U. Michigan, Ann Arbor	\$2.70M	177
U. Florida	\$327.29M	38	Carnegie Mellon U.	\$2.36M	191
Texas A&M U.	\$307.66M	42	Harvard U.	\$2.34M	193
California Institute of Tech.	\$277.36M	44	Massachusetts Institute of Tech	\$1.80M	214
Purdue U., West Lafayette	\$245.11M	53	California Institute of Tech.	\$1.68M	218
Carnegie Mellon U.	\$189.97M	66	Yale U.	\$1.48M	231
U. Texas Anderson Cancer Cente	\$166.55M	74	Duke U.	\$0.12M	422

# Table 5 (Continued): Top Research Institutions by R&D Funding Type for FY2017

Business 2017	-	Ranking	Institutional Funds 20	17	Ranking
Duke U.	\$234.80IV	1	U. Michigan, Ann Arbor	\$537.18M	1
Massachusetts Institute of Tech	\$171.32N	2	U. Pennsylvania	\$445.52M	2
Ohio State U.	\$146.32N	3	U. Wisconsin-Madison	\$394.36M	3
U. Pennsylvania	\$140.20N	4	Harvard U.	\$334.02M	4
U. Texas Anderson Cancer Cent	€\$127.76N	5	U. California, San Francisco	\$333.96M	5
Stanford U.	\$114.79N	7	U. Minnesota, Twin Cities	\$300.52M	6
U. California, San Francisco	\$96.90M	8	U. North Carolina, Chapel Hill	\$277.95M	7
Johns Hopkins U.	\$84.01M	9	Texas A&M U.	\$264.82M	8
U. Michigan, Ann Arbor	\$82.90M	10	Cornell U.	\$260.89M	9
U. California, San Diego	\$80.80M	11	Yale U.	\$253.06M	11
Yale U.	\$70.26M	12	New York U.	\$248.29M	12
U. California, Berkeley	\$66.12M	13	U. California, Los Angeles	\$246.40M	13
Columbia U., New York	\$62.75M	15	U. Florida	\$221.52M	15
U. California, Los Angeles	\$62.43M	16	U. California, San Diego	\$186.51M	26
U. Texas, Austin	\$60.28M	18	Pennsylvania State U.	\$178.48M	28
Georgia Institute of Tech.	\$54.28M	22	Purdue U., West Lafayette	\$173.48M	30
U. Washington, Seattle	\$53.75M	23	U. Texas Anderson Cancer Cent	ε\$173.16M	31
Cornell U.	\$48.34M	24	U. Illinois, Urbana-Champaign	\$172.72M	32
Purdue U., West Lafayette	\$47.18M	26	U. California, Berkeley	\$168.11M	33
Harvard U.	\$46.99M	27	U. Pittsburgh, Pittsburgh	\$157.37M	35
Texas A&M U.	\$39.93M	33	Duke U.	\$151.24M	36
U. North Carolina, Chapel Hill	\$39.27M	34	Johns Hopkins U.	\$138.01M	38
U. Illinois, Urbana-Champaign	\$37.71M	36	U. Washington, Seattle	\$127.96M	43
Pennsylvania State U.	\$36.76M	38	Ohio State U.	\$127.30M	44
U. Florida	\$36.21M	39	U. Texas, Austin	\$124.04M	47
U. Minnesota, Twin Cities	\$35.70M	40	Stanford U.	\$106.50M	62
New York U.	\$34.05M	42	Massachusetts Institute of Tech	1\$101.16M	63
U. Wisconsin-Madison	\$25.68M	50	Carnegie Mellon U.	\$100.56M	64
Carnegie Mellon U.	\$23.59M	52	Columbia U., New York	\$71.31M	88
U. Pittsburgh, Pittsburgh	\$18.67M	63	Georgia Institute of Tech.	\$60.99M	99
California Institute of Tech.	\$12.52M	77	California Institute of Tech.	\$39.62M	131

Nonprofit Org. 2017	7	Ranking	All Other Sources 201	L <b>7</b>	Ranking
U. California, San Francisco	\$221.43M	1	New York U.	\$149.17M	1
U. California, Los Angeles	\$162.22M	2	U. Texas Anderson Cancer Cent	ε\$134.13M	2
U. Washington, Seattle	\$153.09M	3	U. California, San Francisco	\$117.39M	3
Harvard U.	\$149.98M	4	U. California, San Diego	\$106.10M	4
Johns Hopkins U.	\$148.98M	5	Massachusetts Institute of Tech	\$93.03M	6
Stanford U.	\$142.61M	6	U. Pittsburgh, Pittsburgh	\$87.07M	7
Cornell U.	\$116.51M	7	U. California, Los Angeles	\$70.93M	8
U. California, Berkeley	\$106.89M	8	U. California, Berkeley	\$49.48M	11
U. Wisconsin-Madison	\$104.00M	9	U. Wisconsin-Madison	\$41.05M	13
U. Pennsylvania	\$99.16M	10	U. Minnesota, Twin Cities	\$33.29M	15
Duke U.	\$98.20M	11	California Institute of Tech.	\$32.98M	17
Massachusetts Institute of Tech	\$97.28M	12	U. Washington, Seattle	\$32.74M	18
U. California, San Diego	\$83.99M	13	U. Florida	\$31.66M	19
Columbia U., New York	\$81.55M	14	Cornell U.	\$31.59M	20
Yale U.	\$78.67M	15	Texas A&M U.	\$28.11M	22
New York U.	\$77.97M	16	Ohio State U.	\$26.28M	23
U. North Carolina, Chapel Hill	\$70.19M	20	Columbia U., New York	\$23.86M	24
U. Michigan, Ann Arbor	\$64.65M	22	U. Illinois, Urbana-Champaign	\$22.21M	27
Texas A&M U.	\$57.63M	25	U. North Carolina, Chapel Hill	\$20.55M	28
U. Pittsburgh, Pittsburgh	\$49.50M	29	Duke U.	\$18.99M	31
Pennsylvania State U.	\$46.13M	30	Harvard U.	\$16.67M	33
Ohio State U.	\$43.69M	34	U. Michigan, Ann Arbor	\$13.03M	40
U. Florida	\$42.27M	37	Purdue U., West Lafayette	\$11.27M	42
U. Texas, Austin	\$37.78M	40	Johns Hopkins U.	\$7.39M	56
California Institute of Tech.	\$36.15M	41	U. Texas, Austin	\$6.28M	63
Purdue U., West Lafayette	\$34.19M	45	Georgia Institute of Tech.	\$6.03M	65
U. Texas Anderson Cancer Cente	\$30.47M	49	Yale U.	\$6.01M	67
U. Minnesota, Twin Cities	\$24.03M	60	Carnegie Mellon U.	\$5.50M	72
U. Illinois, Urbana-Champaign	\$20.42M	71	Stanford U.	\$4.76M	79
Georgia Institute of Tech.	\$12.45M	97	U. Pennsylvania	\$2.81M	108
Carnegie Mellon U.	\$6.13M	129	Pennsylvania State U.	\$0.94M	162

# Table 5 (Continued): Top Research Institutions by R&D Funding Type for FY2017

#### Sources of Funding among Top Research Institutions

- For FY2017 Georgia Tech ranked 2<sup>nd</sup> in R&D expenditures funded by the U.S. Department of Defense (DoD), which is also the institution's largest source of federal funds.
- Other sources of funding and Georgia Tech's rank among its peer institutions include:
  - Other (Federal) Sources (\$72.94M) 5<sup>th</sup>
  - NSF (\$62.59M) 21<sup>st</sup>
  - NASÀ (\$12.85M) 21<sup>st</sup>
  - ENERGY (\$13.96M) 37th
  - Nonfederal (\$219.41M) 50<sup>th</sup>
  - USDA (\$0.90M) 106<sup>th</sup>
  - HHS (\$31.55M) 115<sup>th</sup>

## Table 6: Top Research Institutions by R&D Funding Source for FY2017

Dept. of Agriculture (USDA	) 2017	Ranking	Dept. of Defense (DoD	) 2017	Ranking
Cornell U.	\$35.44M	5	Johns Hopkins U.	\$1,097.14M	1
U. Florida	\$33.37M	7	Georgia Institute of Tech.	\$390.10M	2
Pennsylvania State U.	\$32.85M	8	Pennsylvania State U.	\$213.10M	3
Ohio State U.	\$32.14M	9	U. Texas, Austin	\$139.46M	5
Texas A&M U.	\$31.43M	11	Massachusetts Institute of Tech.	\$134.22M	6
U. Minnesota, Twin Cities	\$28.36M	13	U. California, San Diego	\$92.17M	7
Purdue U., West Lafayette	\$28.10M	14	U. Washington, Seattle	\$91.51M	8
U. Wisconsin-Madison	\$27.37M	16	Stanford U.	\$85.21M	10
U. Illinois, Urbana-Champaign	\$19.42M	21	U. Michigan, Ann Arbor	\$80.93M	12
U. Washington, Seattle	\$14.65M	28	Harvard U.	\$76.39M	13
U. California, Berkeley	\$4.76M	62	Carnegie Mellon U.	\$62.67M	16
U. Michigan, Ann Arbor	\$2.76M	76	Duke U.	\$59.60M	17
U. North Carolina, Chapel Hill	\$1.87M	88	U. Pennsylvania	\$55.37M	19
Yale U.	\$1.61M	89	U. Illinois, Urbana-Champaign	\$49.46M	20
Duke U.	\$1.10M	103	U. Pittsburgh, Pittsburgh	\$46.57M	21
Georgia Institute of Tech.	\$0.90M	106	Columbia U. New York	\$43.57M	24
Columbia U. New York	\$0.86M	112	Purdue U., West Lafayette	\$40.47M	26
U. Pennsylvania	\$0.85M	114	U. California, Berkeley	\$38.49M	29
Johns Hopkins U.	\$0.83M	117	U. California, Los Angeles	\$36.96M	31
U. California, San Diego	\$0.77M	119	Cornell U.	\$34.49M	32
California Institute of Tech.	\$0.70M	123	California Institute of Tech.	\$33.05M	35
Carnegie Mellon U.	\$0.69M	127	Ohio State U.	\$31.14M	39
U. Texas, Austin	\$0.58M	134	Yale U.	\$28.10M	43
New York U.	\$0.54M	139	U. Wisconsin-Madison	\$26.67M	46
Harvard U.	\$0.23M	197	U. Florida	\$26.46M	47
U. California, Los Angeles	\$0.21M	200	U. Minnesota, Twin Cities	\$23.94M	53
Stanford U.	\$0.15M	219	U. California, San Francisco	\$21.52M	58
U. Pittsburgh, Pittsburgh	\$0.14M	223	Texas A&M U.	\$18.92M	65
U. California, San Francisco	\$0.09M	245	U. North Carolina, Chapel Hill	\$16.50M	74
Massachusetts Institute of Tech.			New York U.	\$16.22M	75
U. Texas Anderson Cancer Center			U. Texas Anderson Cancer Center	\$4.44M	155

# Table 6 (Continued): Top Research Institutions by R&D Funding Source for FY2017

Dept. of Energy (ENERGY)	2017	Ranking	Dept. Humn. Hith Serv.	(HHS) 2017	Ranking
Massachusetts Institute of Tech.	\$82.57M	2	Johns Hopkins U.	\$626.05M	1
U. Wisconsin-Madison	\$60.77M	4	U. Washington, Seattle	\$615.07M	2
U. Illinois, Urbana-Champaign	\$51.06M	6	U. California, San Francisco	\$547.78M	3
U. Texas, Austin	\$47.75M	7	U. Michigan, Ann Arbor	\$544.66M	4
U. Michigan, Ann Arbor	\$42.09M	8	U. Pennsylvania	\$543.96M	5
U. California, Berkeley	\$32.55M	10	U. Pittsburgh, Pittsburgh	\$521.40M	6
U. Washington, Seattle	\$29.48M	11	U. North Carolina, Chapel Hill	\$499.03M	7
Pennsylvania State U.	\$27.25M	12	Stanford U.	\$493.26M	8
Texas A&M U.	\$26.79M	13	Duke U.	\$492.74M	9
Purdue U., West Lafayette	\$23.92M	14	Yale U.	\$454.65M	10
Stanford U.	\$23.83M	15	Columbia U. New York	\$444.91M	11
California Institute of Tech.	\$23.71M	16	Harvard U.	\$407.13M	13
U. California, Los Angeles	\$23.09M	17	U. California, San Diego	\$399.29M	14
U. California, San Diego	\$22.28M	19	U. California, Los Angeles	\$335.89M	18
Ohio State U.	\$21.56M	21	New York U.	\$317.44M	20
Cornell U.	\$18.75M	24	U. Wisconsin-Madison	\$314.83M	21
U. Minnesota, Twin Cities	\$17.77M	27	U. Minnesota, Twin Cities	\$288.95M	24
Harvard U.	\$15.99M	31	Ohio State U.	\$256.27M	27
Columbia U. New York	\$14.51M	34	Cornell U.	\$217.55M	31
Duke U.	\$14.46M	35	U. Florida	\$182.40M	42
Georgia Institute of Tech.	\$13.96M	37	U. Texas Anderson Cancer Center	\$160.86M	46
U. Florida	\$11.69M	43	Pennsylvania State U.	\$126.63M	51
Yale U.	\$11.57M	44	U. California, Berkeley	\$116.73M	55
Carnegie Mellon U.	\$10.98M	47	Massachusetts Institute of Tech.	\$113.43M	58
U. Pennsylvania	\$9.67M	52	U. Texas, Austin	\$74.42M	75
Johns Hopkins U.	\$8.91M	57	California Institute of Tech.	\$70.26M	78
U. Pittsburgh, Pittsburgh	\$8.64M	59	Texas A&M U.	\$63.92M	82
U. North Carolina, Chapel Hill	\$6.96M	74	U. Illinois, Urbana-Champaign	\$60.89M	85
New York U.	\$4.65M	91	Purdue U., West Lafayette	\$51.44M	92
U. California, San Francisco	\$0.34M	212	Georgia Institute of Tech.	\$31.55M	115
U. Texas Anderson Cancer Center			Carnegie Mellon U.	\$27.09M	121

# Table 6 (Continued): Top Research Institutions by R&D Funding Source for FY2017

NASA 2017		Ranking	Nat'l Sci Found (NSF)	2017	Ranking
Johns Hopkins U.	\$234.45M	1	U. Illinois, Urbana-Champaign	\$136.24M	1
California Institute of Tech.	\$54.91M	4	U. Washington, Seattle	\$110.88M	2
Massachusetts Institute of Tech.	\$42.10M	6	Cornell U.	\$107.09M	3
U. California, Berkeley	\$41.12M	7	Texas A&M U.	\$105.94M	4
U. Michigan, Ann Arbor	\$31.48M	9	Columbia U. New York	\$105.69M	5
U. California, Los Angeles	\$24.29M	10	Massachusetts Institute of Tech.	\$94.31M	6
Columbia U. New York	\$20.68M	13	U. Texas, Austin	\$93.75M	7
U. Washington, Seattle	\$19.87M	15	U. Michigan, Ann Arbor	\$90.78M	8
Stanford U.	\$18.33M	17	California Institute of Tech.	\$88.37M	10
Pennsylvania State U.	\$15.03M	19	U. California, San Diego	\$87.06M	11
Georgia Institute of Tech.	\$12.85M	21	U. Wisconsin-Madison	\$84.37M	12
U. Texas, Austin	\$12.60M	23	Stanford U.	\$76.87M	14
U. Wisconsin-Madison	\$12.53M	24	U. California, Berkeley	\$75.05M	16
Cornell U.	\$11.65M	26	Pennsylvania State U.	\$73.01M	17
Texas A&M U.	\$10.19M	28	U. Minnesota, Twin Cities	\$71.05M	18
U. Illinois, Urbana-Champaign	\$9.92M	30	Carnegie Mellon U.	\$68.70M	19
Harvard U.	\$9.56M	32	Purdue U., West Lafayette	\$66.02M	20
U. California, San Diego	\$9.31M	33	Georgia Institute of Tech.	\$62.59M	21
U. Minnesota, Twin Cities	\$9.25M	34	U. California, Los Angeles	\$60.91M	23
Ohio State U.	\$7.29M	39	Harvard U.	\$51.61M	30
Purdue U., West Lafayette	\$7.18M	41	Ohio State U.	\$50.74M	32
U. Florida	\$5.32M	47	U. Florida	\$46.57M	34
U. Pennsylvania	\$5.04M	51	U. Pennsylvania	\$41.97M	38
Carnegie Mellon U.	\$3.46M	70	U. North Carolina, Chapel Hill	\$38.44M	41
Yale U.	\$3.35M	77	Duke U.	\$38.02M	43
Duke U.	\$2.37M	93	Johns Hopkins U.	\$37.94M	44
U. Pittsburgh, Pittsburgh	\$1.26M	131	New York U.	\$36.95M	46
New York U.	\$1.01M	146	Yale U.	\$35.03M	50
U. California, San Francisco	\$0.77M	166	U. Pittsburgh, Pittsburgh	\$25.70M	65
U. North Carolina, Chapel Hill	\$0.71M	170	U. California, San Francisco	\$6.09M	156
U. Texas Anderson Cancer Center	\$0.23M	238	U. Texas Anderson Cancer Center	\$1.00M	321

## Table 6 (Continued): Top Research Institutions by R&D Funding Source for FY2017

Nonfederal 2017		Ranking	Other Federal 2017		Ranking
U. California, San Francisco	\$802.63M	1	Johns Hopkins U.	\$173.29M	1
U. Texas Anderson Cancer Center	\$721.48M	2	U. North Carolina, Chapel Hill	\$112.78M	2
U. Pennsylvania	\$704.38M	3	Georgia Institute of Tech.	\$72.94M	5
U. Michigan, Ann Arbor	\$700.44M	4	U. Washington, Seattle	\$71.28M	6
U. Wisconsin-Madison	\$622.62M	5	Ohio State U.	\$65.18M	7
Texas A&M U.	\$597.82M	6	Texas A&M U.	\$50.46M	9
U. California, Los Angeles	\$589.07M	7	Pennsylvania State U.	\$50.29M	10
Harvard U.	\$550.00M	8	U. Wisconsin-Madison	\$44.27M	15
Cornell U.	\$546.30M	9	U. Michigan, Ann Arbor	\$37.00M	18
New York U.	\$526.60M	10	U. Illinois, Urbana-Champaign	\$31.92M	22
Duke U.	\$503.35M	11	U. California, San Diego	\$30.58M	24
U. California, San Diego	\$491.99M	12	U. California, San Francisco	\$30.19M	25
U. Florida	\$474.13M	13	Purdue U., West Lafayette	\$27.99M	28
U. Minnesota, Twin Cities	\$465.24M	14	U. Texas, Austin	\$27.88M	29
Massachusetts Institute of Tech.	\$464.58M	15	U. California, Berkeley	\$21.64M	39
U. California, Berkeley	\$440.48M	16	U. Florida	\$21.48M	40
U. North Carolina, Chapel Hill	\$425.78M	17	Massachusetts Institute of Tech.	\$20.82M	43
Yale U.	\$409.48M	18	Columbia U. New York	\$17.62M	53
Ohio State U.	\$400.02M	19	U. Minnesota, Twin Cities	\$17.13M	56
Stanford U.	\$399.01M	20	Carnegie Mellon U.	\$16.38M	61
U. Washington, Seattle	\$395.48M	22	Duke U.	\$15.29M	63
Johns Hopkins U.	\$383.70M	23	New York U.	\$14.34M	67
Purdue U., West Lafayette	\$377.70M	24	U. Pittsburgh, Pittsburgh	\$14.18M	68
U. Pittsburgh, Pittsburgh	\$321.82M	29	Cornell U.	\$13.21M	74
Pennsylvania State U.	\$316.65M	31	Stanford U.	\$13.05M	76
U. Illinois, Urbana-Champaign	\$283.18M	38	U. Pennsylvania	\$13.05M	77
U. Texas, Austin	\$255.74M	45	Harvard U.	\$12.26M	81
Columbia U. New York	\$245.22M	47	Yale U.	\$7.30M	121
Georgia Institute of Tech.	\$219.41M	50	U. California, Los Angeles	\$6.50M	129
Carnegie Mellon U.	\$138.13M	77	California Institute of Tech.	\$6.37M	130
California Institute of Tech.	\$122.95M	85	U. Texas Anderson Cancer Center	\$0.03M	523

## Expenditures by Discipline among Top Research Institutions

- For FY2017 Georgia Tech ranked 2<sup>nd</sup> in Engineering expenditures (\$578.66M) and 3<sup>rd</sup> in Computer and Information Sciences expenditures (\$115.72M).
- Below are Georgia Tech's R&D expenditures by discipline, as well as Georgia Tech's ranking amount its peer institutions.
  - Mathematics & Statistics (\$7.11M) 27th
  - Physical Sciences (\$37.00M) 35th
  - Psychology (\$7.91M) 53rd
  - Geo, Atmos, and Ocean Sciences (\$11.94M) 58th
  - Non-S&E Fields (\$18.70) 74th
  - Social Sciences (\$4.87M) 116th
  - Life Sciences (\$22.39M) 176th

Computer & Information Sc	iences	Ranking	Engineering		Ranking
Johns Hopkins U.	\$154.96M	1	Johns Hopkins U.	\$1,080.02M	1
Carnegie Mellon U.	\$136.93M	2	Georgia Institute of Tech.	\$578.66M	2
Georgia Institute of Tech.	\$115.72M	3	Massachusetts Institute of Tech.	\$432.45M	3
U. Illinois, Urbana-Champaign	\$102.61M	5	Pennsylvania State U.	\$312.34M	4
U. Texas, Austin	\$82.10M	6	Texas A&M U.	\$287.62M	6
Massachusetts Institute of Tech.	\$78.62M	7	U. Michigan, Ann Arbor	\$286.09M	7
Pennsylvania State U.	\$36.68M	9	U. Texas, Austin	\$239.50M	8
Stanford U.	\$29.28M	11	Purdue U., West Lafayette	\$230.68M	9
U. Washington, Seattle	\$29.08M	12	U. Illinois, Urbana-Champaign	\$192.88M	11
U. California, San Diego	\$28.22M	13	U. California, Berkeley	\$189.55M	12
Cornell U.	\$23.22M	18	Ohio State U.	\$178.03M	13
Ohio State U.	\$21.78M	19	U. Wisconsin-Madison	\$148.95M	16
U. Minnesota, Twin Cities	\$21.51M	20	U. Washington, Seattle	\$136.32M	17
Purdue U., West Lafayette	\$21.38M	21	Stanford U.	\$125.63M	20
New York U.	\$20.89M	23	U. California, San Diego	\$125.03M	21
Columbia U. in the City of New York	\$20.48M	24	U. Minnesota, Twin Cities	\$123.84M	22
U. Wisconsin-Madison	\$20.16M	25	Harvard U.	\$105.23M	26
U. Pennsylvania	\$20.15M	26	Carnegie Mellon U.	\$98.78M	27
Texas A&M U.	\$19.01M	27	U. Florida	\$97.83M	28
U. North Carolina, Chapel Hill	\$14.47M	35	Cornell U.	\$85.16M	32
U. California, Los Angeles	\$13.66M	37	Duke U.	\$80.55M	35
Harvard U.	\$13.53M	38	U. California, Los Angeles	\$80.15M	36
U. Florida	\$12.61M	40	New York U.	\$79.80M	37
Yale U.	\$11.38M	47	Columbia U. in the City of New York	\$68.00M	43
U. Michigan, Ann Arbor	\$10.72M	50	U. Pennsylvania	\$64.28M	45
U. California, Berkeley	\$10.34M	53	California Institute of Tech.	\$61.77M	51
California Institute of Tech.	\$9.58M	56	U. Pittsburgh, Pittsburgh	\$43.80M	73
U. Pittsburgh, Pittsburgh	\$9.03M	62	Yale U.	\$30.91M	98
Duke U.	\$5.61M	84	U. North Carolina, Chapel Hill	\$29.93M	101
Univ. Texas Anderson Cancer Center			Univ. Texas Anderson Cancer Center		
Univ. California, San Francisco			Univ. California, San Francisco		

## Table 7: Top Research Institutions by R&D Discipline for FY2017

Table	7 (Continued)	: Top Research	Institutions by R&D	Discipline for FY2017
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Mathematics & Statisti	cs	Ranking	Non-S&E Fields		Ranking
Johns Hopkins U.	\$59.51M	1	U. Pennsylvania	\$126.61M	1
U. Texas M. D. Anderson Cancer Cer	\$23.33M	2	U. Michigan, Ann Arbor	\$95.60M	2
Harvard U.	\$20.68M	4	New York U.	\$95.42M	3
U. Michigan, Ann Arbor	\$20.52M	5	Harvard U.	\$90.57M	4
Pennsylvania State U.	\$16.45M	7	U. Wisconsin-Madison	\$88.15M	5
U. Texas, Austin	\$11.70M	10	Purdue U., West Lafayette	\$86.60M	6
Carnegie Mellon U.	\$11.32M	11	U. Washington, Seattle	\$77.58M	8
U. California, Los Angeles	\$10.57M	12	Massachusetts Institute of Tech.	\$73.05M	9
New York U.	\$9.95M	15	Ohio State U.	\$59.63M	14
Duke U.	\$9.31M	17	Stanford U.	\$54.29M	16
Texas A&M U.	\$8.88M	20	U. Texas, Austin	\$53.59M	17
Massachusetts Institute of Tech.	\$7.67M	22	U. California, Berkeley	\$46.01M	25
U. Minnesota, Twin Cities	\$7.46M	24	Columbia U. in the City of New York	\$44.33M	26
U. Pennsylvania	\$7.37M	26	U. North Carolina, Chapel Hill	\$40.53M	28
Georgia Institute of Tech.	\$7.11M	27	U. Minnesota, Twin Cities	\$40.40M	29
Ohio State U.	\$6.58M	29	U. Illinois, Urbana-Champaign	\$39.44M	30
U. Washington, Seattle	\$6.42M	30	U. California, Los Angeles	\$39.14M	31
U. California, Berkeley	\$6.40M	31	Texas A&M U.	\$36.37M	35
Stanford U.	\$6.11M	32	U. Florida	\$34.95M	37
U. Wisconsin-Madison	\$5.98M	33	Pennsylvania State U.	\$28.13M	48
Purdue U., West Lafayette	\$5.67M	37	Cornell U.	\$21.31M	64
U. Illinois, Urbana-Champaign	\$5.39M	38	Yale U.	\$20.52M	65
U. California, San Diego	\$5.33M	39	California Institute of Tech.	\$19.60M	70
Columbia U. in the City of New York	\$4.60M	41	Georgia Institute of Tech.	\$18.70M	74
U. North Carolina, Chapel Hill	\$4.37M	43	Carnegie Mellon U.	\$14.96M	81
U. Pittsburgh, Pittsburgh	\$3.32M	54	Duke U.	\$13.00M	92
Cornell U.	\$2.80M	61	U. Pittsburgh, Pittsburgh	\$9.51M	115
Yale U.	\$2.38M	69	U. California, San Diego	\$7.19M	136
California Institute of Tech.	\$1.64M	89	Johns Hopkins U.	\$5.67M	157
U. Florida	\$1.20M	113	Univ. Texas Anderson Cancer Cente		
Univ. California, San Francisco			Univ. California, San Francisco		

# Table 7 (Continued): Top Research Institutions by R&D Discipline for FY2017

Geo, Atmos, and Ocean Sc	iences	Ranking	Life Sciences		Ranking
U. California, San Diego	\$186.83M	1	U. California, San Francisco	\$1,346.38M	1
U. Washington, Seattle	\$118.76M	5	U. Pennsylvania	\$1,022.47M	2
Texas A&M U.	\$115.18M	6	Johns Hopkins U.	\$954.19M	3
Columbia U. in the City of New York	\$84.75M	8	Duke U.	\$950.25M	4
U. Texas, Austin	\$64.05M	10	U. Washington, Seattle	\$891.56M	5
U. Wisconsin-Madison	\$52.11M	13	U. Michigan, Ann Arbor	\$826.51M	6
Massachusetts Institute of Tech.	\$47.80M	17	U. Texas M. D. Anderson Cancer Cente	\$825.10M	7
Pennsylvania State U.	\$44.38M	21	U. North Carolina, Chapel Hill	\$798.65M	8
Harvard U.	\$37.41M	22	Yale U.	\$796.67M	9
Johns Hopkins U.	\$35.62M	23	U. Pittsburgh, Pittsburgh	\$789.05M	10
U. California, Los Angeles	\$35.27M	24	U. California, Los Angeles	\$761.82M	11
California Institute of Tech.	\$33.14M	26	Stanford U.	\$745.12M	12
U. North Carolina, Chapel Hill	\$19.99M	43	U. Wisconsin-Madison	\$707.67M	13
Stanford U.	\$16.08M	46	Cornell U.	\$678.25M	14
U. Florida	\$15.35M	49	U. California, San Diego	\$667.48M	16
U. Michigan, Ann Arbor	\$14.45M	50	New York U.	\$633.75M	17
U. Minnesota, Twin Cities	\$14.20M	51	Harvard U.	\$633.46M	18
U. Pittsburgh, Pittsburgh	\$13.12M	54	Columbia U. in the City of New York	\$608.05M	20
Georgia Institute of Tech.	\$11.94M	58	U. Minnesota, Twin Cities	\$607.86M	21
Duke U.	\$11.05M	62	U. Florida	\$589.76M	23
U. California, Berkeley	\$9.78M	68	Ohio State U.	\$503.65M	28
Ohio State U.	\$9.09M	71	Texas A&M U.	\$349.57M	39
Yale U.	\$6.45M	86	Pennsylvania State U.	\$260.63M	57
Purdue U., West Lafayette	\$6.38M	88	U. California, Berkeley	\$224.60M	63
U. Illinois, Urbana-Champaign	\$6.30M	89	Purdue U., West Lafayette	\$214.76M	64
Cornell U.	\$5.15M	103	U. Illinois, Urbana-Champaign	\$199.92M	68
U. Pennsylvania	\$1.94M	163	Massachusetts Institute of Tech.	\$129.74M	95
Carnegie Mellon U.	\$1.23M	190	U. Texas, Austin	\$94.33M	109
New York U.	\$0.47M	257	California Institute of Tech.	\$77.96M	115
Univ. Texas Anderson Cancer Center			Georgia Institute of Tech.	\$22.39M	176
Univ. California, San Francisco			Carnegie Mellon U.	\$13.13M	208

Table	7 (Conti	inued): 1	Top Rese	arch Instit	utions by	R&D	Discipline	for FY2017
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Physical Sciences		Ranking	Social Sciences		Ranking
California Institute of Tech.	\$192.48M	1	U. Michigan, Ann Arbor	\$191.30M	1
Johns Hopkins U.	\$189.42M	3	Harvard U.	\$124.97M	2
U. California, Berkeley	\$143.10M	4	U. North Carolina, Chapel Hill	\$108.18M	3
Massachusetts Institute of Tech.	\$127.86M	5	U. California, Berkeley	\$52.88M	6
Cornell U.	\$112.26M	7	U. Pennsylvania	\$48.58M	7
Stanford U.	\$92.06M	9	Cornell U.	\$44.77M	8
Pennsylvania State U.	\$87.18M	11	U. Wisconsin-Madison	\$43.32M	9
Harvard U.	\$84.68M	12	Pennsylvania State U.	\$41.31M	10
U. Texas, Austin	\$76.29M	13	U. California, Los Angeles	\$41.19M	11
U. Wisconsin-Madison	\$71.28M	16	U. Minnesota, Twin Cities	\$35.82M	14
U. California, San Diego	\$67.38M	18	Duke U.	\$32.38M	19
U. Illinois, Urbana-Champaign	\$65.58M	19	Massachusetts Institute of Tech.	\$32.08M	20
U. California, San Francisco	\$63.02M	21	New York U.	\$31.21M	22
Yale U.	\$61.51M	22	Texas A&M U.	\$26.01M	25
U. Michigan, Ann Arbor	\$60.44M	23	Stanford U.	\$23.32M	28
U. California, Los Angeles	\$57.00M	25	U. Washington, Seattle	\$21.85M	31
U. Washington, Seattle	\$56.29M	26	U. Texas, Austin	\$18.83M	36
Texas A&M U.	\$54.02M	28	U. California, San Diego	\$16.27M	44
Columbia U. in the City of New York	\$46.45M	29	Carnegie Mellon U.	\$13.89M	48
U. Pennsylvania	\$46.24M	30	U. Florida	\$13.49M	49
U. Minnesota, Twin Cities	\$38.75M	33	Purdue U., West Lafayette	\$13.30M	51
Ohio State U.	\$37.52M	34	Ohio State U.	\$12.78M	53
Georgia Institute of Tech.	\$37.00M	35	Columbia U. in the City of New York	\$12.76M	54
Purdue U., West Lafayette	\$34.51M	39	Johns Hopkins U.	\$10.37M	66
U. North Carolina, Chapel Hill	\$33.81M	40	Yale U.	\$9.05M	74
U. Pittsburgh, Pittsburgh	\$32.55M	43	U. Texas M. D. Anderson Cancer Cer	\$8.64M	79
U. Florida	\$28.06M	49	U. Illinois, Urbana-Champaign	\$8.34M	81
New York U.	\$20.63M	64	U. Pittsburgh, Pittsburgh	\$5.13M	108
Carnegie Mellon U.	\$18.92M	67	Georgia Institute of Tech.	\$4.87M	116
Duke U.	\$17.99M	72	Univ. California, San Francisco		
U. Texas M. D. Anderson Cancer Cer	\$12.76M	99	California Institute of Tech.		

# Table 7 (Continued): Top Research Institutions by R&D Discipline for FY2017

Other Sciences		Ranking	Psychology		Ranking
U. California, Berkeley	\$74.15M	1	U. North Carolina, Chapel Hill	\$52.05M	1
Johns Hopkins U.	\$68.80M	2	U. Minnesota, Twin Cities	\$31.84M	2
U. Wisconsin-Madison	\$45.89M	4	Pennsylvania State U.	\$27.18M	3
Ohio State U.	\$27.81M	5	New York U.	\$25.64M	4
Massachusetts Institute of Tech.	\$20.84M	8	U. Michigan, Ann Arbor	\$21.64M	6
U. California, Los Angeles	\$20.66M	9	U. Pennsylvania	\$21.40M	7
U. Pennsylvania	\$15.26M	17	U. Pittsburgh, Pittsburgh	\$21.22M	8
U. Pittsburgh, Pittsburgh	\$12.98M	19	U. Texas M. D. Anderson Cancer Cente	\$18.19M	14
U. California, San Diego	\$11.90M	22	U. California, San Diego	\$17.84M	16
Carnegie Mellon U.	\$9.59M	26	Stanford U.	\$17.83M	17
U. Illinois, Urbana-Champaign	\$5.46M	47	U. California, Los Angeles	\$17.45M	19
Texas A&M U.	\$5.31M	48	U. Illinois, Urbana-Champaign	\$16.17M	20
California Institute of Tech.	\$4.09M	58	U. California, Berkeley	\$14.02M	24
Harvard U.	\$3.92M	60	Yale U.	\$12.12M	29
Purdue U., West Lafayette	\$3.40M	66	Cornell U.	\$11.56M	32
U. Michigan, Ann Arbor	\$2.88M	73	U. Washington, Seattle	\$10.30M	38
U. Texas, Austin	\$2.01M	81	U. Wisconsin-Madison	\$9.90M	41
Pennsylvania State U.	\$0.54M	134	U. Texas, Austin	\$9.78M	42
Yale U.	\$0.11M	209	Carnegie Mellon U.	\$9.36M	44
U. Florida	\$0.09M	222	Harvard U.	\$8.71M	47
U. North Carolina, Chapel Hill	\$0.09M	226	U. Florida	\$8.08M	52
U. Washington, Seattle	\$0.07M	235	Georgia Institute of Tech.	\$7.91M	53
Columbia U. New York			Ohio State U.	\$7.46M	56
Cornell U.			Duke U.	\$6.78M	59
Duke U.			Purdue U., West Lafayette	\$6.14M	62
Georgia Institute of Tech.			Johns Hopkins U.	\$3.75M	95
New York U.			Columbia U. in the City of New York	\$3.65M	98
Stanford U.			Texas A&M U.	\$3.51M	102
U. California, San Francisco			Massachusetts Institute of Tech.	\$1.91M	134
U. Minnesota, Twin Cities			California Institute of Tech.	\$0.05M	372
U. Texas Anderson Cancer Center			Univ. California, San Francisco		

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