

Office of Research & Engagement
University of Tennessee
4th Quarterly Research Report
for FY 2017
Cumulative for
July 1, 2016 – June 30, 2017



A team led by UT researchers was one of five selected by NASA in April as part of an overall investment of nearly \$50 million to lead the next aviation revolution. The goal of UT's team is to produce much more aerodynamically capable aircraft, with NASA providing \$9.9 million for the efforts upon final negotiations—believed to be the largest NASA award for a UT-led project.



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

OFFICE OF RESEARCH &
ENGAGEMENT

Office of Research & Engagement • University of Tennessee 4th Quarterly Research Report • FY 2017

Cumulative: July 1, 2016 - June 30, 2017

A Message from the AVCRD

Since assuming the mantle of the Associate Vice Chancellor for Research Development for the University of Tennessee, Knoxville on July 31, I have enjoyed meeting many of the faculty, staff and students on campus and am encouraged by the potential of our significant research enterprise. My experience as both a researcher and a funder (DoD program manager) taught me the three keys to growing any program: identify the right opportunities, cultivate high quality research, and inspire a spirit of partnership. This is why I am excited that Robert Nobles and has been named Interim Vice Chancellor for Research and Engagement. He brings a new energy to the organization especially with respect to working across lines to accomplish a common mission.



In fiscal year 2017, we saw a 4 percent increase in the total number of proposals submitted (1,725)—the largest number in UT history. The total amount requested for these submissions was \$558 million, signifying an increase of 0.6 percent. UT researchers were awarded \$166 million in FY17, representing a \$12 million—or 8 percent—increase over FY16 and the largest amount received in the last five fiscal years.

Most of this year-over-year growth resulted from a \$12 million increase in federal obligations. Federal Agencies accounted for 66 percent of the total sponsored obligations or \$109 million and of the 30 funding agencies tracked by National Science Foundation Higher Education Research and Development Survey (NSF HERD), Department of Energy (DOE) and National Science Foundation (NSF) accounted for 71 percent of our total award dollars. Looking at the specific federal agencies, the largest advance came from DOE - up \$7 million compared to last year. We also received \$4 million from the National Aeronautics and Space Administration (NASA), which represents the largest amount ever received from NASA in a given fiscal year.

In the last quarter, a team led by Tickle College of Engineering's James Coder, assistant professor of Mechanical, Aerospace, and Biomedical Engineering, received a NASA award of \$9.8 million over five years for the proposal entitled "Advanced Aerodynamic Design Center for Ultra-Efficient Commercial Vehicles." Another notable award of \$3.3 million over four years from the US Department of Education's Institute of Education Sciences went to the College of Education's Kimberly Wolbers, associate professor of Theory and Practice in Teacher Education, Health and Human Sciences, for an efficacy study of strategic and interactive writing instruction (SIWI). In the fourth quarter, we had six awards in excess of \$1.25 million with periods of performance ranging between 2-5 years.

The Office of Research and Engagement is here to support and enhance UT's discovery enterprise. I implore you to reach out to me or our expert staff members to discuss your concerns, research aspirations, or future collaborations.

Together, we will accomplish great things!

A handwritten signature in black ink that reads "Bruce LaMattina". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

Bruce LaMattina
Associate Vice Chancellor for Research Development

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Proposals, Awards, and Expenditures

College/Center/ Institute	Proposals Submitted				Awards Received				Estimated Total Research Expenditures (HERD ¹)	
	No.	% No. Incr. Over FY 16	Amount Requested	% \$ Incr. Over FY 16	No. ³	% No. Incr. Over FY 16	Amount Received	% \$ Incr. Over FY 16	Amount Expended	% \$ Incr. Over FY 16
College of Architecture and Design	3	-57.1%	\$250,578	-29.1%	5	-37.5%	\$245,461	-26.4%	\$419,273	-33.9%
College of Arts and Sciences	520	12.1%	\$139,972,084	8.5%	417	8.9%	\$39,849,664	24.1%	\$43,759,141	13.6%
Haslam College of Business	36	9.1%	\$6,049,454	-71.6%	35	9.4%	\$4,258,295	-12.1%	\$7,188,386	-15.4%
College of Communication and Information	20	11.1%	\$2,449,629	-67.1%	10	-23.1%	\$1,369,109	-29.0%	\$1,791,339	-7.4%
College of Education, Health, and Human Sciences	108	17.4%	\$59,727,536	24.1%	43	-17.3%	\$11,305,629	-25.4%	\$3,702,085	-25.2%
Tickle College of Engineering	605	-10.5%	\$216,093,891	-14.5%	564	-6.3%	\$61,219,630	5.0%	\$73,786,898	-2.2%
College of Law	1	0.0%	\$12,802	-89.0%	1	-50.0%	-\$1,620	-106.2%	\$24,650	-23.1%
College of Nursing	19	11.8%	\$7,156,235	-1.2%	8	0.0%	\$671,578	-53.4%	\$401,258	-54.8%
College of Social Work	44	18.9%	\$18,039,349	-37.9%	40	66.7%	\$5,884,634	73.5%	\$1,026,737	60.0%
Research Centers and Institutes	289	23.0%	\$89,048,383	82.9%	312	12.6%	\$20,785,228	9.3%	\$35,677,239	8.6%
UT Space Institute	59	7.3%	\$12,004,847	34.6%	34	17.2%	\$2,596,153	46.4%	\$4,434,521	-0.6%
Other ²	21	16.7%	\$7,267,547	302.3%	44	76.0%	\$17,912,042	19.1%	\$5,193,358	3.1%
Total	1,725	4.4%	\$558,072,335	0.6%	1,513	4.0%	\$166,095,803	8.3%	\$177,404,885	2.0%

Notes

- HERD - Higher Education Research and Development Survey, the successor to the Survey of Research and Development Expenditures at Universities and Colleges.
- Other Colleges, Centers or Institutes - This field captures any research proposal, award, and expenditure not included in the categories above. Not all research expenditures in this category have a corresponding proposal/award.
- The Number of Awards Received represents the cumulative number of funding award increments. One project may receive multiple funding awards.

* N/C - Not Calculable

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Top 20 Awards (by dollar value)

Investigators (Primary PI First)	Award Admin Department	Project Title	Sponsor	Anticipated Amount
	PI Home Department			
Eighmy, Thomas; Penumadu, Dayakar; Babu, Sudarsanam	Research Admin	Institute for Advanced Composites Manufacturing Innovation	Collaborative Composite Solutions Corp. / Dept. of Energy	\$15,891,721
	Research Admin; CEE; MABE			
Peterson, Gregory	JICS	XSEDE 2.0: Integrating, Enabling and Enhancing National Cyberinfrastructure with Expanding Community Involvement	University of Illinois at Urbana- Champaign /NSF	\$8,961,437
	EECS			
Coder, James; Glasby, Ryan; TerMaath, Stephanie	MABE	Advanced Aerodynamic Design Center for Ultra-Efficient Commercial Vehicles	NASA - National Aeronautics and Space Administration	\$8,038,715
	MABE; JICS			
Tomsovic, Kevin; Tolbert, Leon; Li, Fangxing; Liu, Yilu; Wang, Fei; Chen, Chien-Fei	Center for Electric Power	ERC for Ultra-Wide Area Resilient Electric Energy Transmission Network	NSF	\$5,226,647
	EECS; Center for Electric Power			
Hayward, Jason; Zhuravleva, Mariya; Hall, Howard; Lukosi, Eric; Melcher, Charles	Nuclear engineering	Nuclear Science and Engineering Nonproliferation Research Consortium	University of California, Berkeley / DOE - National Nuclear Security Administration	\$4,250,000
	Nuclear engineering; MSE; Scintillation Materials Research			
Dongarra, Jack; Kurzak, Jakub; Luszczek, Piotr; Tomov, Stanimire	Innovative Computing Lab	Software for Linear Algebra Transformation at Exascale (SLATE)	DOE - Oak Ridge National Laboratory	\$3,848,101
	Innovative Computing Lab			
Cormier, Thomas; Read, Kenneth; Sorensen, Soren	Physics	ALICE Barrel Tracking Upgrade	Dept. of Energy	\$3,400,000
	Physics			
Wolbers, Kimberly	Center on Deafness	An Efficacy Study of Strategic and Interactive Writing Instruction (SIWI): Teacher development and student outcomes	ED - Institute of Education Sciences	\$3,298,243
	Theory & Practice in Teacher Education			
Rao, Uma; Raynor, Hollie	Childrns mntl hlth svcs res ctr	Ethnic Influences on Stress, Energy Balance and Obesity in Adolescents	HHS - National Institute on Minority Health and Health Disparities	\$2,963,177
	Social work-Administration; Nutrition			
Hardin, Erin; Schussler, Elisabeth; Gibbons, Melinda; Gardner, Denise; Ezzell, Timothy; Moazen, Marisa	Psychology	Collaborative Research: ASPIRE: Appalachian Students Promoting the Integration of Research in Education	NSF	\$2,887,974
	Psychology; EEB; Educational Psychology & Couns; OIRA; Political Science; Research Admin			

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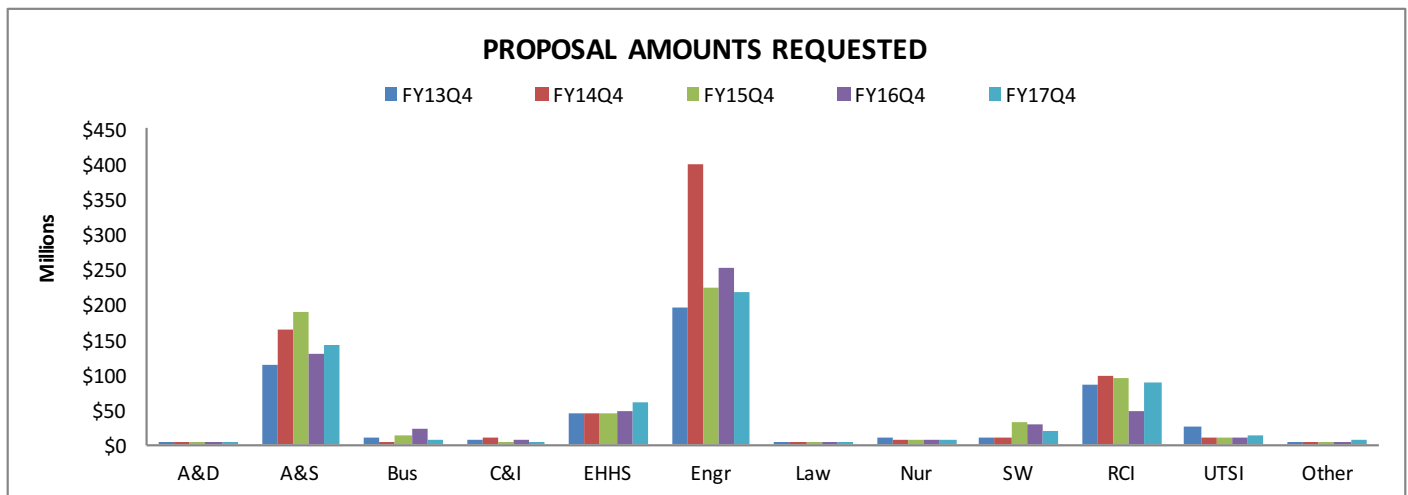
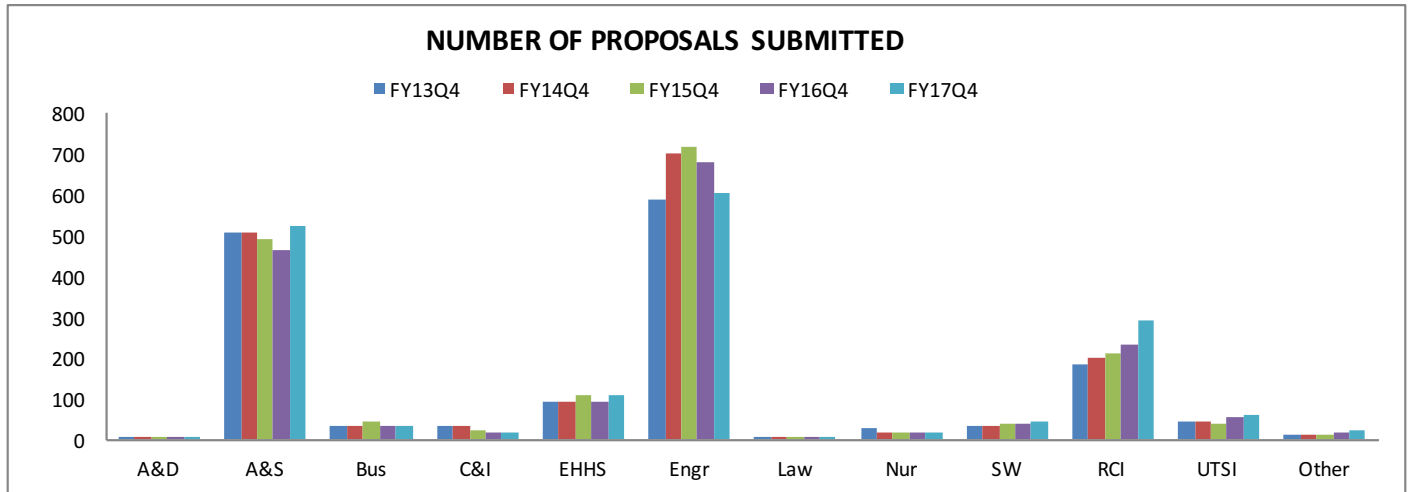
Top 20 Awards (Continued)

Investigators (Primary PI First)	Award Admin Department	Project Title	Sponsor	Anticipated Amount
	PI Home Department			
Wang, Fei; Tolbert, Leon; Liu, Yilu	Center for Electric Power	A Smart and Flexible Microgrid with a Low-cost Scalable Open-source Controller	Dept. of Energy	\$2,400,000
	EECS;			
Brewer, Ernest	CAPS Outreach Center	Educational Opportunity Center	Dept. of Education	\$2,326,014
	CAPS Outreach Center			
Brewer, Ernest	CAPS Outreach Center	Pre-College Upward Bound 2017-2022	Dept. of Education	\$1,991,155
	CAPS Outreach Center			
Dongarra, Jack; Bosilca, George; Bouteiller, Aurelien; Herault, Thomas	Innovative Computing Lab	Distributed Tasking for Exascale	DOE - Oak Ridge National Laboratory	\$1,840,582
	Innovative Computing Lab			
Dongarra, Jack; Jagode, Heike; Danalis, Antonios	Innovative Computing Lab	EXA-PAPI: The Exascale Performance Programming Interface	DOE - Oak Ridge National Laboratory	\$1,839,183
	Innovative Computing Lab			
Barrera Olivares, Francisco; Morrell-Falvey, Jennifer	BCMB	Transmembrane peptides for targeting acidosis	HHS - National Institute of General Medical Sciences	\$1,644,667
	BCMB			
Crawford, Lisa	CLEE	Tennessee Teachers' Professional Development Event Support	Tennessee Department of Education / ED - US Dept. of Education	\$1,643,753
	CLEE			
Bosilca, George; Bouteiller, Aurelien; Herault, Thomas	Innovative Computing Lab	Collaborative Research: SI2-SSI: EVOLVE: Enhancing the Open MPI Software for Next Generation Architectures and Applications	NSF	\$1,566,215
	Innovative Computing Lab			
Ganusov, Vitaly; Gregor, Jens; Berry, Michael	Microbiology	Mathematical modeling of immune response to malaria	HHS - National Institute of General Medical Sciences	\$1,535,422
	Microbiology; EECS			
Coble, Jamie; Irick, David; Wood, Richard	Nuclear engineering	Information Fusion for Improved Prognostics and Health Management of Military Vehicles	DOD - Office of Naval Research	\$1,486,494
	Nuclear engineering; MABE			

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Proposal Calculations

Please note that we have implemented two changes in the proposal count and amount calculations:

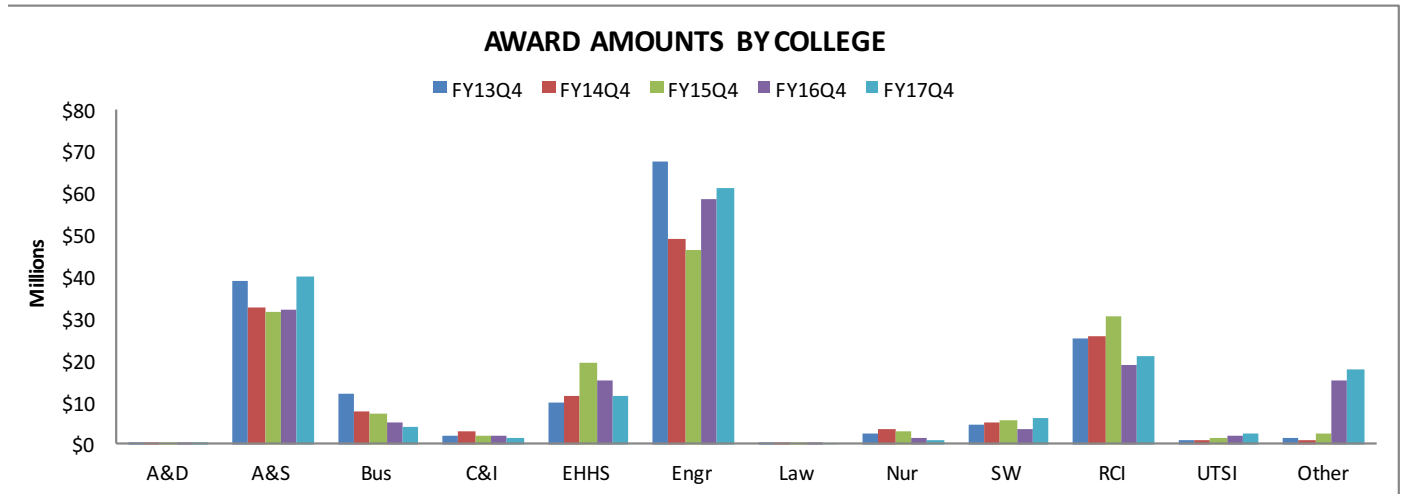
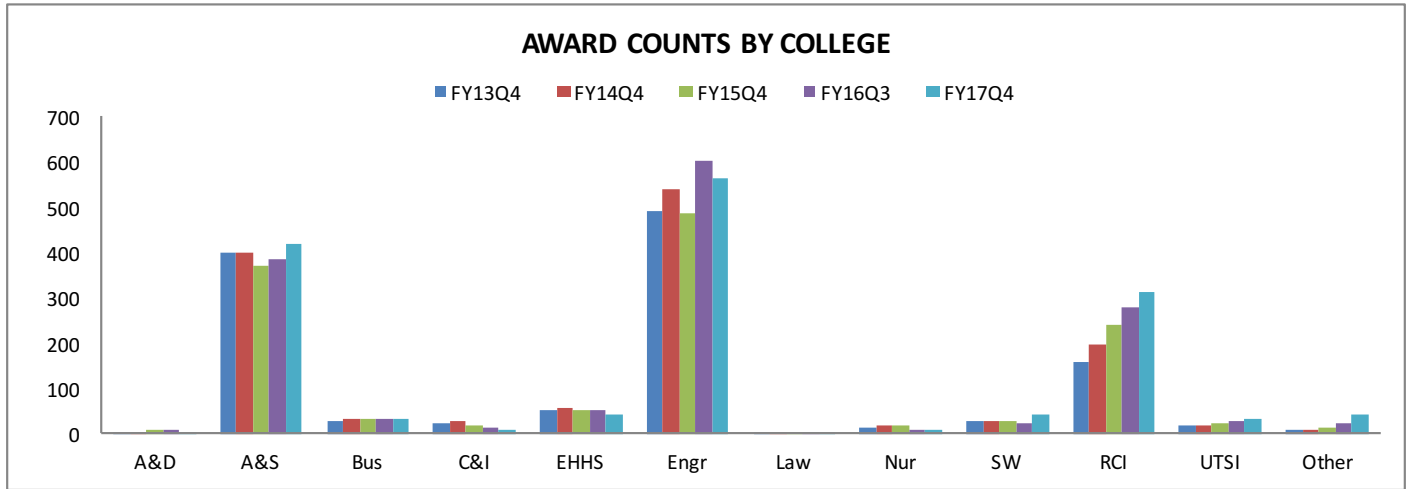
- We are no longer including Letters of Intent (preliminary proposals) in the proposal count/amount calculations.
- We are now including proposals with a status of 'Withdrawn'. These are actual proposals that were withdrawn after submission.

The changes will be implemented for all standard reports FY17 forward. Data for previous years will also be reported according to the changes described. If you have any questions about the differences between previous reports and reports going forward, please contact Anna Banks or Allison Heming with the ORE Research Informatics.

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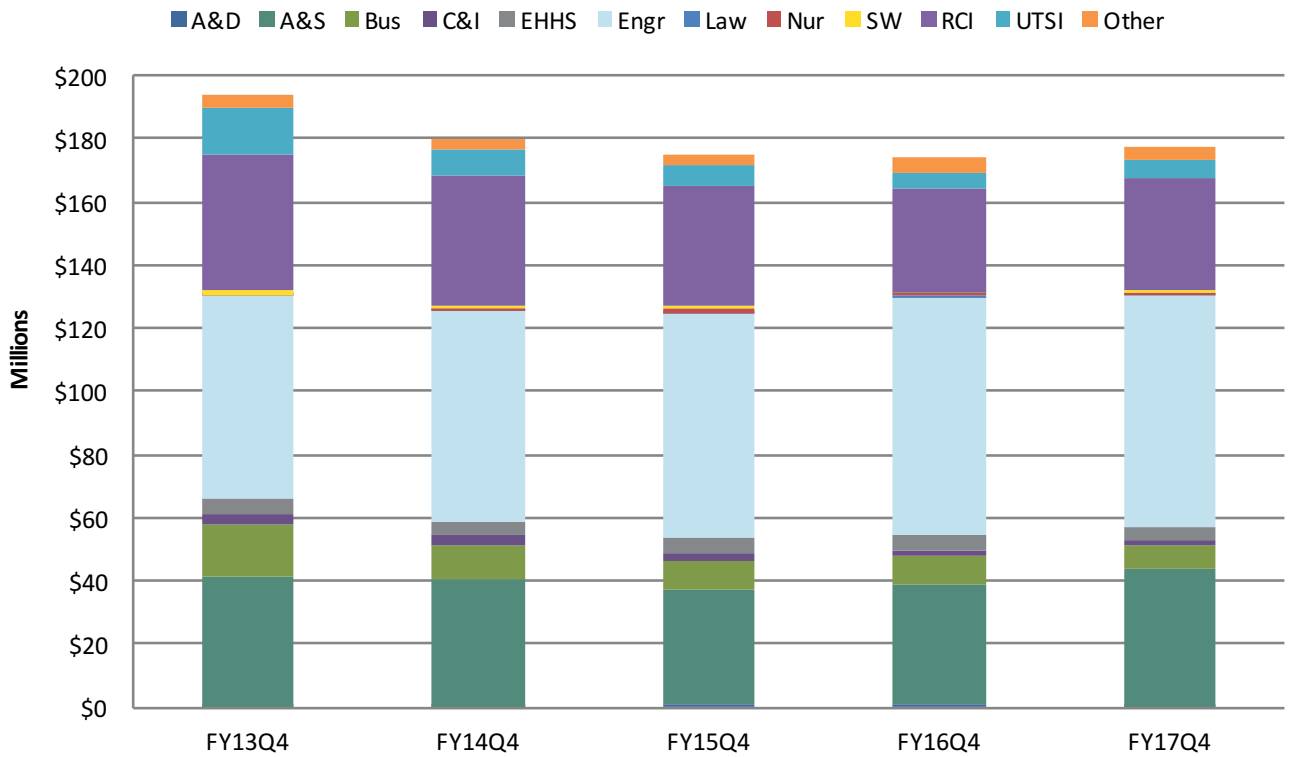


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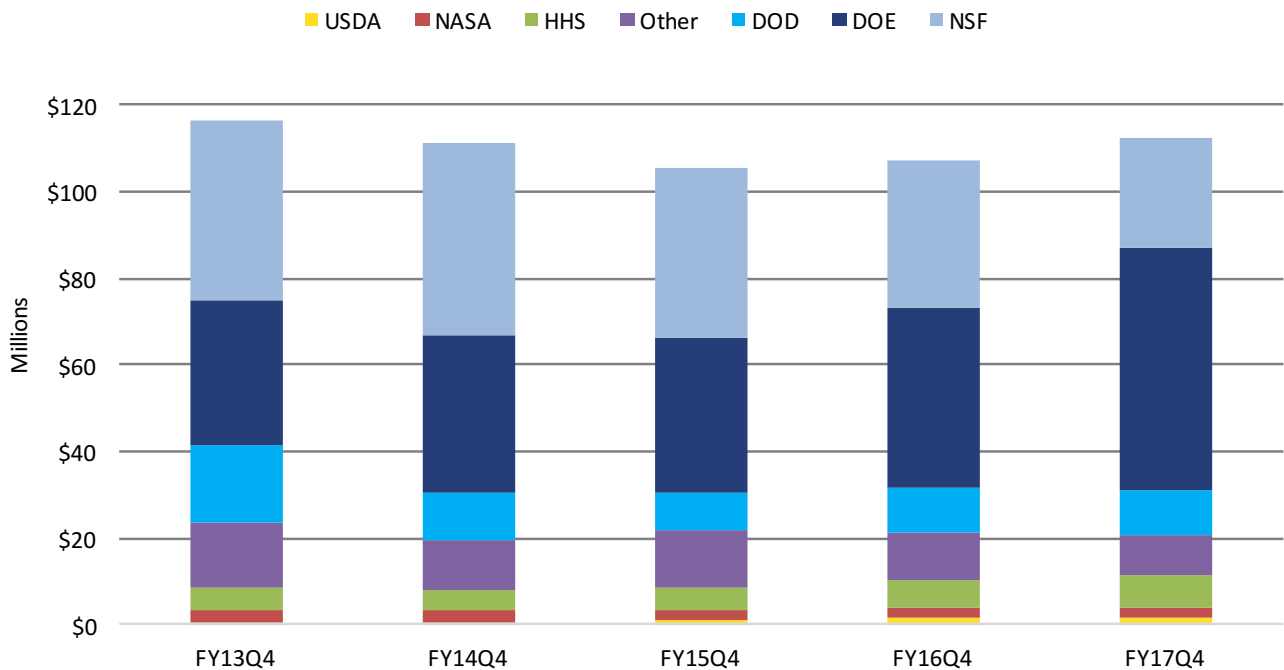
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ESTIMATED HERD TOTAL RESEARCH EXPENDITURES



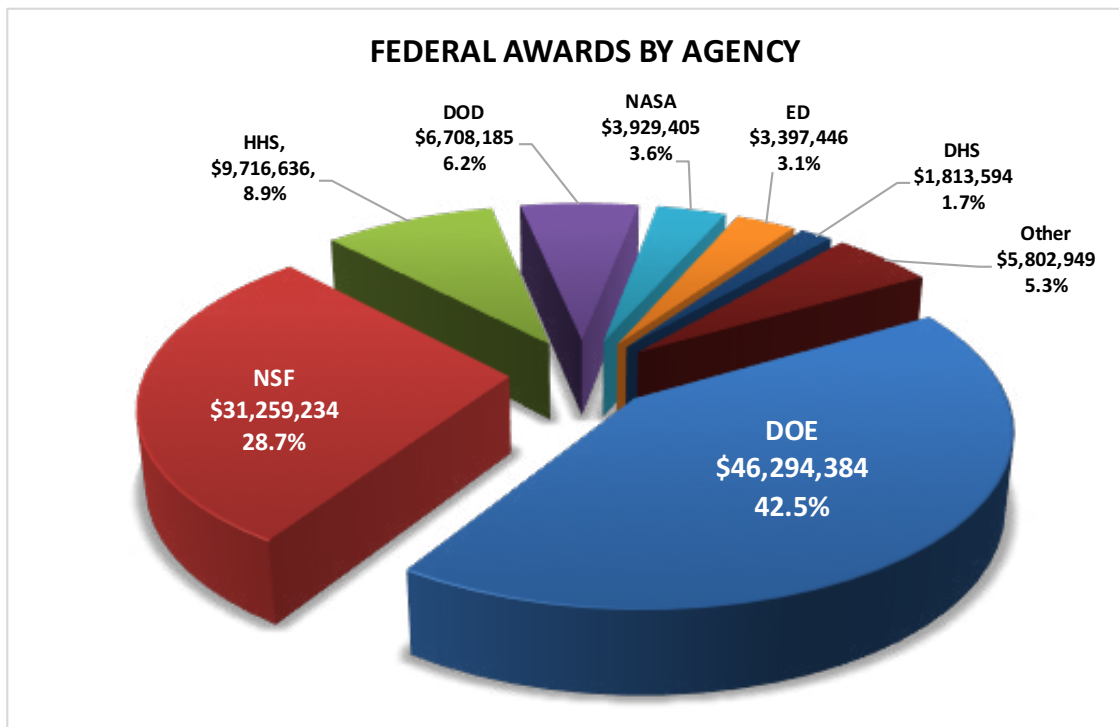
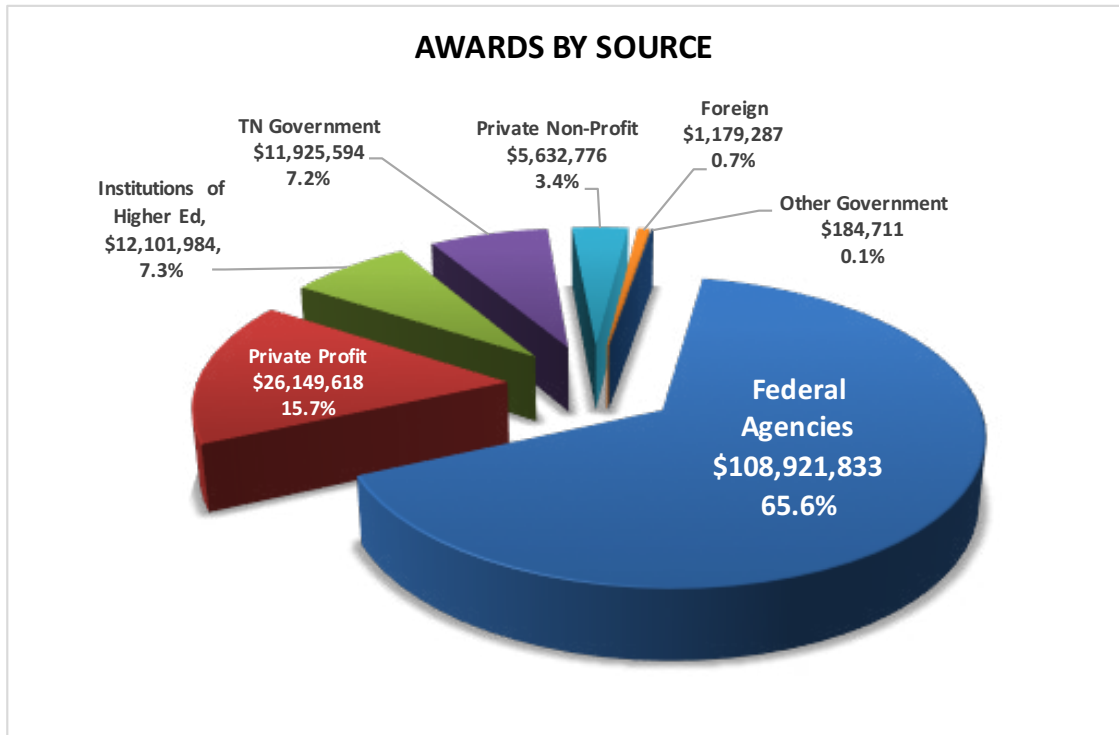
ESTIMATED HERD FEDERAL RESEARCH EXPENDITURES



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How Quarterly Research Summary Data are Derived

Each Quarterly Research Summary is a fiscal year-to-date comparison.

Data depicting colleges and research centers and institutes are presented to show trends within each unit. Award and proposal data are pulled from Cayuse SP. Research expenditure data are pulled from IRIS.

To ensure consistency of the Office of Research and Engagement reports, all quarterly and annual report award selection is based on the Award Effective Date (beginning of project funding). The proposal selection is based on the Proposal Approval Date.

Award, proposal, and expenditure data include UT Knoxville, UTSI, and UWA.

There are occasionally variations in the numbers reported for each quarter as information is updated into Cayuse SP and IRIS on a daily basis. The data for this report were collected on September 6, 2017. The annual report will represent the final amounts for that fiscal year.