

Office of Research & Engagement
University of Tennessee
4th Quarterly Research Report
for FY 2016

Cumulative for
July 1, 2015 - June 30, 2016



Undergraduate researchers set up posters in John C. Hodges Library and prepare to participate in EURēCA, the Exhibition of Undergraduate Research and Creative Activity, which celebrated its 20th anniversary in April.



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

OFFICE OF RESEARCH &
ENGAGEMENT

Office of Research & Engagement • University of Tennessee

4th Quarterly Research Report • FY 2016

Cumulative: July 1, 2015 - June 30, 2016

A Message from the AVCRD

In the final quarter of FY16, the Office of Research and Engagement has helped foster several significant and strategic research wins.

UT's School of Information Sciences in the College of Communication and Information received two grants totaling more than \$850,000 from the Institute of Museum and Library Services to train information science experts. The larger award, a two-year \$811,501 grant, involves Chancellor's Professor Carol Tenopir as PI and CoPIs Professor and Interim Director Dania Bilal and Associate Professor Rachel Fleming-May and will provide assistantships and co-curricular educational opportunities for master's degree students interested in becoming information professionals specializing in assessment and user experience. The second award, a one-year planning grant for Project MISSILE (Mobile Information Skills and Solutions in Library Education) totaling \$40,121, involves Assistant Professor Devendra Potnis as PI along with Co-PIs Professor and College of Communication and Information Associate Dean for Research Suzie Allard and Professor of Information Sciences Ed Cortez.



As many of you may know, I will be leaving the University of Tennessee at the end of August. I have enjoyed my time here at the University of Tennessee, and I wish you the best in all future research activities.

Janet E. Nelson

Associate Vice Chancellor for Research Development

Office of Research & Engagement • University of Tennessee

4th Quarterly Research Report • FY 2016

Cumulative: July 1, 2015 - June 30, 2016

Quarterly Wins

Biological Safety: The Biosafety Level 3 (BSL-3) laboratory, located at the College of Veterinary Medicine, is now online and research studies have commenced. An Emergency & Incident Response Manual for the BSL-3 laboratory was prepared and approved. Biosafety staff attended the annual symposium of the Southeastern Biological Safety Association (SEBSA) in Auburn, Alabama. Laboratory audits were completed for 42 BSL-2 labs. We also trained over 200 people (in-class and online annual refresher training) on various biosafety topics. The office has completed an online submission for the iMedRIS IBC/Biosafety module. Next steps include establishing routing procedures, developing instructional videos/guides, and a limited roll-out for testing. Full implementation is projected for fall 2016.

Centers and Institutes: The Shull Wollan Center: A Joint Institute for Neutron Sciences hosted several workshops and meetings this quarter: COHERENT Collaboration; the 7th Workshop on Neutron Scattering Applications in Structural Biology; ten meetings of the PEMP Working Group; Neutron Imaging: Application to Materials Science Workshop. Cristian Batista, Lincoln Chair Professor of Physics, became a Shull Wollan Center Affiliate in the area of condensed matter physics. Geoff Greene, professor of physics, and his colleague Peter Geltenbort published an article in Scientific American (April 2016).

Communication: In April, the Board of Trustees approved a proposal to rename the Joint Institute for Neutron Sciences to the Schull Wollan Center: A Joint Institute for Neutron Sciences. That same day, it was announced that UT would participate in AFFOA, an MIT-lead NNMI focused on advanced fibers and nonwoven textiles. Later that month, the office was responsible for communicating the APLU Task Force on Laboratory Safety report and guidelines to campus. In May, UT hosted the Southeast Regional Energy Innovation Workshop in Chattanooga with approximately 150 representatives from universities, industry, and federal agencies, along with elected officials in attendance. The U.S. Deputy Secretary of Energy Elizabeth Sherwood-Randall helped open the event.

Community Engagement and Outreach: UT was recognized nationally for a project designed to improve the wellness and disaster readiness of an Appalachian community in Clay County, Kentucky. UT was one of only five schools to receive the C. Peter Magrath/W.K. Kellogg Exemplary Program designation this year. The designation recognizes UT's extraordinary community engagement. The award region includes universities in the United States, Canada, Mexico, U.S. territories and several countries in Africa.

Faculty Development Team: The FDT launched its 2016 Proposal Writing Institute (PWI). Thirty-five faculty members from four UT campuses enrolled in one of four tracks that comprise this year's PWI. Each track has 6 sessions and is defined by either a targeted federal agency (NSF, USDA, NIH) or a specific federal program or grant type (NSF CAREER or NIH R01 proposal). In addition, 11 faculty members in the humanities attended four separate proposal writing workshops during the spring semester.

Federal Relations: ORE hosted an April visit by Rear Admiral Terry Moulton, Deputy Surgeon General of the Navy, as part of Knoxville Navy Week. RDML Moulton connected some of our faculty with Navy Bureau of Medicine and Surgery researchers. ORE also hosted an April workshop for 14 faculty members on the DOE Early Career Program (ECP) consisting of presentations by the DOE program manager, a UT Early Career award recipient, and ORE staff. In June, ORE provided travel support for 3 faculty members to attend the annual Young Investigator Program (YIP) meeting sponsored by the Air Force Office of Scientific Research.

Human Research Protection Program: HRPP continues to provide personalized and enhanced support to researchers by providing newly developed training workshops, targeted tips, status reports, and training opportunity updates in its newsletter. Compliance Specialists gained access to Bomgar remote support software to provide more direct assistance to researchers. Release of a new version of the Form 1 Initial IRB Application that streamlines the questions, with additional in-line guidance was completed. The average review time for Institutional Review Board (IRB) submissions has held steady at six days as submission volumes continued to climb: May averaged nine submissions per day; April and June averaged eleven per day.

Office of Sponsored Programs: OSP hired two new Award Coordinators, Melissa Jenkins and Greg Tolliver. OSP worked with the Research Development Team to submit a large Engineering Research Center (ERC)

Office of Research & Engagement • University of Tennessee

4th Quarterly Research Report • FY 2016

Cumulative: July 1, 2015 - June 30, 2016

proposal, and submitted 15 U.S. Department of Transportation proposals for their University Transportation Centers RFP. The unit was instrumental in the initial launching of the Cayuse reports software.

Radiation Safety: Jami Holbert was hired to oversee online training programs and the sealed source safety program for the unit. In April, one of UT's specific radioactive materials licenses was inspected by the Tennessee Division of Radiological Health, with no non-compliance issues identified.

Research Development Team: Following an invitation of the National Science Foundation, a full proposal to the NSF ERC program was supported by the RDT. In addition, RDT provided support for two proposals submitted to DOE, the Energy Frontier Research Center (EFRC) and the Industrial Assessment Center (IAC), and two other NSF competitions, a pre-proposal to the Materials Research Science and Engineering Center (MRSEC), and a full proposal to Inclusion Across the Nation of Communities of Learners and Underrepresented Discoverers in Engineering and Science (INCLUDES).

Research Informatics: The team presented its "Using Metrics to Guide Research Development Investments" poster at the National Organization of Research Development Professionals (NORDP) conference. The poster highlighted results of a research activity benchmarking that was completed earlier this year. Using the data analytics application Tableau Desktop, the unit plans to automate standard reporting as well as create better data visualizations and interactive dashboards.

Research Initiatives: Tessa Calhoun, assistant professor of chemistry, and Nadia Fomin, assistant professor of physics, were invited to submit proposals to the Research Corporation for Science Advancement-Cottrell Scholars. The Cottrell Scholar Award provides discretionary awards for research in chemistry, physics, and astronomy.

Research Integrity: The Office of Research Integrity now offers access to iThenticate software, a professional plagiarism detection and prevention technology used worldwide by publishers and research institutions to ensure the originality of written work. The office purchased 200 iThenticate licenses, which allows for 30 submissions of a maximum of 25,000 words, for a total of 6,000 submissions. These licenses will be distributed to colleges and departments across campus for use by faculty, staff, and graduate students.

Strategic Investments: ORE received 17 requests for Organized Research Unit funding totaling \$1.3 million, and was able to support three new ORUs (totaling \$164,000), as well as providing additional support to nine continuing ORUs (totaling \$678,400). Scholarly and Research Inventive Funds (SARIF) awarded \$47,646 to support EPPE, Art, Foreign Travel, Open Publishing, and Scholarly projects.

Sigma Xi: The UT Knoxville Chapter of Sigma Xi held a board meeting in May to decide the board membership for 2016-2017. The ORNL Sigma Xi chapter has begun to merge into the UT Knoxville chapter, creating a natural confluence between our organizations.

Undergraduate Research: The office coordinated and supported over 50 undergraduate students presenting at the National Conference of Undergraduate Research (NCUR) in Asheville, North Carolina; more than 400 students presenting at the annual Exhibition of Undergraduate Research and Creative Achievement (EUR&CA); and one student chosen for one of 60 slots to present her research to Congress at "Posters on the Hill" in Washington, DC. The Office presented four Undergraduate Research Faculty Mentor of the Year awards to faculty nominated by their undergraduate student mentees. Nearly 200 students conducting research on campus this summer attended the kickoff for the Summer Research Scholars program at Neyland Stadium. Additional development activities for these students included a Responsible Conduct of Research Seminar, a cross-cultural mentoring seminar, and a tour of ORNL.

UT Core Facilities Program: The UTCFP continues to explore mechanisms to help UT Core Facilities better serve their customers. One potential area of improvement lies in simplifying the scheduling and billing process by implementing an institutional core facility management software platform. The unit has evaluated several commercial vendors. The software tools should reduce the amount of time that facilities and departmental business offices spend on administrative tasks and lead to cost savings for both facilities and users.

Office of Research & Engagement • University of Tennessee

4th Quarterly Research Report • FY 2016

Cumulative: July 1, 2015 - June 30, 2016

Proposals, Awards, and Expenditures

College/Center/ Institute	Proposals Submitted				Awards Received				Estimated Total Research Expenditures (HERD ¹)	
	No.	% No. Incr. Over FY 15	Amount Requested	% \$ Incr. Over FY 15	No. ³	% No. Incr. Over FY 15	Amount Received	% \$ Incr. Over FY 15	Amount Expended	% \$ Incr. Over FY 15
College of Architecture and Design	7	16.7%	\$353,563	-66.2%	8	0.0%	\$333,304	1.9%	\$634,682	-8.3%
College of Arts and Sciences	466	-11.2%	\$130,452,476	-29.8%	392	1.8%	\$32,108,638	1.4%	\$39,182,719	7.7%
Haslam College of Business	33	-21.4%	\$21,310,290	88.2%	36	9.1%	\$4,845,228	-32.5%	\$8,499,186	-8.2%
College of Communication and Information	24	-11.1%	\$9,872,782	186.7%	13	-35.0%	\$1,929,355	4.4%	\$1,934,225	-19.1%
College of Education, Health, and Human Science	91	-15.7%	\$47,253,345	3.7%	52	-1.9%	\$15,119,868	-21.2%	\$4,946,205	-4.9%
College of Engineering	688	-7.3%	\$247,389,886	5.6%	620	24.0%	\$57,765,586	24.2%	\$75,494,307	6.3%
College of Law	1	-75.0%	\$116,117	194.8%	2	-33.3%	\$26,000	-57.3%	\$32,054	-61.6%
College of Nursing	17	-15.0%	\$7,240,159	19.5%	8	-57.9%	\$1,441,847	-51.0%	\$886,996	-21.9%
College of Social Work	37	-5.1%	\$29,157,792	-4.2%	23	-20.7%	\$3,389,422	-41.5%	\$678,447	-41.4%
Research Centers and Institutes	237	9.2%	\$50,681,472	-47.5%	290	15.1%	\$19,024,854	-37.1%	\$26,657,157	-15.5%
UT Space Institute	55	37.5%	\$8,928,696	8.6%	30	36.4%	\$2,136,966	58.2%	\$4,456,003	43.7%
Other ²	21	40.0%	\$3,700,437	-12.7%	25	66.7%	\$15,034,728	487.6%	\$11,155,136	-13.2%
Total	1,677	-6.1%	\$556,457,014	-11.2%	1,499	11.9%	\$153,155,796	2.4%	\$174,557,117	-0.1%

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.

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 data are pulled from Cayuse SP. Proposal data are pulled from TERA-PAMS for proposals submitted prior December 28, 2015. For proposals submitted after December 28, 2015 the data are pulled from Cayuse SP. Research expenditure data are 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 8/1/2016. The annual report will represent the final amounts for that fiscal year.

Office of Research & Engagement • University of Tennessee

4th Quarterly Research Report • FY 2016

Cumulative: July 1, 2015 - June 30, 2016

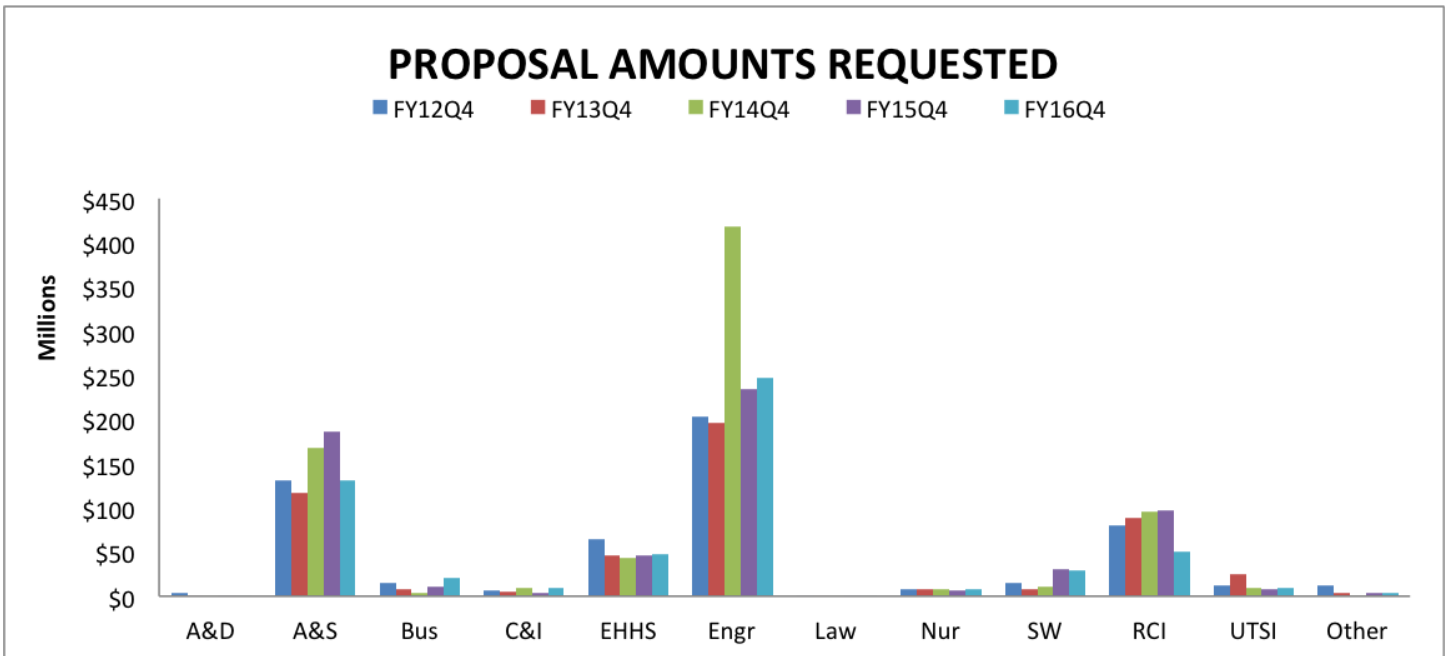
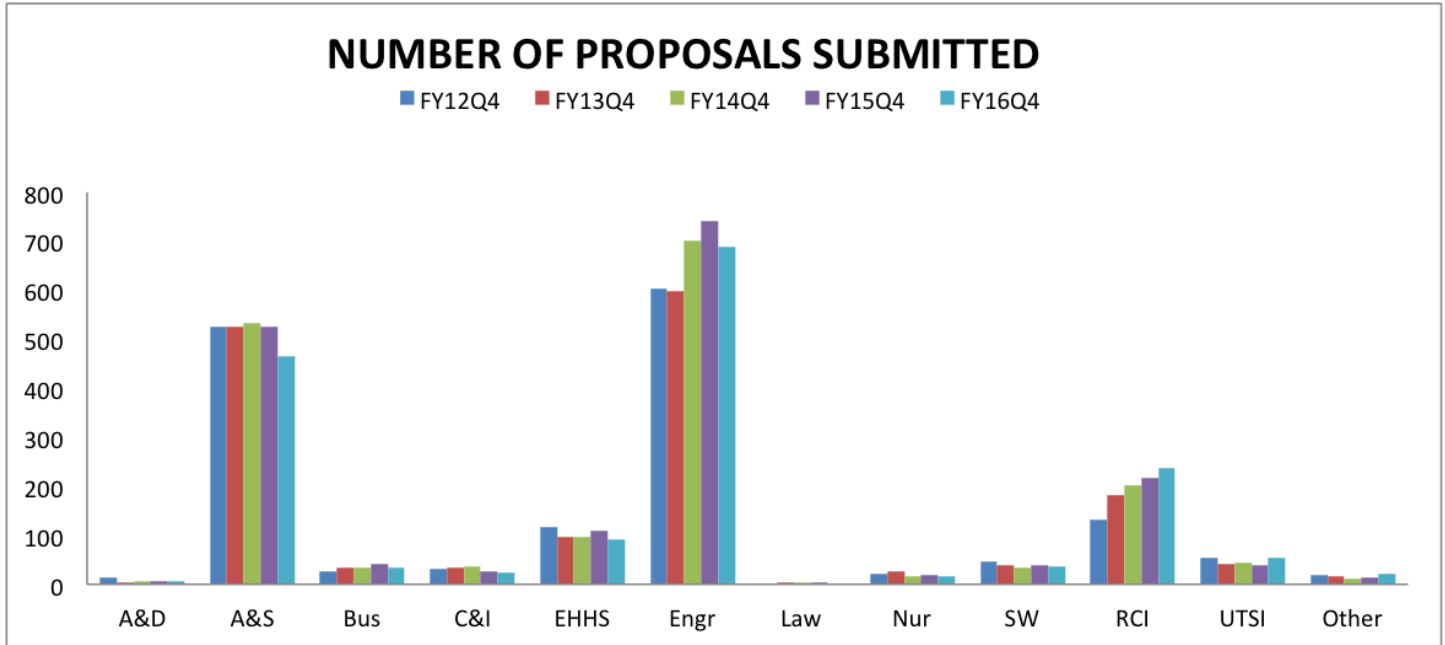
Top 20 Awards (by dollar value)

Investigators (Primary PI First)	Award Admin Department	Project Title	Sponsor	Anticipated Amount
	PI Home Department			
Eighmy, Thomas; Penumadu, Dayakar; Babu, Sudarsanam	Research administration	Institute for Advanced Composites Manufacturing Innovation	Collaborative Composite Solutions Corp.	\$13,462,227
	Research administration; CEE; MABE			
Cormier, Thomas; Read, Kenneth; Sorensen, Soren	Physics	ALICE Barrel Tracking Upgrade	Dept. of Energy	\$10,965,000
	Physics			
Tolbert, Leon; Blalock, Benjamin; Wang, Fei; Costinett, Daniel	Center for Electric Power	Design-Oriented Education and Hands-on Training with WBG Power Electronics for the Next Generation Power Engineering Workforce	DOE - Office of Energy Efficiency and Renewable Energy	\$2,655,747
	EECS			
Melcher, Charles; Zhuravleva, Mariya; Koschan, Merry	SMRC	Operating Agreement of the Scintillation Materials Research Center	Siemens	\$2,500,000
	SMRC; MSE			
White, Connie	CLEE	Tennessee State Personnel Development Grant	TN Dept. of Education	\$2,332,268
	CLEE			
Dongarra, Jack; Mucci, Philip; Danalis, Antonios; McCraw, Heike	Distinguished Research Professor - EECS	SI2-SSI: Collaborative Proposal: Performance Application Programming Interface for Extreme- scale Environments (PAPI-Ex)	NSF	\$2,126,446
	Distinguished Research Professor - EECS			
Fairhurst, Ann	Retail, Hospitality, and Tourism	Pellissippi State Project	Pellissippi State Community College	\$2,125,000
	Retail, Hospitality, and Tourism			
Wirth, Brian; Xu, Donghua; Zinkle, Steven	Nuclear engineering	A Multiscale Investigation of the Mechanisms Controlling Materials Degradation	DOE - Office of Science	\$1,930,897
	Nuclear engineering			
Fozo, Elizabeth; Campagna, Shawn; Calhoun, Tessa	Microbiology	Membrane alterations and daptomycin tolerance	HHS - National Institute of Allergy and Infectious Diseases	\$1,738,052
	Microbiology; Chemistry			
McFadden, Ronald	Educational Advancement Program	Student Support Services	Dept. of Education	\$1,680,460
	Educational Advancement Program			
Ripp, Steven; Smith, Jeremy; Simpson, Michael; Trinh, Cong; Hyatt, Philip	JIBS	BioEnergy Science Center, University of Tennessee, Phase II	DOE - Oak Ridge National Laboratory	\$1,668,291
	CEB; BCMB; Bredesen Center; Chemical engineering; JIBS			
Rose, Garrett	EECS	Foundations of Nanoelectronic Physically Unclonable Computing Systems	DOD - Air Force Office Scientific Research	\$1,512,846
	EECS			
Grzywacz, Robert	Physics	Support for Joint Institute for Nuclear Physics and Applications	DOE - Oak Ridge National Laboratory	\$1,494,370
	Physics			
Crouter, Scott; Bassett, David	Kinesiology Recreation & Sport	Novel Approaches for Predicting Free-Living Physical Activities in Youth	HHS - National Institute of Child Health and Human Development	\$1,453,574
	Kinesiology Recreation & Sport			
Hay, Jessica	Psychology	Infant statistical learning: Resilience, longevity, and specificity	HHS - National Institute of Child Health and Human Development	\$1,309,975
	Psychology			
Ma, Zhongguo	CEE	Study of Alkali-Silica Reaction Effects on Stressed- Confined Concrete Nuclear Thick Structures	DOE - Oak Ridge National Laboratory	\$1,280,802
	CEE			
Rose, Garrett; Plank, James; Dean, Mark	EECS	Development of a Memristive Dynamic Adaptive Neural Network Array (mrDANNA)	DOD - Air Force Research Laboratory	\$1,217,929
	EECS			
Holleman, Jeremiah; Blalock, Benjamin	EECS	Nano-Watt Analog Signal Processing for NINA: N-zero Integrated aNalog classifier	Honeywell	\$1,152,968
	EECS			
Kamyshkov, Yuri; Spanier, Stefan; Handler, Thomas; Efremenko, Yuri	Physics	Elementary Particle Interactions	DOE - Office of Science	\$1,138,000
	Physics			
Hillyer, Sarah; Huffman, Ashleigh	Admin-EHHS	Better World: Empowering Global Change Agents through Sports	Department of State	\$1,030,000
	Admin-EHHS			

Office of Research & Engagement • University of Tennessee

4th Quarterly Research Report • FY 2016

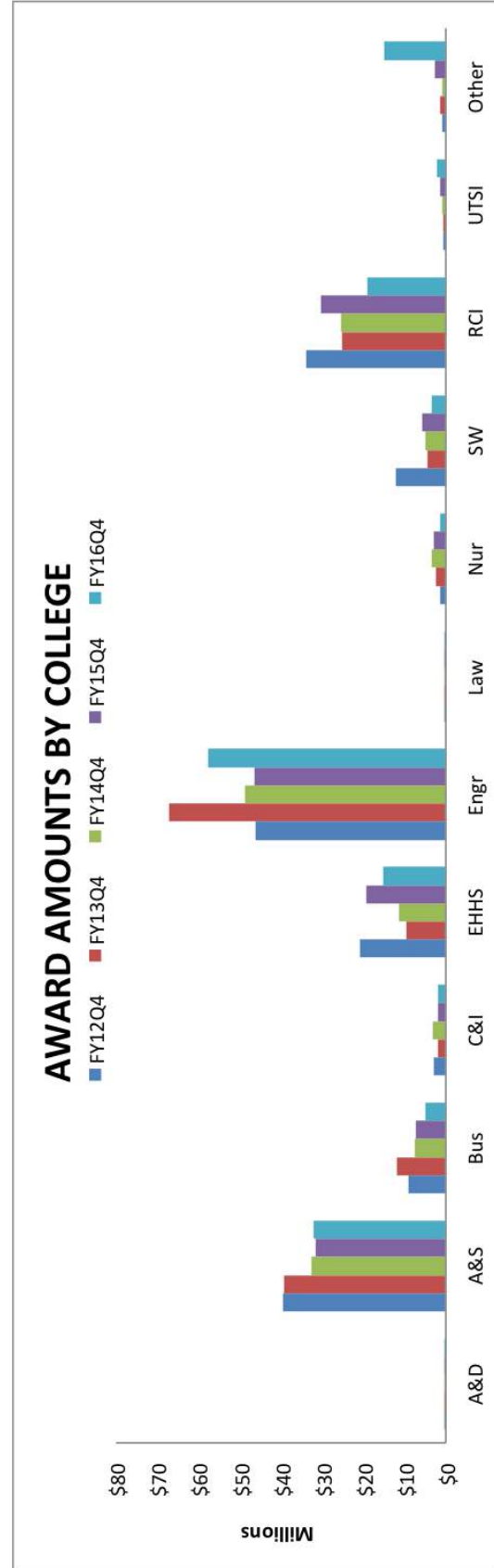
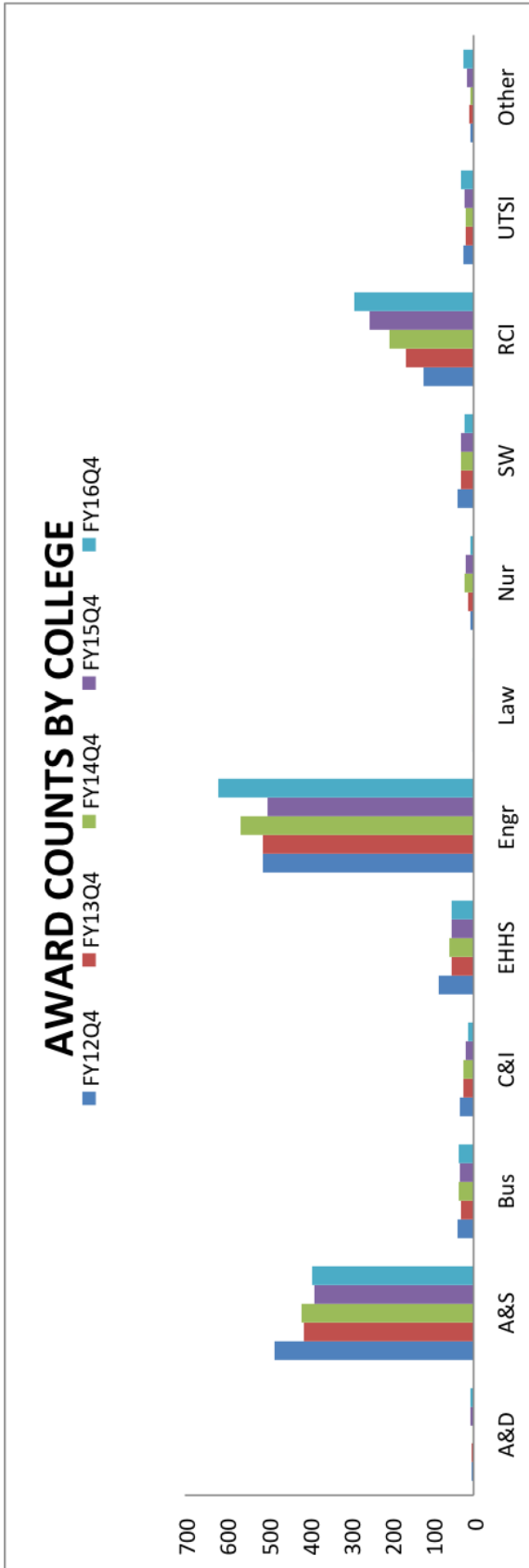
Cumulative: July 1, 2015 - June 30, 2016



Office of Research & Engagement • University of Tennessee

4th Quarterly Research Report • FY 2016

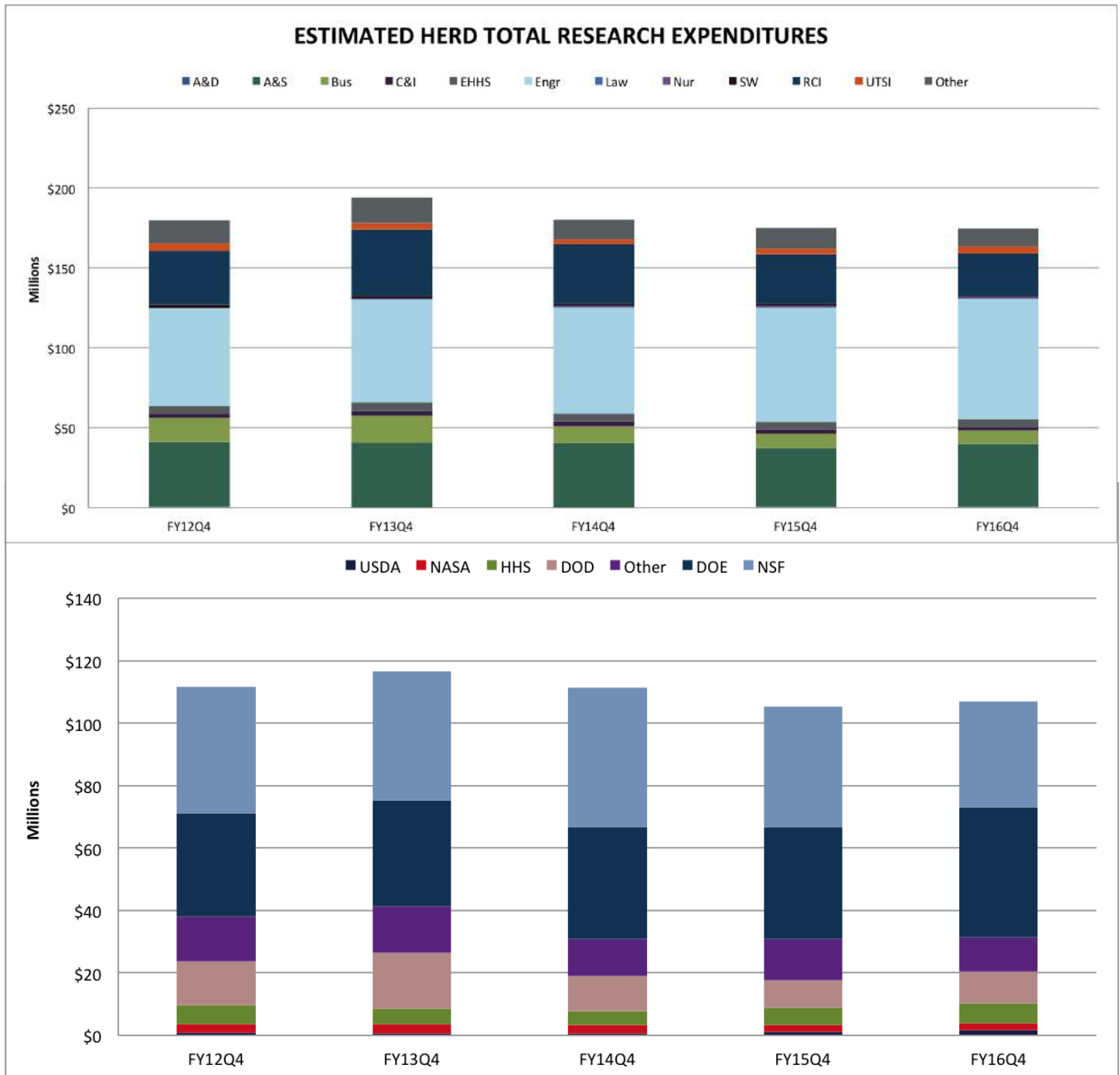
Cumulative: July 1, 2015 - June 30, 2016



Office of Research & Engagement • University of Tennessee

4th Quarterly Research Report • FY 2016

Cumulative: July 1, 2015 - June 30, 2016



Office of Research & Engagement • University of Tennessee

4th Quarterly Research Report • FY 2016

Cumulative: July 1, 2015 - June 30, 2016

