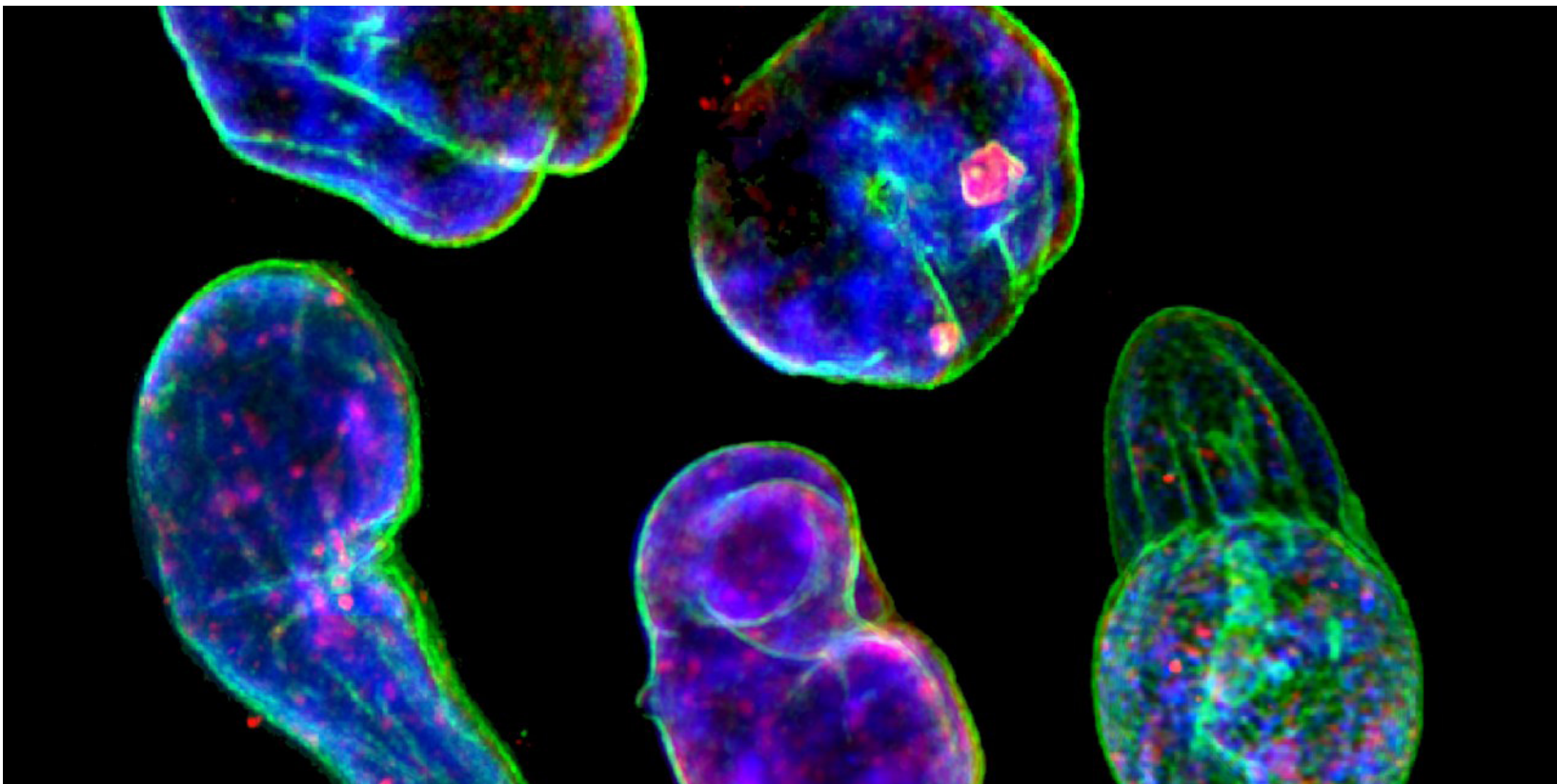


University of Tennessee
Office of Research & Engagement

Quarterly Research Activity Report Q2 FY20

Cumulative for July 1, 2019 – December 31, 2019



Rachel Patton McCord, assistant professor in the Department of Biochemistry and Cellular and Molecular Biology, was awarded a \$1.84 million Maximizing Investigators' Research Award (MIRA) from the National Institute for General Medical Science (NIGMS) to investigate how the 3D folded structure of the human genome reacts to physical stress in health and disease

Data Summary

In the second quarter of fiscal year 2020 (Q2 FY20), proposal dollars requested and total funds expended on research and development by UT researchers remained stable while the awarded dollars exceeded expectations.

The total number of proposals submitted in the first two quarters of FY20 (n=793) was down 8%, while the total requested amount of \$257 million represented an 8% increase when compared to the first two quarters of fiscal year 2019. This indicates that UT researchers submitted more large proposals (over 1 \$M) in the current fiscal year (n=50 requesting \$112M) than in the previous FY19 (n=43 requesting \$100M).

The total award amount of \$111 million received in Q1-Q2 of FY20 indicated a 37% increase over the first two quarters of FY19. More importantly, this amount represents 80% of the total award amount received during all four quarters of previous FY19 (\$140M). The significant increase in the award amount was recorded for several UT colleges and units:

- UT Space Institute by 314%
- College of Social Work by 71%
- Tickle College of Engineering by 49%
- College of Communication and Information by 48%
- College of Arts & Sciences by 23%
- College of Education, Health, and Human Sciences by 14%
- Haslam College of Business by 7%
- College of Nursing by 2%

Further analysis indicates that the increase in the award amount in the first two quarters of FY20 versus Q1-Q2 FY19 came from both newly funded (\$52M or 46% of the total awarded amount) and ongoing (\$60M or 54%) projects funded in previous years. In terms of specific funding sources, the increases were recorded for all sources of award obligations except Foreign sponsors. Significant increases were recorded for Tennessee Government (114% increase), Private Profit (45% Increase) and Federal Agencies (30% increase).

The increase in the award amount received from Federal Agencies came from increases in funding received from most of the major federal sponsors such as Department of Energy, National Science Foundation, Department of Health, and National Aeronautics and Space Administration.

Some notable awards in Q2 FY20 include:

Karen Lloyd, associate professor of microbiology, received a \$2.5 million grant from the Department of Energy to conduct research on the effects of thawing permafrost on the environment.

Rachel Patton McCord, assistant professor in the Department of Biochemistry and Cellular and Molecular Biology, was awarded a \$1.84 million Maximizing Investigators' Research Award (MIRA) from the National Institute for General Medical Science (NIGMS) to investigate how the 3D folded structure of the human genome reacts to physical stress in health and disease.

PROPOSALS, AWARDS, & R&D EXPENDITURES: FY20 Q1-Q2 vs FY19 Q1-Q2 (Table 1)

College/Center/Institute	Proposals Submitted				Awards Received				Estimated Total R&D Expenditures (HERD ¹)	
	No.	% No. Change Over FY19	Amount Requested	% \$ Change Over FY19	No. ³	% No. Change Over FY19	Amount Received	% \$ Change Over FY19	Amount Expended	% \$ Change Over FY19
College of Architecture & Design	2	0%	\$72,391	-1%	3	200%	\$63,392	-37%	\$436,023	-28%
College of Arts & Sciences	213	3%	\$72,833,433	69%	174	-9%	\$20,064,105	23%	\$27,881,783	-10%
Haslam College of Business	18	38%	\$3,020,596	100%	14	8%	\$2,063,228	7%	\$5,970,412	5%
College of Communication & Information	14	-13%	\$1,928,710	-74%	12	20%	\$2,477,390	48%	\$2,109,129	14%
College of Education, Health, & Human Sciences	54	-10%	\$21,089,444	-41%	30	3%	\$6,591,633	14%	\$4,221,083	6%
Tickle College of Engineering	328	-4%	\$124,795,987	25%	293	-3%	\$47,158,907	49%	\$40,292,578	1%
College of Law	1	-50%	\$12,802	-94%	1	N/C*	\$100,000	N/C*	\$1,197,656	25%
College of Nursing	9	-40%	\$3,990,855	-6%	6	-45%	\$1,538,304	2%	\$1,103,568	19%
College of Social Work	19	-17%	\$4,511,022	-70%	23	44%	\$7,987,472	71%	\$1,102,776	20%
Research Centers & Institutes	110	-30%	\$20,436,525	-12%	135	-27%	\$10,985,991	-8%	\$13,183,521	13%
UT Space Institute	8	-65%	\$1,309,416	-82%	18	38%	\$3,386,908	314%	\$2,677,714	15%
Other ²	17	183%	\$3,118,693	223%	24	14%	\$8,902,425	73%	\$2,157,998	-8%
Total	793	-8%	\$257,119,874	8%	733	-7%	\$111,319,755	37%	\$102,334,241	0%

Notes

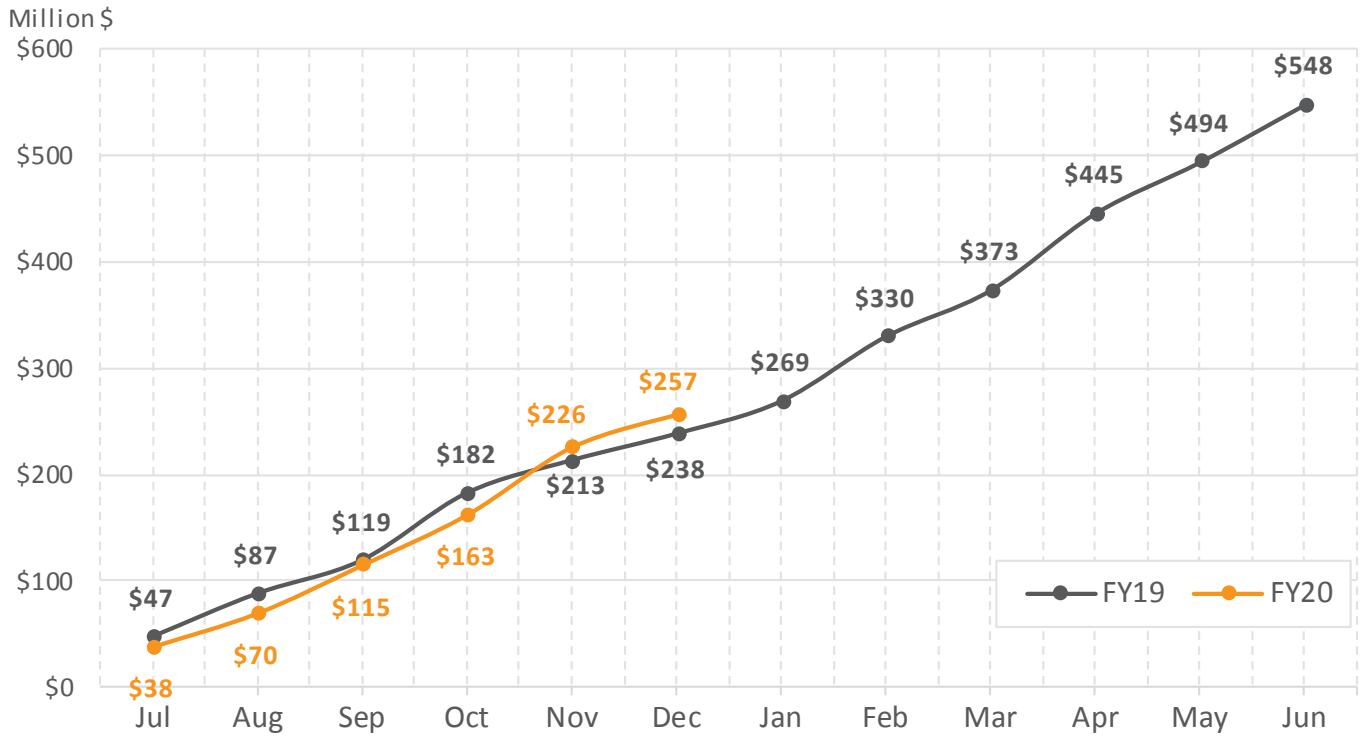
1. HERD - The Higher Education Research and Development Survey, successor to the Survey of Research and Development Expenditures at Universities and Colleges, is the primary source of information on R&D expenditures at U.S. colleges and universities.
2. R&D expenditure data is collected from the "NSF Research Survey Estimate" report provided by UT IRIS Data Warehouse. The "NSF Research Survey Estimate" report provides an estimate of the R&D expenditures for UT colleges and research centers and institutes. This report does not contain expenditure data from the UT Research Foundation, which is included in the official NSF HERD survey during the submission of the survey. The expenditures data provided in the Office of Research & Engagement quarterly research activity report should be treated as an estimate reflecting trends for UT colleges and research centers and institutes only.
3. Other - This field captures any research proposals, awards, and expenditures not included in the categories above.
4. The Number of Awards Received represents the cumulative number of funding award increments. One project may receive multiple funding awards.

* N/C - Not Calculable

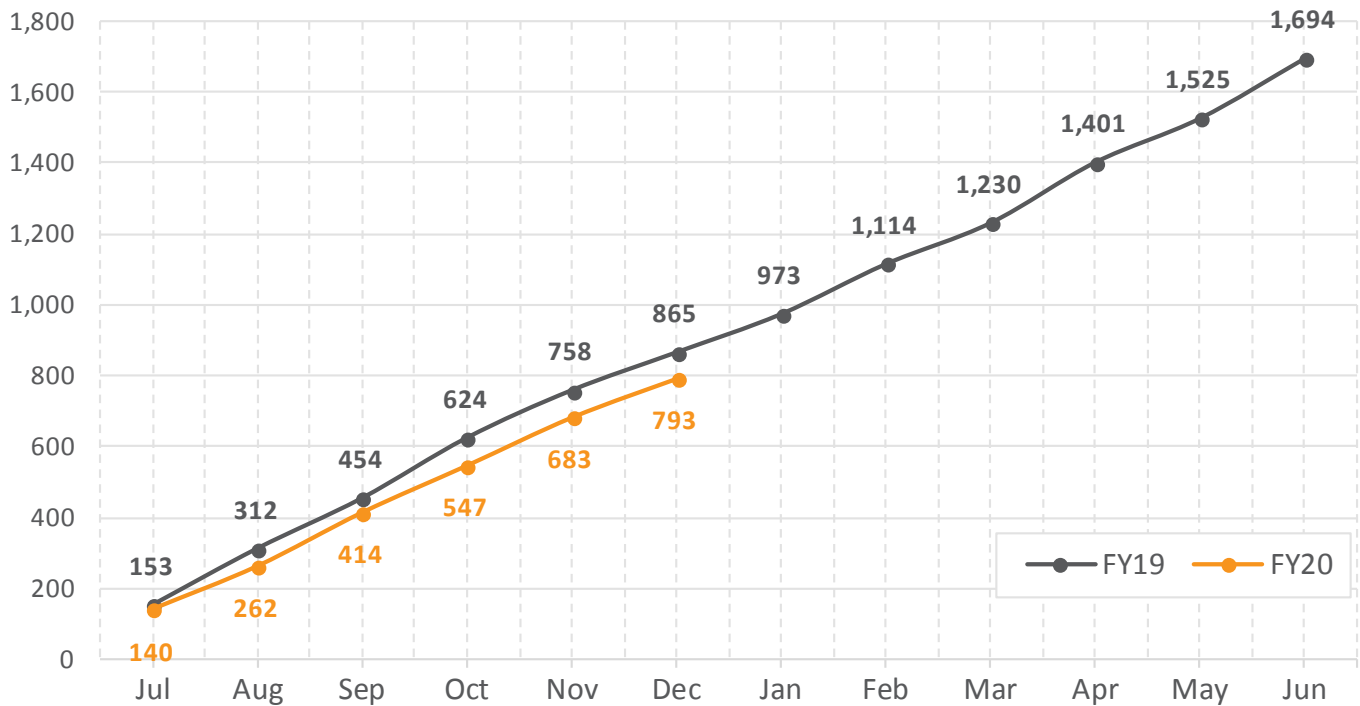
TOP 10 NEW PROJECTS: FY20 Q1-Q2 (Table 2)
(by total anticipated dollar value)

Investigators (Primary PI First)	Award Admin Dept	PI Home Dept	Project Title	Anticipated Amount	Sponsor	Activity Type	Project Period
Mason, Michael; Lieberthal, Robert	Ctr for Behavioral Health Rsch	Social Work; Education, Health & Human Sci Admin	Treating Young Adult Cannabis Use Disorder with Text Message-Delivered Peer Network Counseling	\$3,226,143	Dept. of Health - National Institute on Drug Abuse	Basic Research	8/1/2019 5/31/2024
Cunningham, Maryanne; Hadjiharalambous, Chris; Ford, Deidre; Forrest-Bank, Shandra	Office of Rsch & Public Service	Office of Rsch & Public Service; Social Work-Admin	TN 21st Century Community Learning Centers Database Support & Program Evaluation FY 20-24	\$2,655,151	Tennessee Department of Education	Public Service	10/1/2019 9/30/2024
Lloyd, Karen; Vishnivetskaya, Tatiana; Steen, Andrew	Microbiology	Microbiology; CEB	Linking copound-specific carbon degradation to greenhouse gas production during thaw & collapse of Arctic permafrost microbial communities	\$2,537,280	Dept. of Energy - Office of Biological & Environmental Research	Basic Research	9/15/2019 9/14/2022
Forrest-Bank, Shandra; Cunningham, Maryanne; Wallace, Heather Lynn	Office of Rsch & Public Service	Social Work -Admin; Office of Rsch & Public Service	FY 20 CCDF - UT SWORPS Child Care Supportive Services	\$2,255,364	Tennessee Department of Human Services -Child Care Planning & Development	Public Service	10/1/2019 9/30/2020
Schmisseur, John; Balas, Mark; Moeller, Trevor; Kreth, Phillip; Bond, Ryan	UTSI MABE Program	UTSI MABE Program	Aerostructural Analysis Supporting the Development of Hypersonic Vehicle Flight Test Structures	\$2,097,511	University of Dayton Research Institute / Dept. of Defense - Air Force Research Laboratory	Basic Research	12/1/2018 8/24/2022
Bosilca, George Martian; Herault, Thomas	Innovative Computing Lab	Innovative Computing Lab	Collaborative Research: Frameworks: Production quality Ecosystem for Programming & Executing eXtreme-scale Applications (EPEXA)	\$1,995,685	National Science Foundation	Basic Research	11/1/2019 10/31/2024
McCord, Rachel	Biochemistry, Cellular & Molecular Biology	Biochemistry, Cellular & Molecular Biology	Folding, Misfolding, & Unfolding: How human 3D genome structure resists, adapts, or succumbs to physical stresses in health & disease	\$1,839,781	Dept. Of Health - National Institute of General Medical Sciences	Basic Research	9/1/2019 6/30/2024
Mandrus, David	JIAM	Materials Science & Engr	EPiQS Materials Synthesis Investigators	\$1,700,000	Gordon & Betty Moore Foundation	Basic Research	11/13/2019 9/1/2024
Zawodzinski, Thomas; Goenaga Jimenez, Gabriel; Foister, Shane	Chemical & Biomolecular Engr	Chemical & Biomolecular Engr	Reversible Fuel Cells for Long Duration Energy Storage	\$1,499,149	Dept. of Energy	Applied Research	6/6/2019 6/5/2021
Stuart, Gregory	Psychology	Psychology	Alcohol, minority stress, & intimate partner violence: Temporal & prospective associations in sexual minority young adults	\$1,362,669	University of Wisconsin - Milwaukee/ Dept. of Health - National Institute on Alcohol Abuse & Alcoholism	Basic Research	6/1/2019 6/30/2024

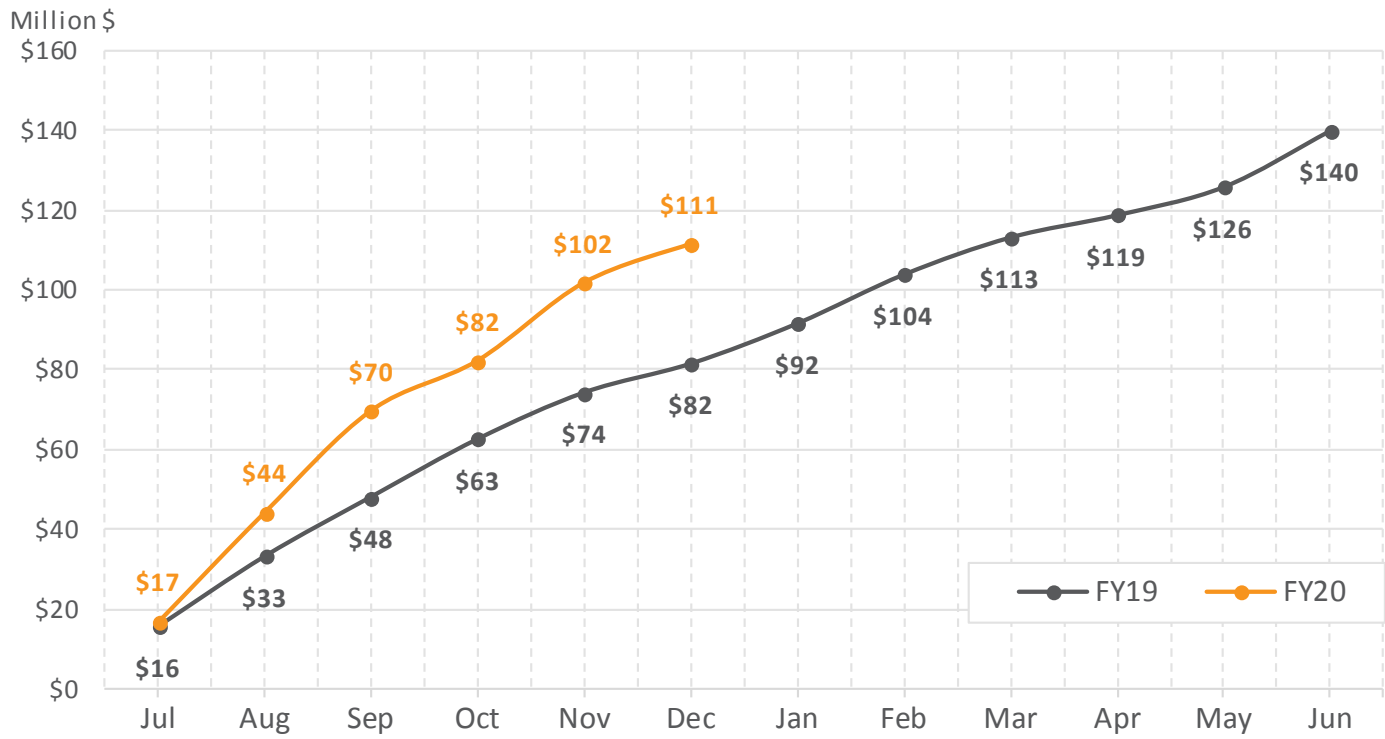
CUMULATIVE PROPOSAL AMOUNT: FY20 vs. FY19 (Figure 1)



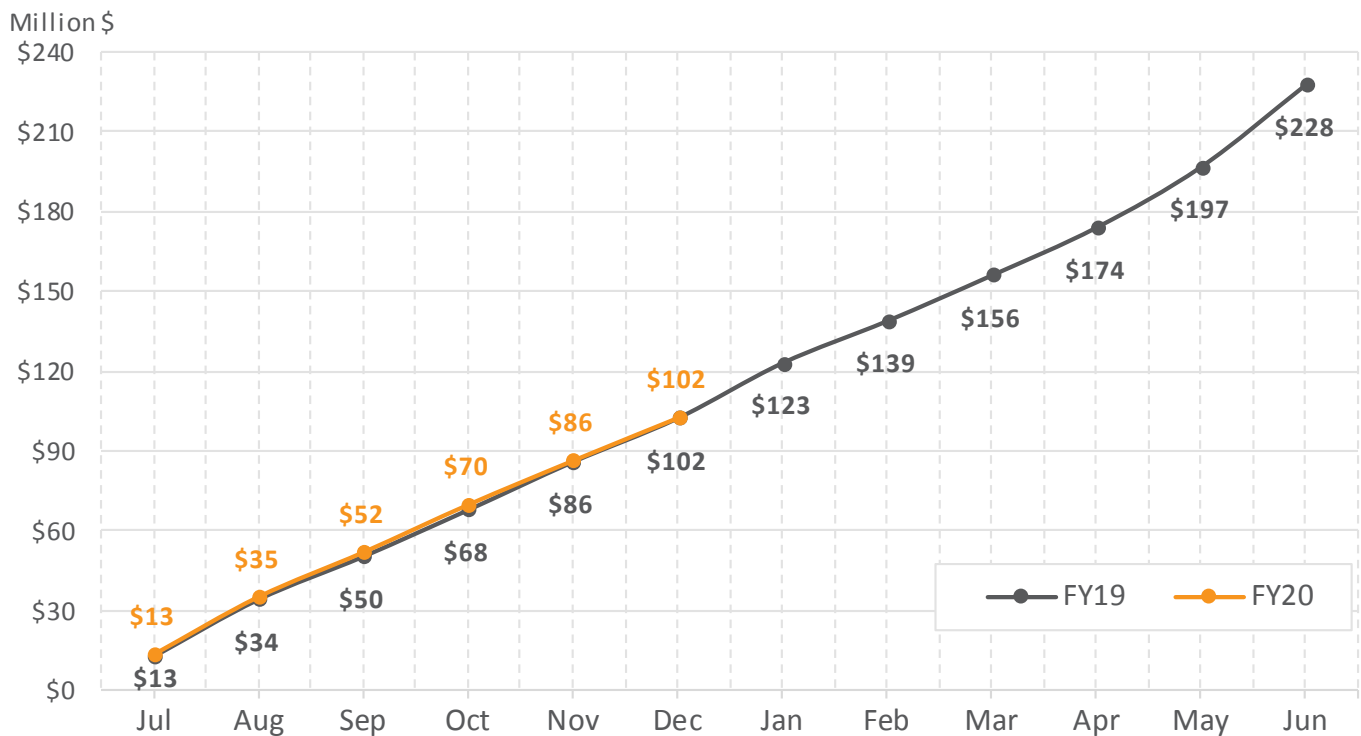
CUMULATIVE PROPOSAL COUNT: FY20 vs. FY19 (Figure 2)



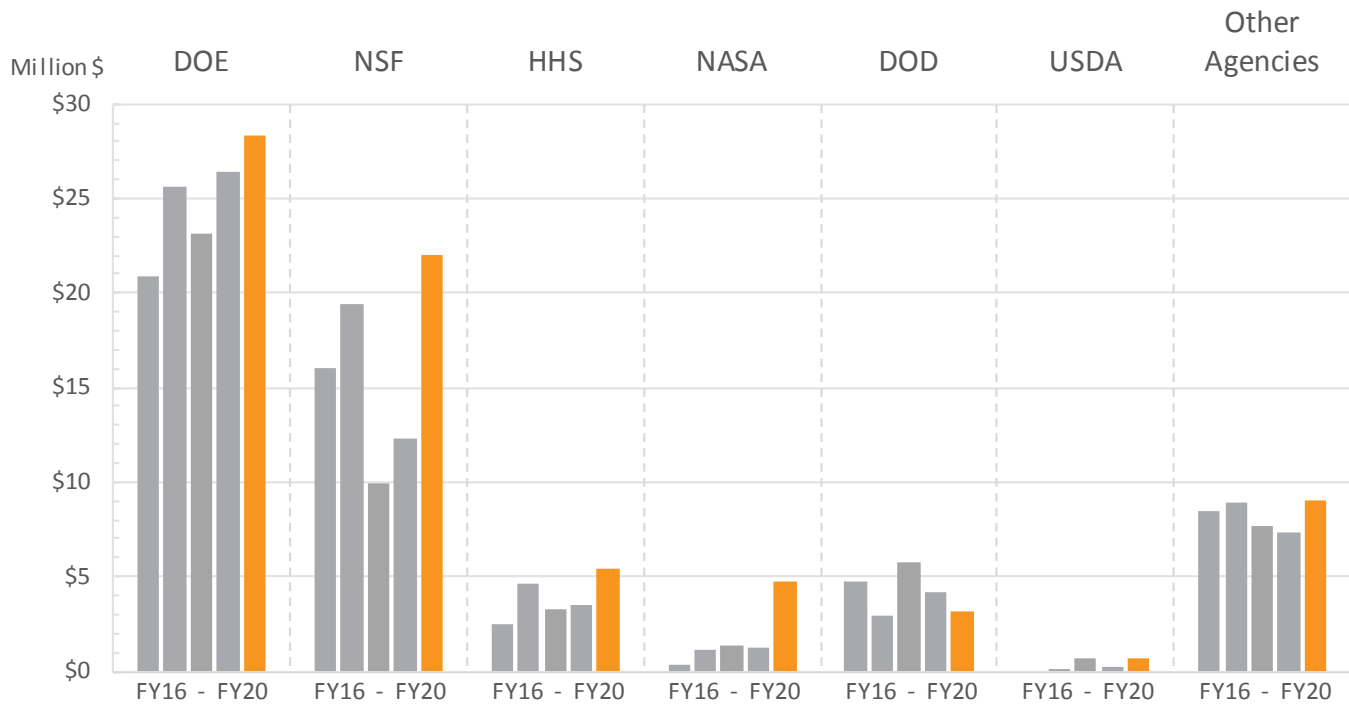
CUMULATIVE AWARD AMOUNT: FY20 vs. FY19 (Figure 3)



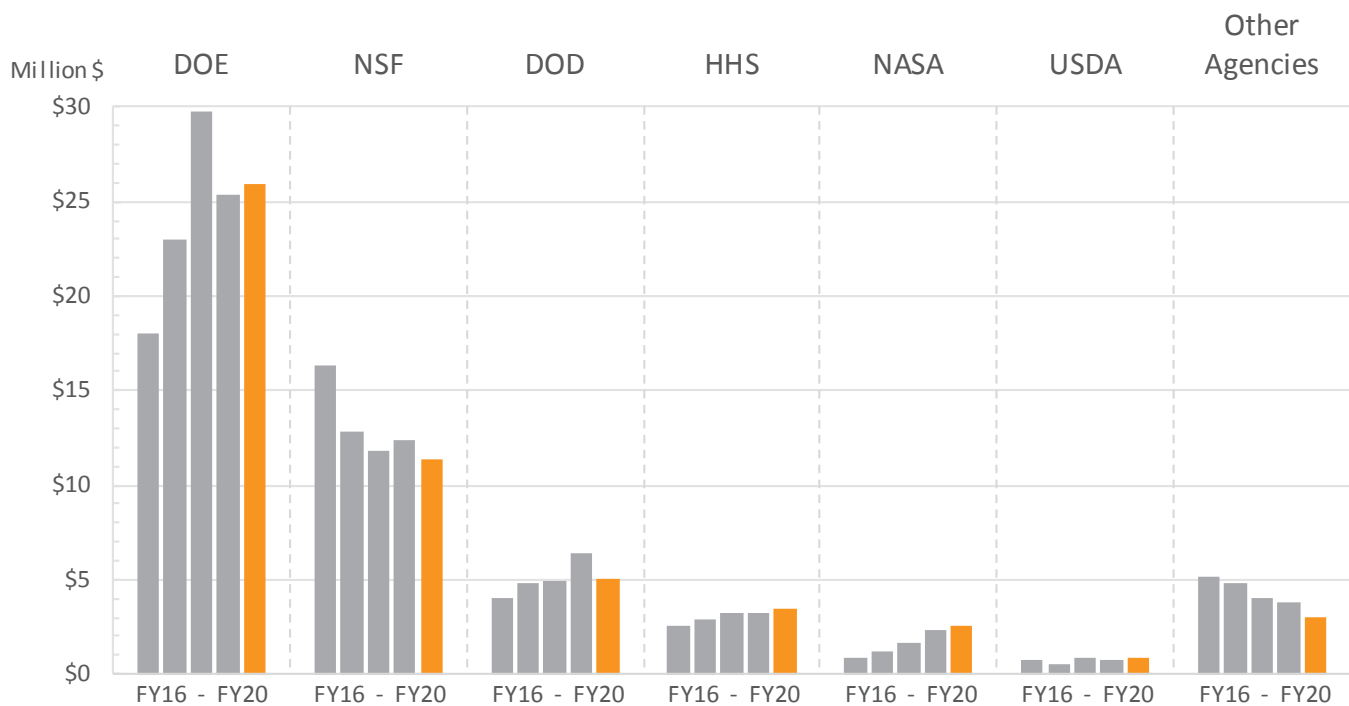
CUMULATIVE AMOUNT EXPENDED ON R&D: FY20 vs. FY19 (Figure 4)



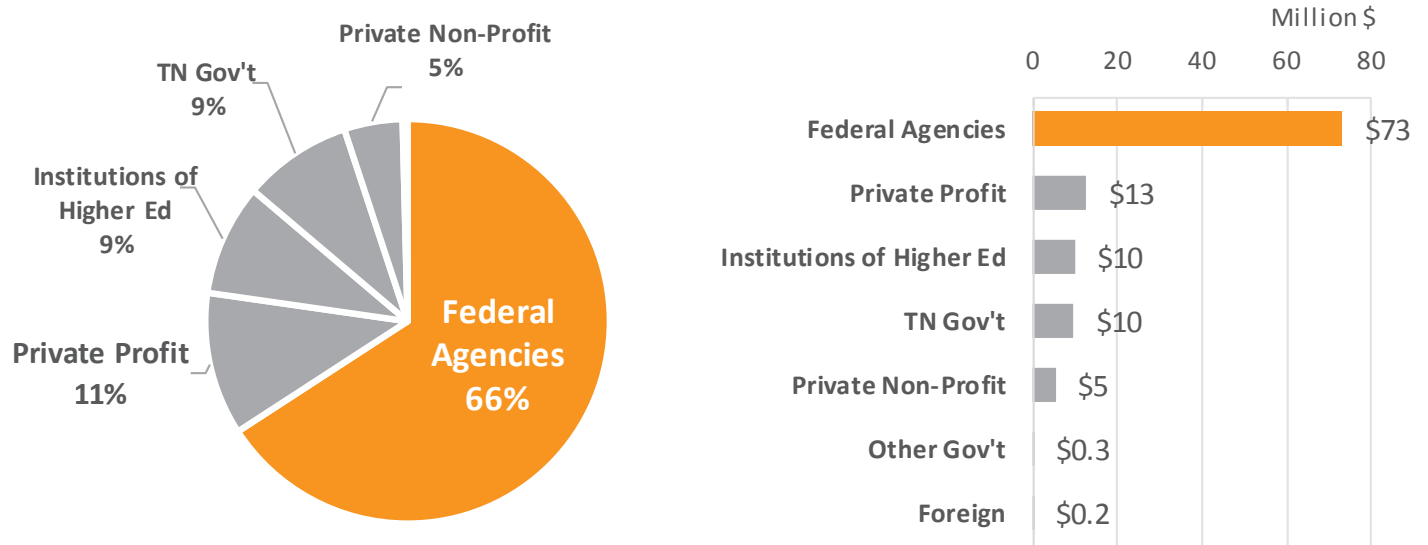
AWARDED DOLLARS BY FEDERAL AGENCY: FY16-FY20 Q1-Q2 (Figure 5)



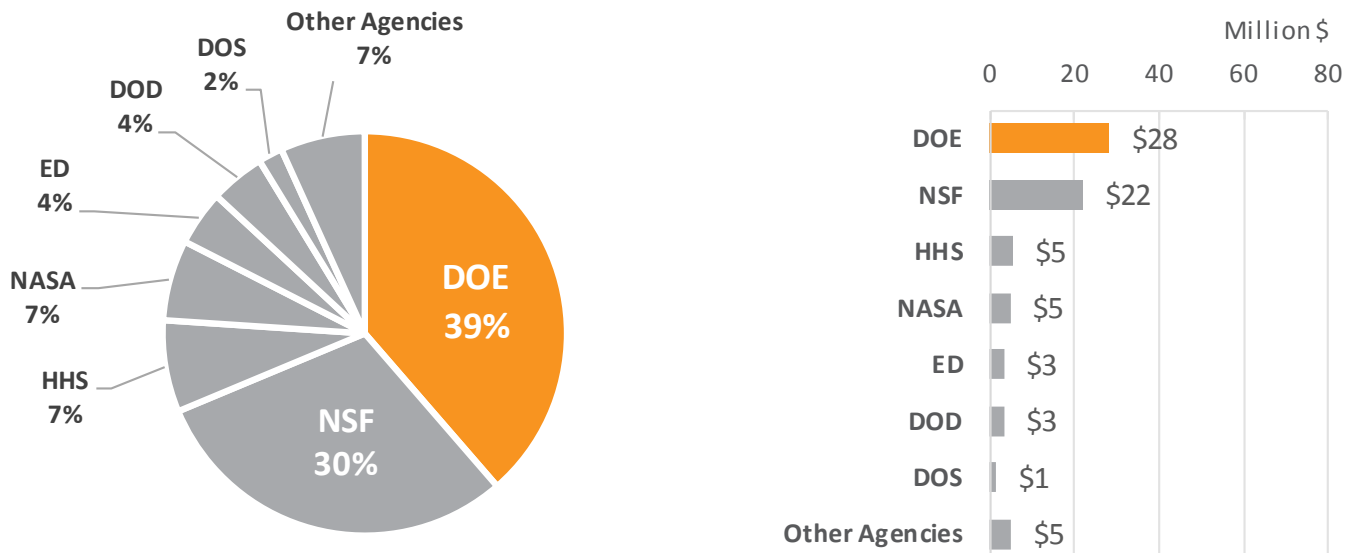
R&D EXPENDITURES BY FEDERAL AGENCY: FY16-FY20 Q1-Q2 (Figure 6)



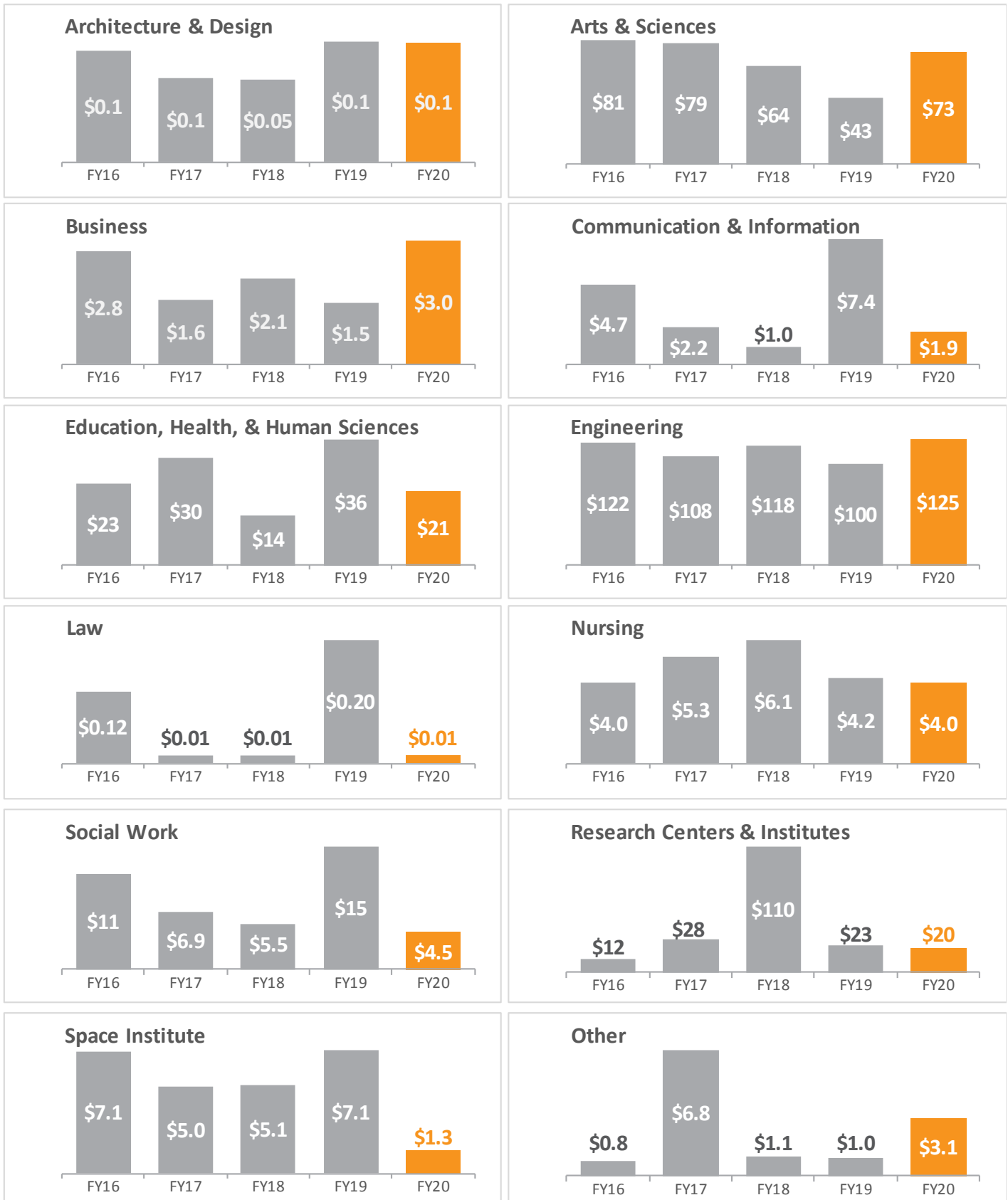
AWARDED DOLLARS BY SOURCE: FY20 Q1-Q2 (Figure 7)



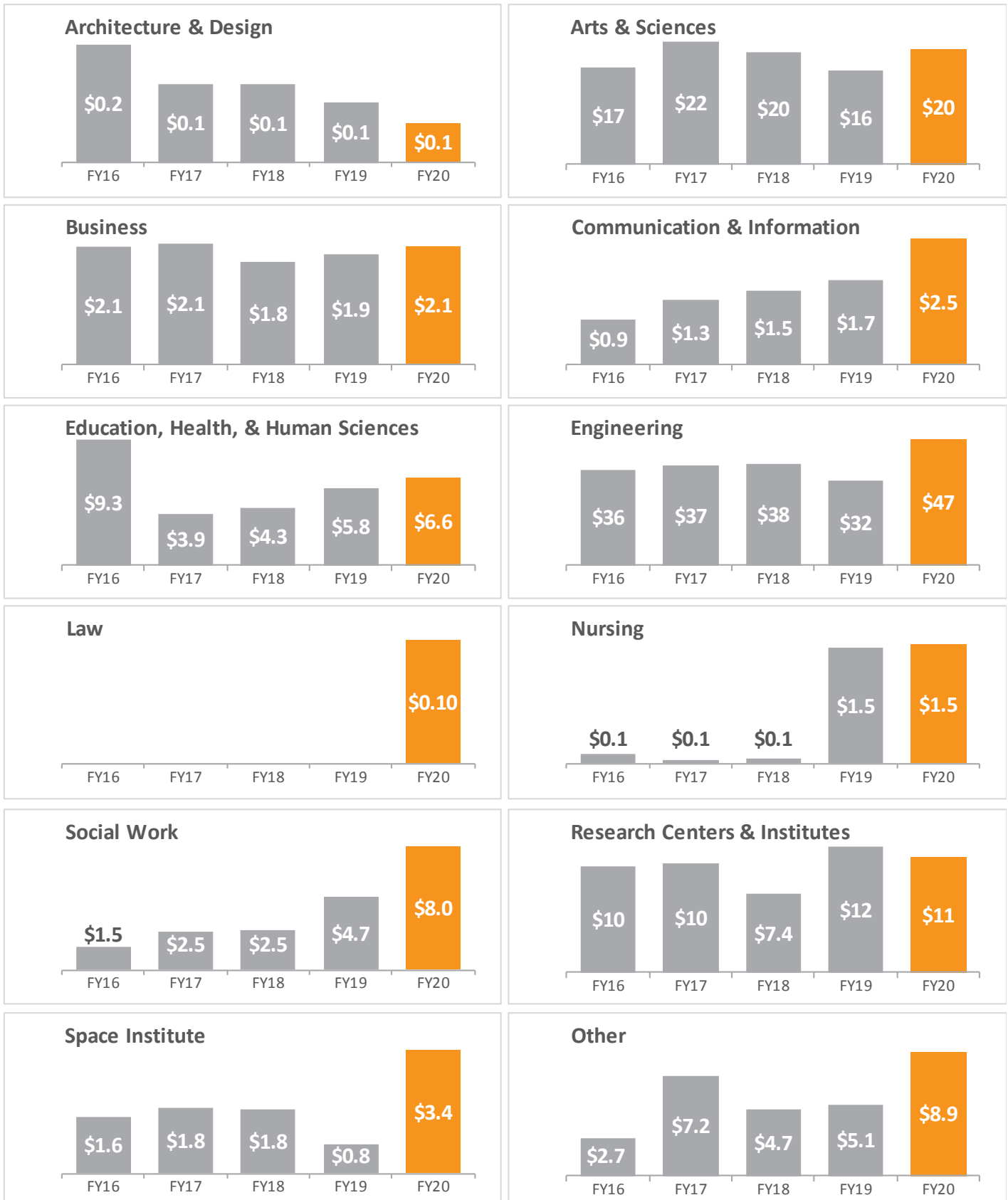
FEDERAL AWARDED DOLLARS BY AGENCY: FY20 Q1-Q2 (Figure 8)



PROPOSED AMOUNT BY COLLEGE: FY16-FY20 Q1-Q2 (Figure 9)
(Dollars in Millions. Each chart has its own scale)

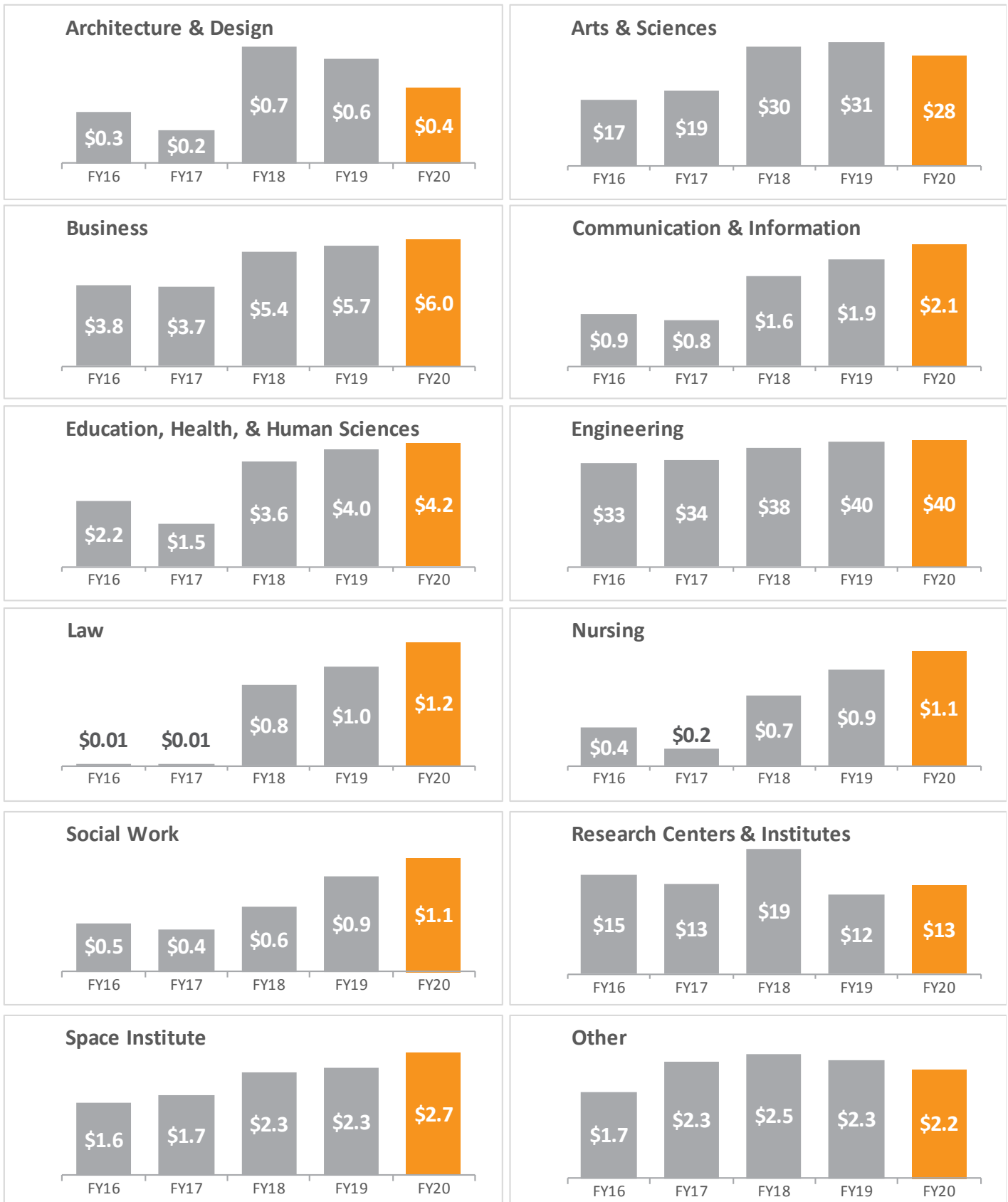


AWARDED AMOUNT BY COLLEGE: FY16-FY20 Q1-Q2 (Figure 10)
 (Dollars in Millions. Each chart has its own scale)



AMOUNT EXPENDED ON R&D BY COLLEGE: FY16-FY20 Q1-Q2 (Figure 11)

(Dollars in Millions, Each chart has its own scale)



Data Notes

Each Quarterly Research Report is a cumulative fiscal year-to-date summary. Award, proposal, and expenditure data include UT Knoxville, UT Space Institute, and University Wide Administration. Data depicting colleges and research centers and institutes is presented to show trends within each unit.

Award and proposal data is collected from Cayuse SP (electronic system for routing of sponsored projects) and includes projects sponsored for Basic, Applied and Developmental research activities as well as for Public Service, Training, Instruction, Scholarship, and Fellowship activities.

To ensure consistency of the Office of Research and Engagement reports, all quarterly and annual report award selection is based on the UT Report Date (award effective date). The proposal selection is based on the Proposal Approval Date.

R&D expenditure data is collected from the “NSF Research Survey Estimate” report provided by UT IRIS Data Warehouse. The data for the “NSF Research Survey Estimate” report is collected and reported according to the NSF HERD Survey and covers three R&D activities - basic research, applied research, and development. These R&D activities can have the following sources of funds: U.S. federal government, state and local government, business, nonprofit organizations, institutional funds, and other sources such as funds from foreign entities and gifts designated by the donors for research. Please visit the following link to learn more about the survey and R&D definitions: www.nsf.gov/statistics/srvyherd/.

The “NSF Research Survey Estimate” report provides an estimate of the R&D expenditures for UT colleges and research centers and institutes. This report does not contain expenditure data from the UT Research Foundation, which is included in the official NSF HERD survey during the submission of the survey. The expenditures data provided in the Office of Research & Engagement quarterly research activity report should be treated as an estimate reflecting trends for UT colleges and research centers and institutes only.

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 January 13, 2020. The annual report will represent the final amounts for that fiscal year.