

OFFICE OF RESEARCH & SPONSORED PROGRAMS

FY 2020 ANNUAL REPORT



Extramural Awards (FY10 - FY20) & 2020 Publications

303 University Drive
Dean Circle #7
Mangilao Guam 96913-1800
Phone: 671-735-2989

www.uog.edu/research

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Letter from Vice Provost of Research & Sponsored Programs

DR. RACHAEL T. LEON GUERRERO

Hafa Adai!

For most of us, 2020 will be marked by COVID-19 and the considerable challenges that came with a global pandemic. For the University of Guam, 2020 will also be marked with great accomplishments that have taken place, and we are proud of our university community for its dedication, teamwork, and resiliency in the face of the pandemic.

As a land-grant university, research is a part of our mission. Research impacts all areas – from student success and cutting-edge academic programs to locally sustainable lifestyles. Last year, UOG completed a strategic planning process and published the *Para Hulo Strategic Plan of 2019-2024*. Strategic Initiative #1, “Being recognized as a RESEARCH UNIVERSITY centered in island wisdom”, sets the stage for research to become an even more prominent activity at the University. As stated within Strategic Initiative #1, the goal is for the University of Guam to become a nationally and internationally recognized research university as a Doctoral Professional University (DP/U) under the Carnegie Foundation for the Advancement of Teaching. Currently, the UOG is classified as “Master’s Colleges and Universities I”. This new Carnegie (DP/U) classification will earn the University of Guam a respected voice in the global conversation on topics intimately familiar to and of concern to this region and its cultures, such as marine science, climate change, and indigenous languages and cultures.

We are pleased to report that significant progress has been made in the realization of the above-mentioned goals, and despite the daunting challenges caused by the pandemic, this has been an outstanding year for research and scholarly achievements here at the University of Guam. In FY2020, UOG received a new five-year \$20M National Science Foundation funded Established Program to Stimulate Competitive Research (EPSCoR) grant, and a 3rd five-year cycle of funding of \$7.3M for the National Cancer Institute funded Pacific Island Partnership for Cancer Health Equity (U54-PIPCHE) grant. These and many other projects were accomplished by the hardworking faculty and staff of UOG who continue to remain competitive in securing extramural funding. In FY2020, we collaborated with multiple off-island scientists and institutions, provided employment to the local community, and offered students the opportunity to gain valuable research experience.

The Office of Research & Sponsored Programs is here to serve our university family and community stakeholders, so please feel free to contact our office if you have any questions or need additional information.

Si yu’os ma’ase,



Rachael T. Leon Guerrero, PhD, RDN
Professor of Nutrition
Vice Provost of Research & Sponsored Programs

CHART 1

Annual Grant Awards Total

10 Year Comparison

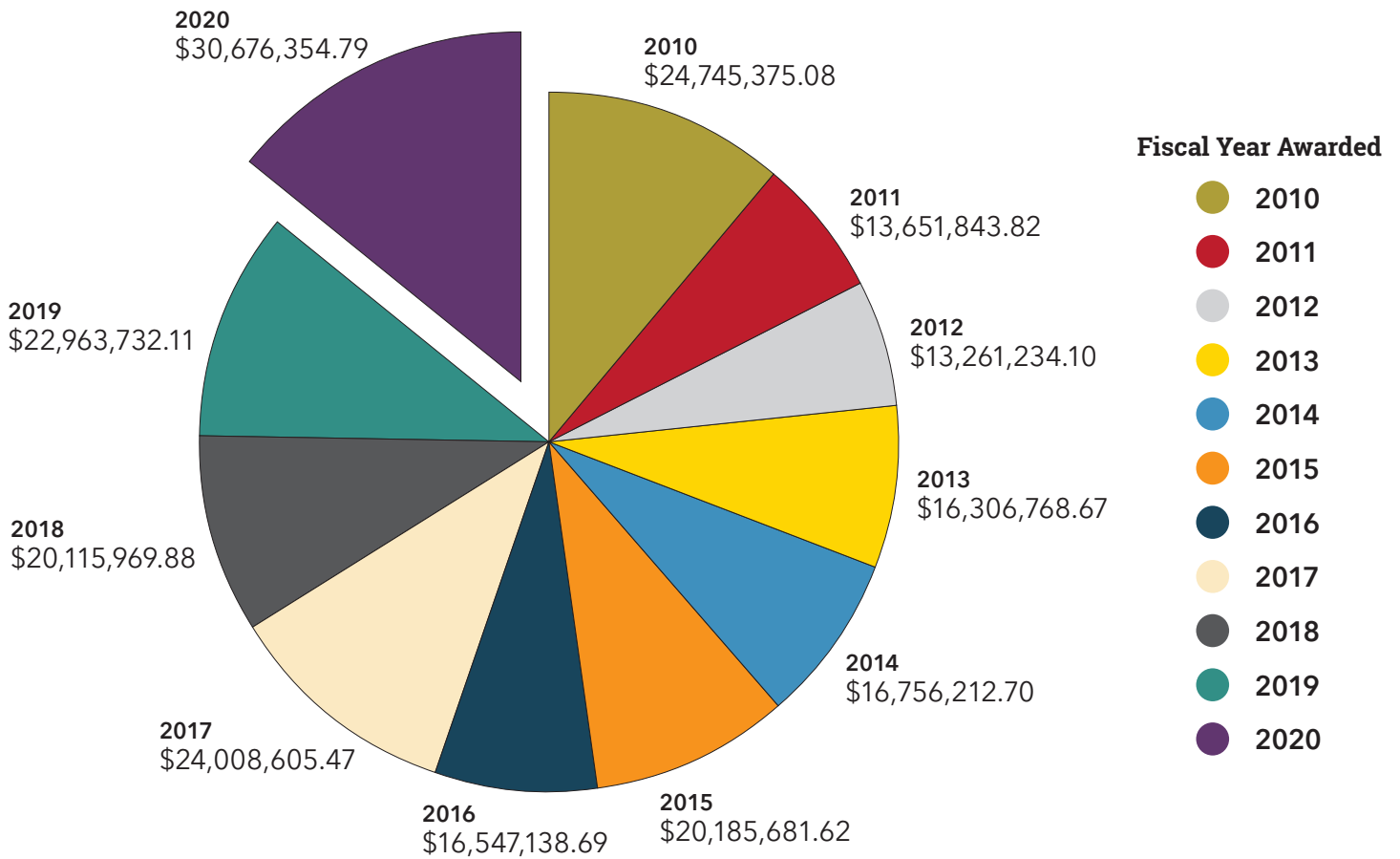


FIGURE 1
Annual Grant Awards

Fiscal Year	Grant Amount
2010	\$24,745,375.08
2011	\$13,651,843.82
2012	\$13,261,234.10
2013	\$16,306,768.67
2014	\$16,756,212.70
2015	\$20,185,681.62
2016	\$16,547,138.69
2017	\$24,008,605.47
2018	\$20,115,969.88
2019	\$22,963,732.11
2020	\$30,676,354.79
Grand Total	\$219,218,916.93

CHART 2

Breakdown of Federal and Non-Federal Awards

2010 - 2020 in millions

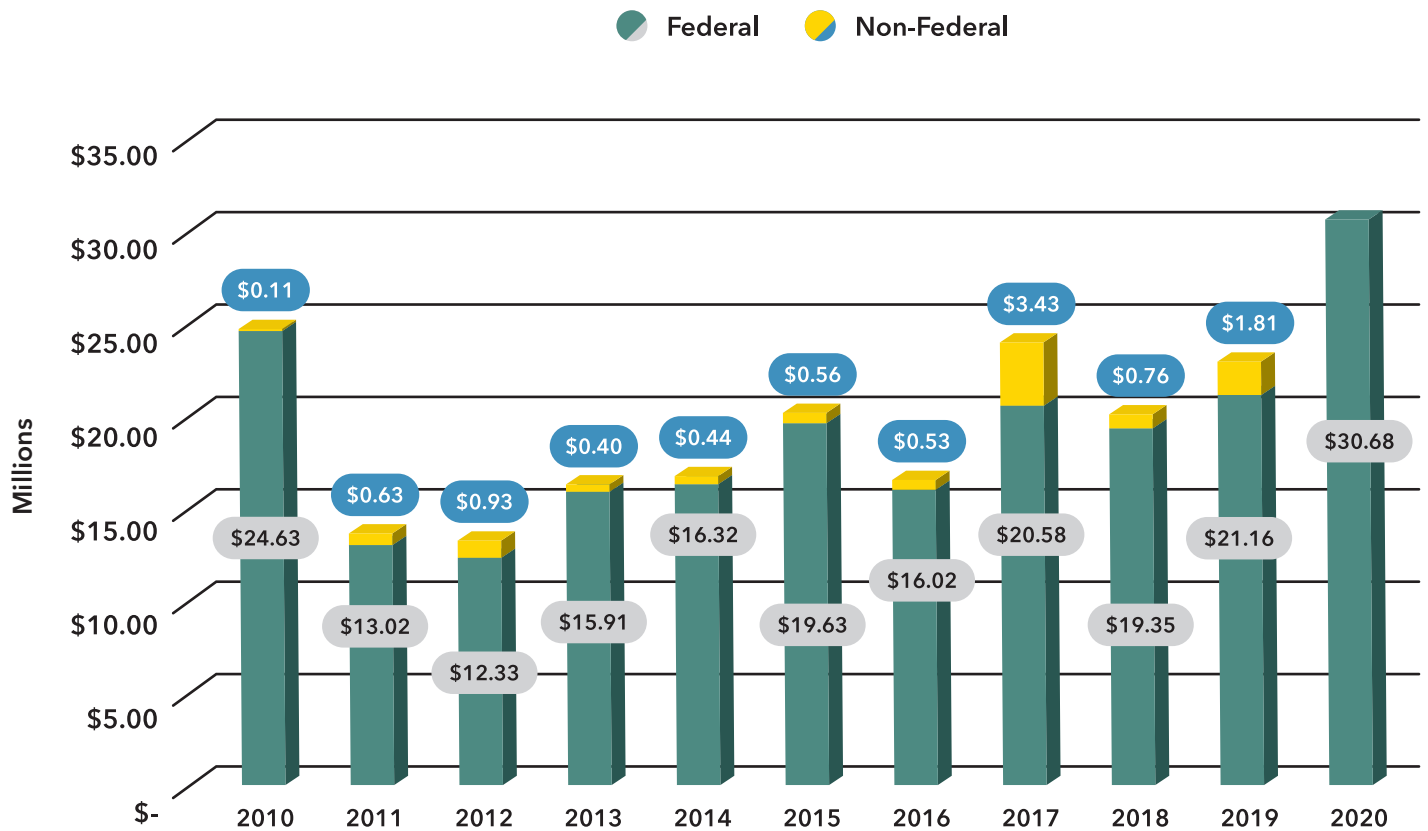


FIGURE 2

Breakdown of Federal and Non-Federal Awards

Fiscal Year	Federal	Non-Federal	Grand Total
2010	\$24,632,286.08	\$113,089.00	\$24,745,375.08
2011	\$13,018,609.82	\$633,234.00	\$13,651,843.82
2012	\$12,333,719.73	\$927,514.37	\$13,261,234.10
2013	\$15,906,650.18	\$400,118.49	\$16,306,768.67
2014	\$16,318,244.20	\$437,968.50	\$16,756,212.70
2015	\$19,627,303.94	\$558,377.68	\$20,185,681.62
2016	\$16,021,536.69	\$525,602.00	\$16,547,138.69
2017	\$20,583,157.47	\$3,425,448.00	\$24,008,605.47
2018	\$19,353,420.88	\$762,549.00	\$20,115,969.88
2019	\$21,156,400.80	\$1,807,331.31	\$22,963,732.11
2020	\$30,676,354.79	\$0.00	\$30,676,354.79
Grand Total	\$209,627,684.58	\$9,591,232.35	\$219,218,916.93

CHART 3

Breakdown of Federal and Non-Federal Awards

2010 - 2020

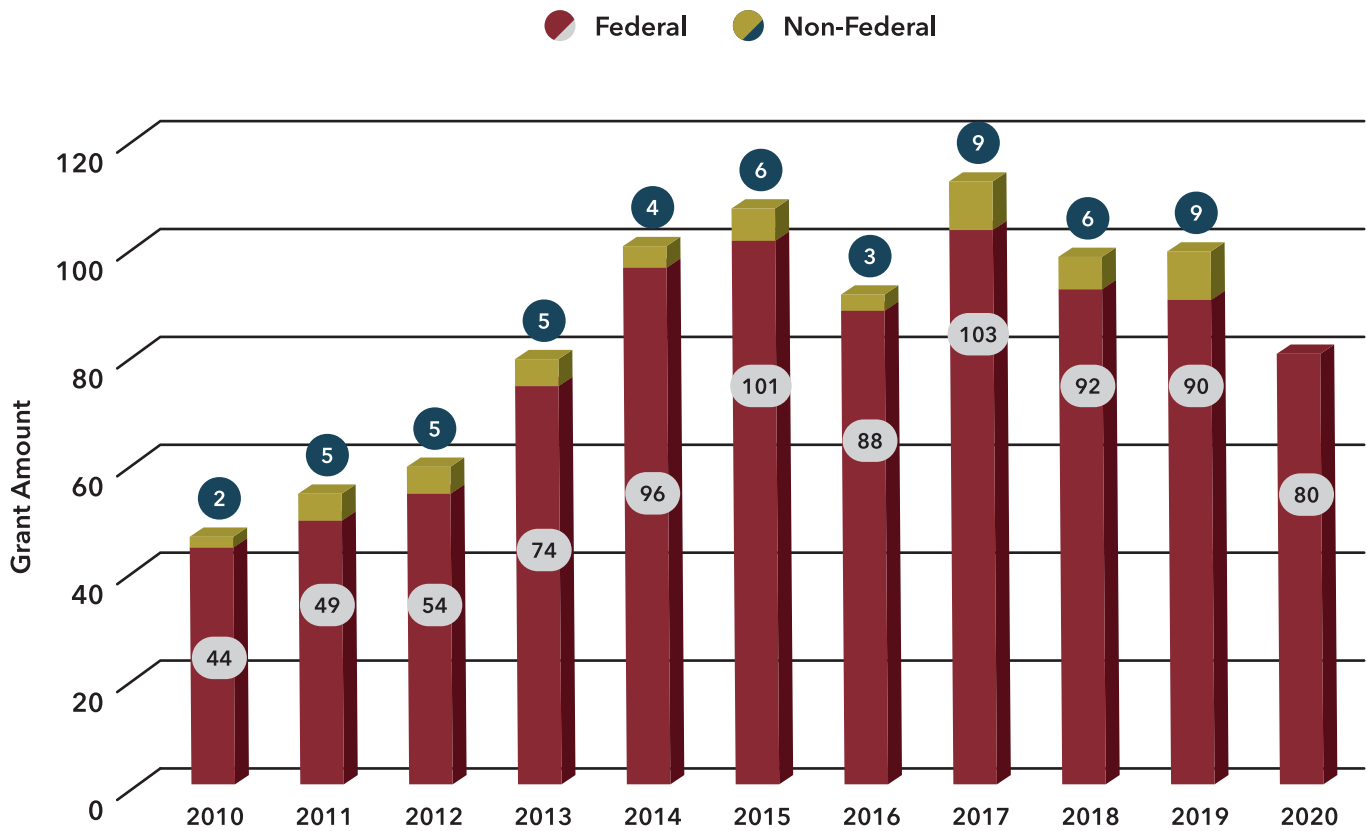


FIGURE 3

Grant Count Federal and Non-Federal Awards

2010 - 2020

Fiscal Year	Federal	Non-Federal	Grand Total
2010	44	2	46
2011	49	5	54
2012	54	5	59
2013	74	5	79
2014	96	4	100
2015	101	6	107
2016	88	3	91
2017	103	9	112
2018	92	6	98
2019	90	9	99
2020	80	0	80
Grand Total	871	54	925

CHART 4

Summary of Federal and Non-Federal Awards

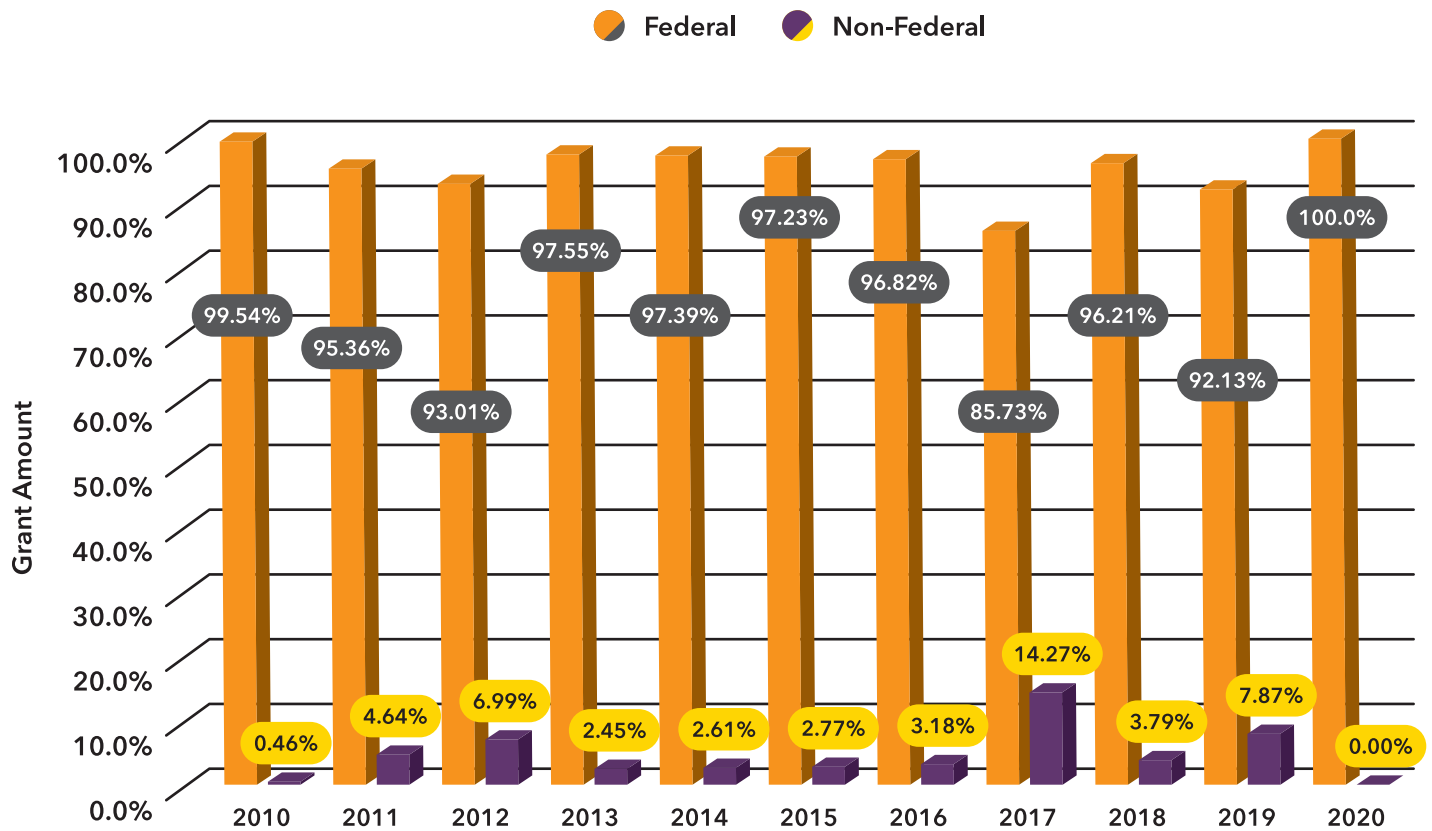


FIGURE 4

Percentage Summary of Federal and Non-Federal Awards

Fiscal Year	Federal	Non-Federal	Grand Total
2010	99.54%	0.46%	100.00%
2011	95.36%	4.64%	100.00%
2012	93.01%	6.99%	100.00%
2013	97.55%	2.45%	100.00%
2014	97.39%	2.61%	100.00%
2015	97.23%	2.77%	100.00%
2016	96.82%	3.18%	100.00%
2017	85.73%	14.27%	100.00%
2018	96.21%	3.79%	100.00%
2019	92.13%	7.87%	100.00%
2020	100.00%	0.00%	100.00%
Grand Total	95.62%	4.38%	100.00%

FIGURE 5

FY 2020 Top Principal Investigators in Award Dollars

(≥ \$100K)

Rank	Principal Investigator(s)	Grant Amount	PI's Unit	Award Sponsor	Title
1	Anita Enriquez	\$6,947,461.00	SVPP	USDOE	CARES Act Institutional Portion of the Higher Education Emergency Relief Fund
2	Anita Enriquez	\$4,564,698.00	SVPP	USDOE	CARES Act Higher Education Emergency Relief
3	Terry Donaldson (PI), Bastian Bentlage (Co-PI), Austin Shelton (Co-PI), Rachael Leon Guerrero (Co-PI)	\$4,140,321.00	ORSP	NSF	EPSCoR GECCO Y1
4	Rachael Leon Guerrero	\$1,532,165.00	ORSP	NIH/NCI	U54 PIPCHE Y1
5	Fred Granillo	\$1,280,000.00	SBPA	SBA	CARES Act SBDC
6	Laurie Raymundo	\$848,871.94	MARI	NFWF	Staghom
7	Veronica Alave, Margaret Hattori-Uchima	\$754,499.00	SOH	DHHS/ HRSA-BHW	Geriatrics Workforce Enhancement Program Y2
8	Denise Mendiola	\$750,000.00	SBPA	SBA	SBDC
9	Shane Siers	\$740,987.00	RCUOG	USGS	Rapid Response BTS
10	Charlene Bitlaol	\$630,000.00	EMSS	CNCS/ SGC (PT)	AMERICORPS (Corporation for National and Community Service-US Federal Agency)
11	Heidi San Nicolas	\$571,732.00	CEDDERS	DHHS/ACL	CORE GRANT-University Center for Excellence in Developmental Disabilities (UCEDD)
12	Heidi San Nicolas	\$570,000.00	CEDDERS	DHHS/ACL	CORE GRANT-University Center for Excellence in Developmental Disabilities (UCEDD)
13	Margaret Hattori-Uchima	\$526,159.00	SOH	NIH/NIMHD	U24 PICCAH Y5
14	Austin Shelton	\$506,014.00	ORSP	NOAA	Sea Grant
15	Rowena Andrade	\$478,486.00	EMSS	USDOE	Upward BoundMain 20-21
16	Lovelynn Mongami	\$409,407.00	EMSS	USDOE	Talent Search 20-21-Educational Talent Search
17	Annette Santos, Boris Hertslet	\$389,265.00	SBPA	DOD/DLA	PTAC
18	Anita Enriquez, Lawrence Camacho	\$360,511.00	SVPP	USDOE	PARAHULO
19	Chrislynn Takawo	\$335,111.00	EMSS	USDOE	Student Support 20-21Services
20	Michael Carson	\$334,260.00	MARC	DOI	TAP

Rank	Principal Investigator(s)	Grant Amount	PI's Unit	Award Sponsor	Title
21	Adrian Ares	\$299,277.00	CNAS	USDA	New Farmer
22	Brett Taylor	\$279,786.00	MARI	DOC/NOAA	Fisheries/Dev/UTIL- Fisheries Development and Utilization
23	Heidi San Nicolas	\$250,189.00	CEDDERS	DHHS/HRSA	EAR-HEAR
24	Aubrey Moore	\$239,994.00	CNAS	DOI	Biocontrol of CRB
25	Margaret Hattori-Uchima	\$233,523.00	SOH	NIH-PSU (PT)	EXITO (BUILD) Research, Admin Core, Inst Core Y2
26	Austin Shelton	\$178,013.00	ORSP/CESU	DOD/DON/ CESU	Sea Turtle Survey FDM
27	James McConnell	\$171,933.00	ORSP/CESU	DOD/DON/ CESU	SN Monitoring AFB
28	Andrea Blas	\$170,963.00	CNAS	USDA/NIFA	Capacity Improvement
29	Romina King	\$150,000.00	MARC	UH (PT)	Space Grant
30	George Fiedler	\$150,000.00	ORSP/CESU	DOD/DON/ CESU	Butterfly & Snail Monitoring
31	James McConnell	\$150,000.00	ORSP/CESU	DOD/DON/ CESU	Invasive Monitoring- Invasive Plant Control within JRM AOR
32	Leslie Aquino	\$148,799.00	ORSP	NASA	NASA RID Y2
33	Sarah Lemer	\$118,788.94	MARI	NFWF	Developing Genetics Toolkit
34	Mohammad Golabi	\$104,406.00	CNAS/ WPTRC	USDA-UH (PT)	Forecasting Daily Ref. Evatranspiration and Rainfall for Water

CHART 5

FY 2020 Grant Awards by College/Department

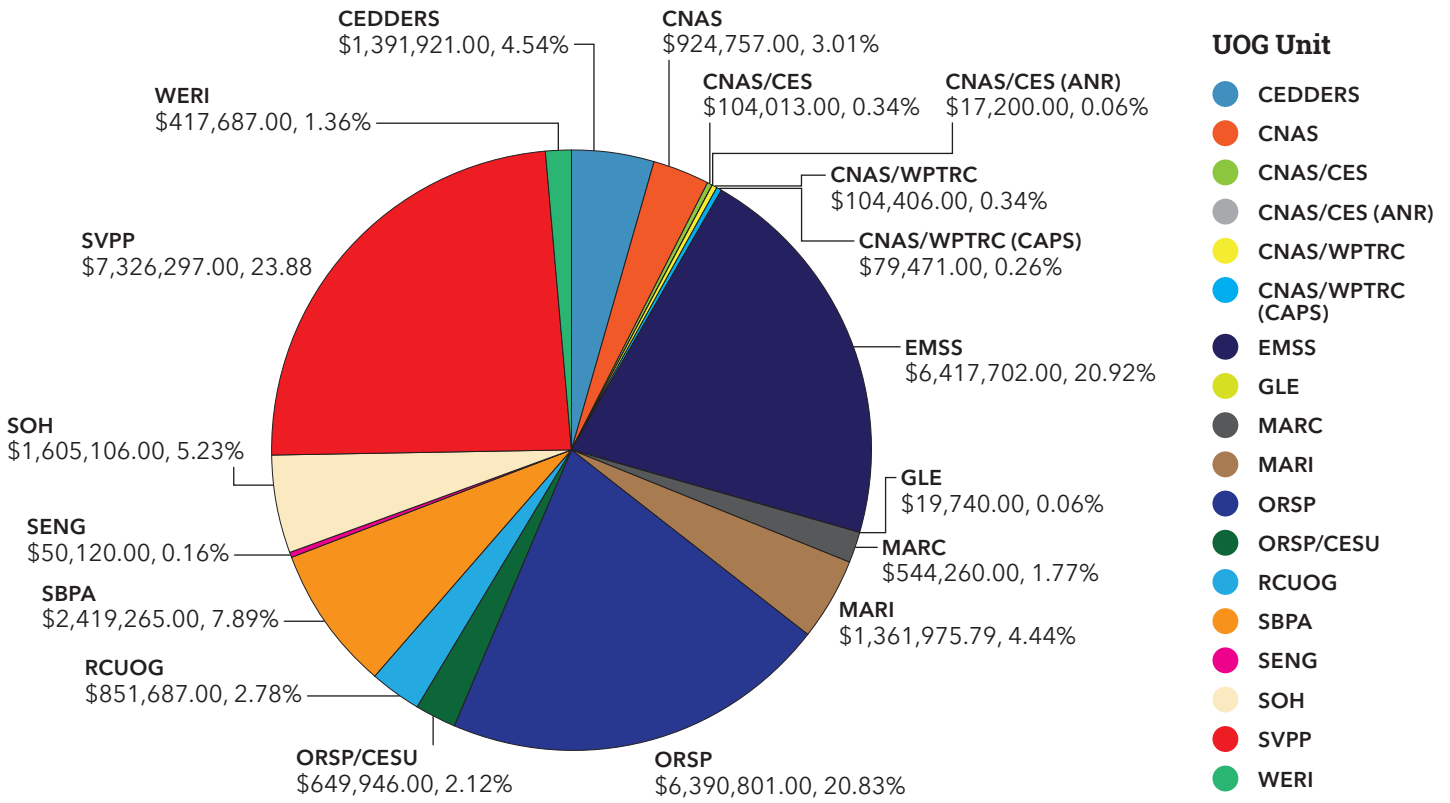


FIGURE 6

FY 2020 Grant Award and Percentage Contract by College/Department

College/Department	Sum of Grant Amount	Percentage
CEDDERS	\$1,391,921.00	4.54%
CNAS	\$924,757.00	3.01%
CNAS/CES	\$104,013.00	0.34%
CNAS/CES (ANR)	\$17,200.00	0.06%
CNAS/WPTRC	\$104,406.00	0.34%
CNAS/WPTRC (CAPS)	\$79,471.00	0.26%
EMSS	\$6,417,702.00	20.92%
GLE	\$19,740.00	0.06%
MARC	\$544,260.00	1.77%
MARI	\$1,361,975.79	4.44%
ORSP	\$6,390,801.00	20.83%
ORSP/CESU	\$649,946.00	2.12%
RCUOG	\$851,687.00	2.78%
SBPA	\$2,419,265.00	7.89%
SENG	\$50,120.00	0.16%
SOH	\$1,605,106.00	5.23%
SVPP	\$7,326,297.00	23.88%
WERI	\$417,687.00	1.36%
Grand Total	\$30,676,354.79	100.00%

FIGURE 7

FY 2020 Summary of Federal CARES Act Awards

Funded By	Unit	Amount
U.S. DOE	SVPP	\$6,947,461.00
U.S. DOE	EMSS	\$4,564,698.00
U.S. SBA	SBPA/SBDC	\$1,280,000.00
U.S. DOE	SVPP	\$360,511.00
U.S. DOE	SVPP	\$18,325.00
	Grand Total	\$13,170,995.00

FIGURE 8

Contract and Grant Awards Summary by Sponsor

2010 - 2020

Sponsor	Count of GRANT AMOUNT	Sum of GRANT AMOUNT
(PT)	2	\$28,897.00
AECOM Tech Svc	2	\$169,018.80
American Cancer Society	1	\$14,088.00
Black Construction Corp	1	\$25,500.00
BSP	1	\$41,900.00
BSP (PT)	5	\$905,513.00
CHLA (PT)	1	\$30,000.00
CIS	1	\$377,956.00
CNCS/SGC (PT)	4	\$1,853,990.00
CNMI PSS	3	\$647,480.00
DD/OEA	1	\$405,166.00
DE-GEO	1	\$460,762.00
DE-GEPA	1	\$1,500,000.00
DHHS	9	\$2,361,017.00
DHHS/ACL	20	\$5,896,781.71
DHHS/CDC/AUCD	1	\$8,000.00
DHHS/CDC-AMCHP (PT)	3	\$30,000.00
DHHS/HRSA	27	\$9,765,367.96
DHHS/HRSA/EHDI	10	\$1,462,529.00
DHHS/HRSA-BHW	3	\$5,252,788.00
DHHS/MCH (PT)	2	\$126,336.25
DHHS-DPHSS (PT)	25	\$3,247,738.40
DHHS-UH (PT)	2	\$173,441.00
DHSS-DPHSS (PT)	4	\$197,014.00
DOAg (PT)	1	\$242,726.00
DOC	1	\$16,201.00
DOC/EDA	1	\$150,000.00

Sponsor	Count of GRANT AMOUNT	Sum of GRANT AMOUNT
DOC/NOAA	13	\$1,845,863.00
DOC/NOAA-BSP (PT)	3	\$990,458.68
DOC/NOAA-UH (PT)	1	\$50,000.00
DOD/DLA	11	\$3,319,427.00
DOD/DON	1	\$267,265.97
DOD/DON/CESU	43	\$13,066,733.69
DOD/ONR	2	\$465,000.00
DOD/USACE/CESU (Alaska)	1	\$743,867.00
DOI	17	\$7,149,801.00
DOI/BSP (PT)	2	\$121,670.00
DOI/FWS	2	\$98,232.00
DOI/NPS	10	\$575,385.59
DOI/OIA	2	\$348,671.00
DOI/USFWS	1	\$40,000.00
DOI/USGS	88	\$2,051,078.00
DOI/USGS-UH (PT)	2	\$212,000.00
DOI-BSP (PT)	11	\$614,236.00
DOI-COD (PT)	2	\$290,000.00
DOI-DOAg (PT)	1	\$21,212.00
DOI-UH (PT)	1	\$72,000.00
DOJ/OVW	1	\$300,000.00
DON	1	\$209,804.00
DPHHS	1	\$289,981.00
Duenas & Associate	1	\$65,018.00
EPA	1	\$278,784.00
FEMA	1	\$419,025.00
FHCRC	1	\$8,000.00
Ford Motor Company	1	\$15,000.00
FSM National DOE	5	\$461,916.37
GCC	2	\$197,555.50
GDOE (PT)	3	\$391,461.40
GovGuam	1	\$2,781,109.00
GovGuam/DPHSS	1	\$272,602.00
GovGuam/GADTC	3	\$582,510.00
GovGuam/GEPA	4	\$283,996.00
GovGuam/GVB	1	\$5,000.00
GovGuam/GWA	3	\$324,993.00
GG-DPHSS (PT)	1	\$272,602.00
Granite Obayashi JV	1	\$103,282.00
Granite-Obayashi Construction	1	\$57,696.00
Harvard	1	\$314.68
IMLS	1	\$97,792.00
MAA	1	\$3,400.00
McRel Pacific	1	\$593,863.00
MCT (PT)	2	\$100,556.06
NARA	1	\$142,078.00
NASA	6	\$1,422,975.89

Sponsor	Count of GRANT AMOUNT	Sum of GRANT AMOUNT
NASA-UH (PT)	1	\$249,999.25
NFWF	6	\$1,189,041.32
NIH/CDC-UH (PT)	2	\$177,237.00
NIH/DHHS	6	\$6,737,569.93
NIH/NIMHD	5	\$2,795,683.00
NIH-PSU (PT)	8	\$2,127,299.00
NIH-UH	6	\$6,021,728.00
NIH-UH (PT)	2	\$32,256.00
NIH-URI (PT)	1	\$25,903.00
NLG/IMLS	2	\$250,679.25
NOAA	20	\$3,771,428.00
NOAA/BSP (PT)	1	\$11,000.00
NOAA/CRCP	1	\$71,216.00
NOAA/DOC	2	\$135,069.00
NOAA/NFWF	1	\$69,769.00
NOAA-BSP (PT)	18	\$1,089,920.00
NOAA-GVB (PT)	1	\$50,000.00
NOAA-MCT (PT)	5	\$402,715.00
NOAA-RCUH (PT)	2	\$114,822.00
NOAA-TNC (PT)	1	\$58,306.00
NOAA-UH (PT)	1	\$140,000.00
NPS	4	\$183,063.91
NSF	14	\$12,639,351.00
NSF/BCS	1	\$274,312.00
NSF/RIG	1	\$194,134.00
NSF/UH (PT)	3	\$364,497.00
NSF-AU (PT)	1	\$39,000.00
NSF-MAA (PT)	2	\$56,209.00
NSF-UH (PT)	3	\$136,140.00
NSF-UNH (PT)	1	\$43,446.00
ORSP/GCTF	1	\$32,130.00
PIHOA	1	\$24,570.00
PIMI	2	\$1,466,252.00
PW Ministry of Ed, Sp Ed	8	\$895,774.00
RCUH (PT)	1	\$8,342.35
SBA	56	\$7,028,459.00
SCS	1	\$25,260.00
Sundance	2	\$72,543.00
Tides Center	1	\$4,000.00
TNC	1	\$33,773.76
UH (PT)	6	\$506,753.00
UH Sea Grant	1	\$40,000.00
University of Otago (New Zealand)	1	\$22,645.00
UOG Endow Found	1	\$10,000.00
USCB/BSP	1	\$188,500.00
USDA	19	\$2,197,989.80

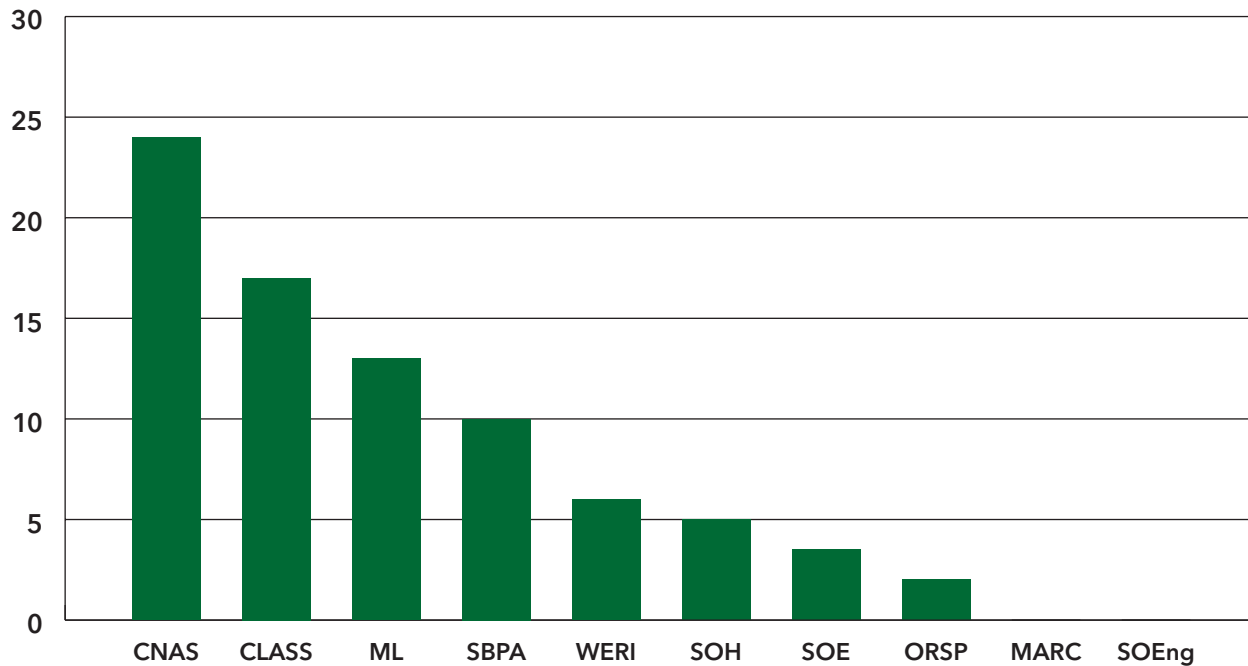
Sponsor	Count of GRANT AMOUNT	Sum of GRANT AMOUNT
USDA (PT)	3	\$303,588.07
USDA/AMS-BBMR-DOAg (PT)	1	\$203,840.63
USDA/AMS-GDOAg (PT)	1	\$210,938.97
USDA/APHIS	26	\$1,563,892.00
USDA/APHIS	3	\$475,000.00
USDA/APHIS/PPQ	26	\$667,921.00
USDA/APHIS/PPQ	6	\$127,810.00
USDA/APHIS-DOAg (PT)	1	\$58,062.00
USDA/CTSA	1	\$12,800.00
USDA/DOAg (PT)	2	\$386,408.42
USDA/DPHSS (PT)	6	\$1,035,592.00
USDA/FS	13	\$1,483,403.74
USDA/LSR-GDOAg/FSRD (PT)	3	\$442,780.00
USDA/NASS	1	\$25,000.00
USDA/NIFA	67	\$27,361,869.50
USDA/NIFA-MSU (PT)	3	\$401,536.00
USDA/NIFA-UCDavis (PT)	1	\$35,954.00
USDA/NIFA-UH (PT)	1	\$258,944.00
USDA/NIFA-USU (PT)	3	\$122,817.00
USDA/NRCS	3	\$331,961.00
USDA/OIA	1	\$63,816.00
USDA/RBEG	1	\$50,000.00
USDA/USFS	2	\$224,095.00
USDA/USU (PT)	4	\$161,446.70
USDA-CSU (PT)	1	\$5,000.00
USDA-DOAg	2	\$312,665.95
USDA-DOAg (PT)	3	\$267,231.66
USDA-DPHSS (PT)	2	\$110,660.00
USDA-FS	1	\$105,847.00
USDA-Idaho (PT)	1	\$30,000.00
USDA-KSU (PT)	6	\$135,232.00
USDA-MCT (PT)	1	\$62,000.00
USDA-NMC (PT)	1	\$6,500.00
USDA-UCDavis (PT)	2	\$45,807.00
USDA-UH (PT)	7	\$2,795,486.00
USDA-UOPR (PT)	2	\$255,500.00
USDA-UOVI (PT)	2	\$167,001.00
USDA-UW (PT)	3	\$56,001.00
USDA-WSU (PT)	1	\$44,999.00
USDE-GDOE (PT)	3	\$494,385.06
USDE-UCORP (PT)	1	\$25,911.00
USDOC/EDA	1	\$190,000.00
USDOE	49	\$41,872,964.00
USDOE/GDOE (PT)	10	\$2,107,747.00
USDOE-GDOE (PT)	8	\$1,771,128.64
USDOE-San Jose State University (PT)	2	\$100,600.00

Sponsor	Count of GRANT AMOUNT	Sum of GRANT AMOUNT
USDOE-WestEd (PT)	1	\$55,000.00
USDOS	1	\$19,740.00
USEPA (PT)	2	\$35,950.00
USFW	3	\$388,731.00
USFWS	1	\$12,000.00
USGS	3	\$897,524.00
USGS	1	\$17,752.68
USGS-BSP (PT)	1	\$38,000.00
USGS-GWA (PT)	1	\$531,300.00
USGS-RCUH (PT)	1	\$249,016.00
USGS-UH (PT)	4	\$851,150.39
Grand Total	925	\$219,218,916.93

CHART 6

UOG Research and Scholarly Publications for 2020

PUBLICATIONS BY COLLEGE/UNIT



2020 Publications

Acosta-Alonzo, C.B., Erovenko, IV., Lancaster, A., **Oh, H.**, Rychtář, J., & Taylor, D. 2020 High endemic levels of typhoid fever in rural areas of Ghana may stem from optimal voluntary vaccination behaviour. *Proc. R. Soc. A* 476: 20200354. <http://dx.doi.org/10.1098/rspa.2020.0354>

Aflague, T.F., Leon Guerrero, R.T., Delormier T., Novotny, R., Wilkens, L.R., & Boushey, C.J. Examining the Influence of Cultural Immersion on Willingness to Try Fruits and Vegetables Among Children on Guam: the *Traditions* Pilot Study. *Nutrients*. 2020:12(18). doi:10.3390/nu12010018

Afzali, S.F., Azad, B., **Golabi, M.H.**, & Francaviglia, R. 2019. Using RothC model to simulate soil organic carbon stocks under different climate change scenarios for the rangelands of the arid regions of southern Iran. *Water* 2019, 11:10.

Allard, B., Lo, P., Liu, Q., **Ho, K.K.W.**, Chiu, D.K.W., Chen, J.C.C., Zhou, Q., & Jiang, T. (2020). LIS pre-professionals' perspectives towards library user education: A comparative study between three universities in Greater China. *Journal of Librarianship and Information Science*, 52(3), 832-852.

Aquino, L., & Oh, H. Successful Launching Undergraduate Research in Mathematics at University of Guam. *Micronesian Educator* #28, FAÑOMNĀKAN 2020, A Journal of Research, Theory, and Practice in Guam and Micronesia

Atienza, D., & Coello de la Rosa, A. *The Scars of Faith: Letters and Documents of the Mariana Islands' Jesuit Missionaries and Martyrs*. Institute for Advanced Jesuit Studies - Boston College, 2020.

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