

2023 Annual Report Extramural Awards & Expenditures

For the period of July 1, 2022 through June 30, 2023

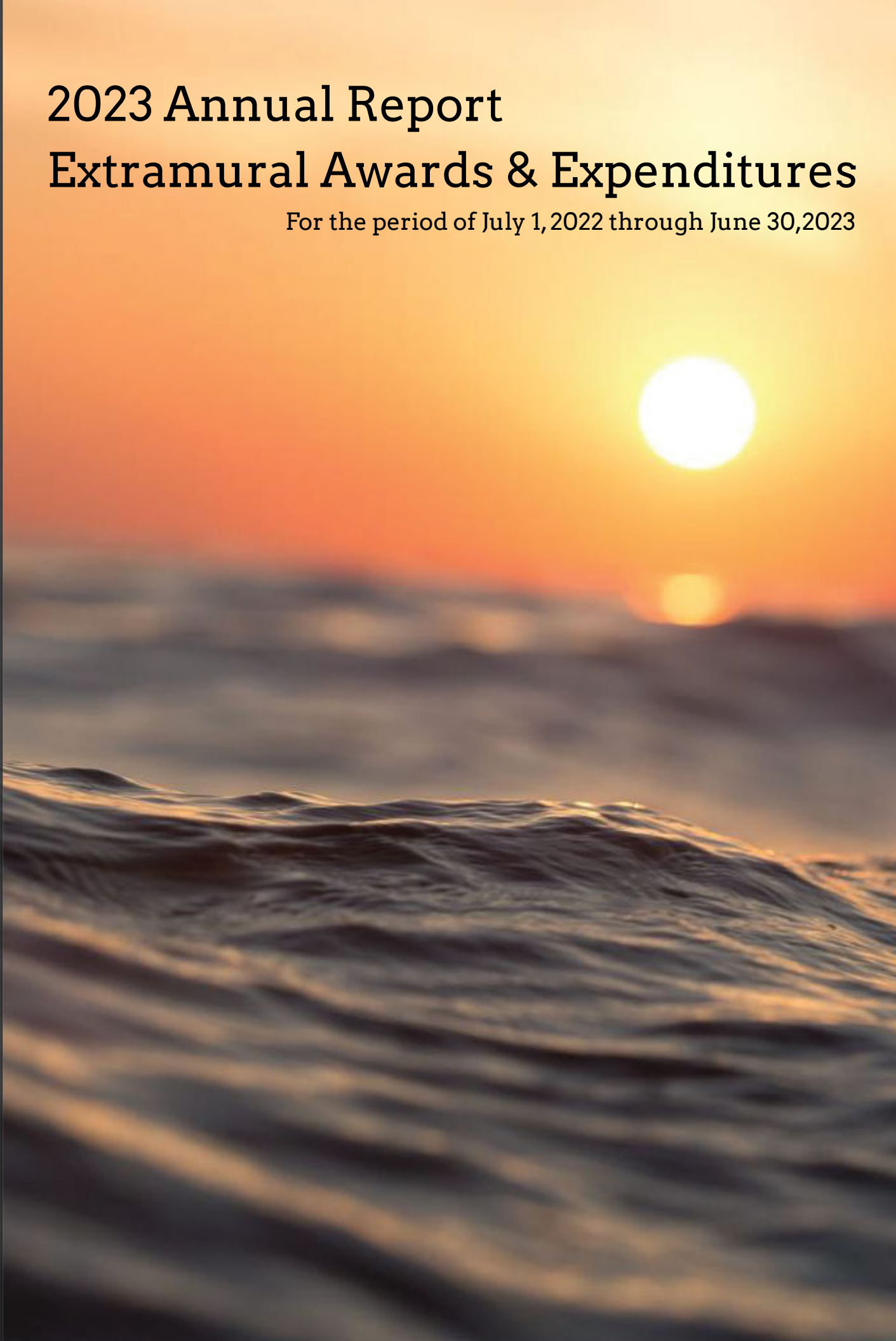


Table of Contents

Letter from Vice President for Research and Innovation Vassilis L. Syrmos	i
<u>Proposals and Awards</u>	
Chart 1: Awards by Sponsor	1
Figure 1: Contract and Grant Awards Summary by Sponsor Type.....	2
Chart 2: Breakdown of Federal and Non-Federal Awards – Five Year Comparison	3
Figure 2: Summary of Federal and Non-Federal Awards – Five Year Comparison	3
Chart 3a: Non-Federal Awards by Fiscal Year – Five Year Comparison	4
Chart 3b: Federal Awards by Fiscal Year – Five Year Comparison	5
Figure 3: Total Contract and Grant Awards Received – Five Year Comparison	6
Chart 4: Total Federal CARES Act Awards by Campus	7
Figure 4: Summary of Federal CARES Act Awards	8
Chart 5: Number of Proposals Submitted – Prior Year Comparison.....	9
Chart 6: Total Dollar Amount of Proposals Submitted – Prior Year Comparison	10
Figure 5: Proposal Summary by Source of Funding – Prior Year Comparison	11
Chart 7: Total Contract and Grant Awards – Twelve Year Comparison.....	12
Figure 6: Total Contact and Grant Awards Summary – Twelve Year Comparison.....	12
Figure 7: Top Individual Awards.....	13
Figure 8: Top Fifty Principal Investigators in Award Dollars	14
Chart 8: Contract and Grant Awards by Campus	15
Chart 9: UH Mānoa – Contract and Grant Awards by College/Department.....	16
Chart 10: UH Hilo – Contract and Grant Awards by College/Department.....	17
Figure 9: Contract and Grant Awards Summary by Campus	18
Figure 10a: UH Mānoa – Contract and Grant Awards Summary by College/Department	19
Figure 10b: UH Hilo – Contract and Grant Awards Summary by College/Department	23
<u>Expenditures</u>	
Chart 11: Total Contract and Grant Expenditures by Source of Funds – Prior Year Comparison.....	24
Figure 11: Total Contract and Grant Expenditures by Source of Funds – Prior Year Comparison	25
Figure 11a: COVID-19 Related Award Expenditures by Source of Funds	26
Chart 12: Total Federal CARES Act Expenditures by Campus	27
Figure 12: Summary of Federal CARES Act Expenditures	28
Chart 13: Total Contract and Grant Expenditures by Program Type and Source of Funds	29
Figure 13: Total Contract and Grant Expenditures by Program Type and Source of Funds	30
Chart 14: Total FTE Paid from Contract and Grant Funds.....	31
Figure 14: Total FTE Paid from Contract and Grant Funds	32
Chart 15: Breakdown of Facilities and Administrative Costs by Major Category – FY 2016 Base Year	33
Chart 16: Total Royalties Received from University Patents – Five Year Comparison	34
Figure 15: Total Royalties Received from University Patents – Five Year Comparison	34
Appendix 1: Extramural Award Sponsors	35

Dear Colleagues:

While the global effects of climate change vary, for an island state like ours, the effects are magnified not only on our receding shorelines, but in our precious natural and ocean habitats, vital fresh water resources and important agrosystems. Our geographic isolation presents us with additional challenges in rural health equity, as well as the development of sustainable energy sources. Buoyed by the weaving of indigenous innovation and knowledge with contemporary science, University of Hawai'i (UH) researchers are now viewing their work through a uniquely different lens that will help them to develop climate adaptation solutions and healthy communities not only in Hawai'i, but around the world.

I am extremely pleased to report that for the second consecutive year, UH has topped a half a billion dollars in extramural funding and in the process, established a new record total of \$515.9 million to close fiscal year 2023 (FY2023). This year's record-setting number represents a \$10.9 million or 2.16 percent increase over UH's previous record of \$505.0 million set in FY2022.

Credit for our back-to-back record achievement must be given to our faculty, staff and graduate students for their hard work and dedication to the UH research enterprise and the state of Hawai'i despite facing a myriad of challenges due to the recent pandemic and its lingering after-effects on the world economy and our funders.

Our flagship University of Hawai'i at Mānoa campus led the extramural award amounts this year with \$342.7 million. The UH System brought in \$117.7 million, UH Community Colleges totaled \$33.7 million, the University of Hawai'i at Hilo received \$17.8 million and the University of Hawai'i at West O'ahu totaled \$4.0 million. Here are a few examples of UH programs that attracted the attention of funders:

- The John A. Burns School of Medicine was awarded \$4.5 million as part of a five-year \$23 million grant from the National Institutes for Health (NIH) for Ola HAWAII, a multidisciplinary research center that addresses health disparities in the underserved, multiethnic populations in Hawai'i.
- UH's Established Program to Stimulate Competitive Research received \$4.0 million as part of a five-year \$20 million grant by the National Science Foundation (NSF) to integrate climate and data science research under its "Change HI" initiative.
- The Hawai'i Natural Energy Institute received \$3.6 million from the Office of Naval Research (ONR) to continue its research and maintenance support of the U.S. Navy's Wave Energy Test Site in Kāne'ohe Bay.
- UH Mānoa's School of Ocean and Earth Science and Technology (SOEST) was awarded \$3.0 million by ONR to map flood risks related to sea level rise in Hawai'i.
- ONR awarded UH a \$2.4 million grant to partner with the University of Alaska and the University of Rhode Island to develop and advance energy, marine and other blue economy technologies and opportunities.
- NIH awarded \$2.4 million to the UH Cancer Center to continue its important Multiethnic Cohort Study.
- Windward Community College was awarded \$2.0 million of a \$3.5 million grant by NSF's Tribal Colleges and Universities Program to establish its Kia'i Loko Center for Limu Research.

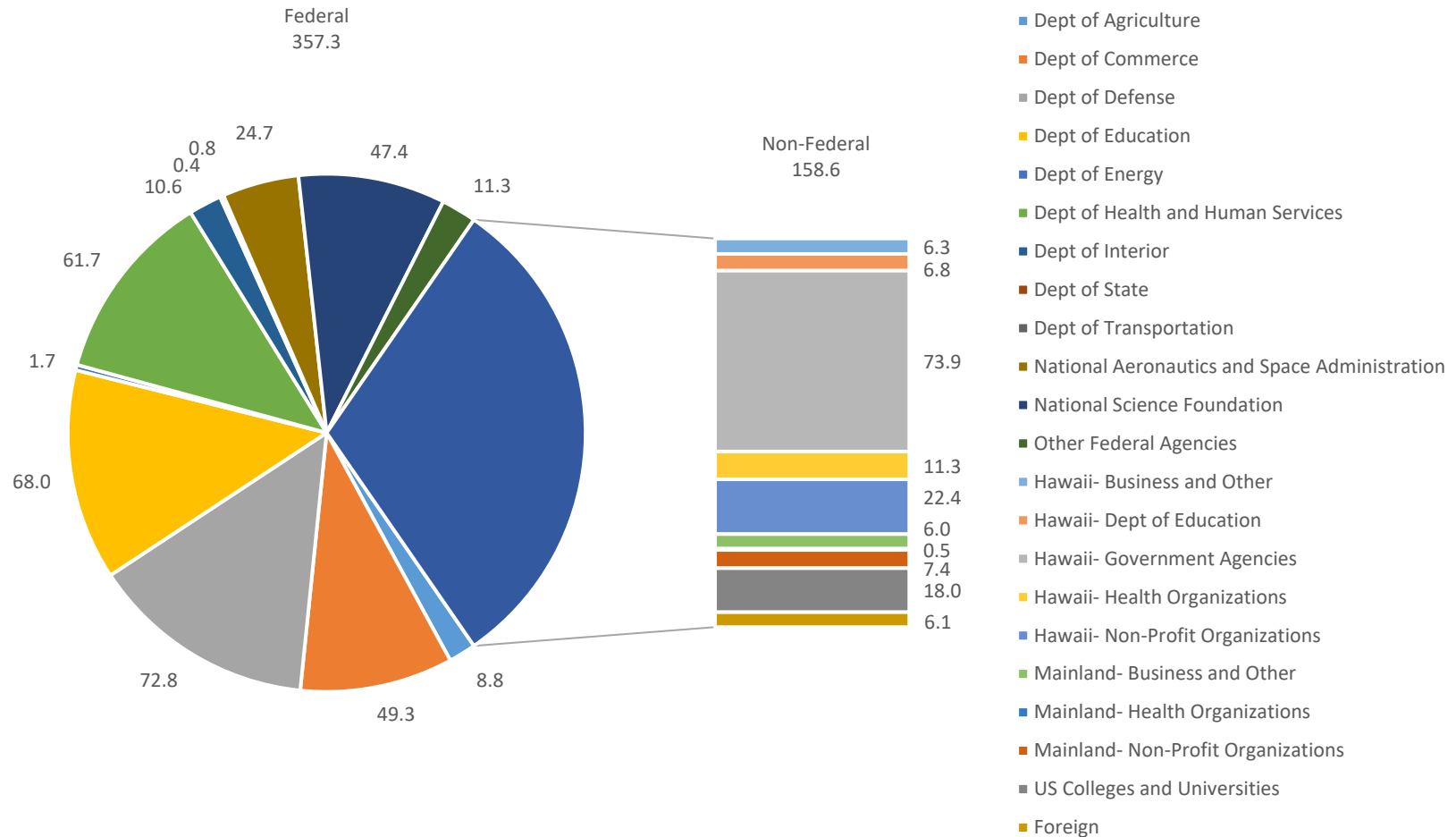
- The Defense Advanced Research Projects Agency awarded SOEST and the UH Applied Research Laboratory another \$1.5 million increment of a five-year, \$25 million project to develop an engineered coral reef system to protect coastlines from flooding, erosion and storm damage.
- The UH Center for Indigenous Innovation and Health Equity received \$1.5 million from the U.S. Department of Health and Human Services to restore ancestral and cultural practices to improve health equity among Native Hawaiians and NHPI communities.
- UH Hilo received \$1.1 million from the U.S. Department of Education for its *E Hoi I Ke Kumu* program to address the Hawaiian language immersion teacher shortage in the state.
- UH was awarded a \$1.0 million NSF Engines Development Award to establish its Climate-Resilient Food Innovation Network that will serve as a hub for Hawai'i and U.S.-affiliated Pacific Islands to develop collaborative, food innovation solutions driven by indigenous knowledge systems and modern technology.
- UH West O'ahu received a \$944,307 grant from the U.S. Department of Education to develop its *He Paepae Aloha* curriculum to increase Native Hawaiian participation and completion of post-secondary education through the incorporation of Native Hawaiian traditions and culture.

As indicated by the wide range of projects above, the University of Hawai'i will continue to be a driver of research, innovation, knowledge and economic development both globally, and most importantly, locally. Thank you for your steadfast belief and continued efforts in making the UH research enterprise a large part of your DNA.

Sincerely,

Vassilis L. Syrmos
Vice President for Research and Innovation

Chart 1: Awards by Sponsor
(in millions)



Institutional Awards received from Federal COVID-19 Higher Education Emergency Relief Funding (HEERF) acts and related expenditures are reported separately from extramural awards and extramural expenditures in this report. The HEERF award totals can be found in Chart 4: Total Federal CARES Act Awards by Campus and Figure 4: Summary of Federal CARES Act Awards; HEERF expenditures are presented in Chart 12: Total Federal CARES Act Expenditures by Campus and Figure 12: Summary of Federal CARES Act Expenditures.

Figure 1: Contract and Grant Awards Summary by Sponsor Type

Sponsor Type	Amount Awarded	Award Count
Dept of Agriculture	\$8,797,467	54
Dept of Commerce	\$49,294,416	85
Dept of Defense	\$72,776,466	80
Dept of Education	\$67,980,089	119
Dept of Energy	\$1,729,371	5
Dept of Health and Human Services	\$61,662,747	89
Dept of Interior	\$10,605,453	50
Dept of State	\$750,000	1
Dept of Transportation	\$400,000	2
National Aeronautics and Space Administration	\$24,667,739	66
National Science Foundation	\$47,358,315	77
Other Federal Agencies	\$11,316,185	26
Hawai'i- Business and Other	\$6,298,129	45
Hawai'i- Dept of Education	\$6,762,030	22
Hawai'i- Government Agencies	\$73,929,901	286
Hawai'i- Health Organizations	\$11,349,460	29
Hawai'i- Non-Profit Organizations	\$22,375,832	237
Mainland- Business and Other	\$5,982,237	75
Mainland- Health Organizations	\$455,713	8
Mainland- Non-Profit Organizations	\$7,405,913	57
US Colleges and Universities	\$17,961,715	161
Foreign	\$6,056,392	41
Grand Total	\$515,915,570	1,615

**Chart 2: Breakdown of Federal and Non-Federal Awards
Five Year Comparison**

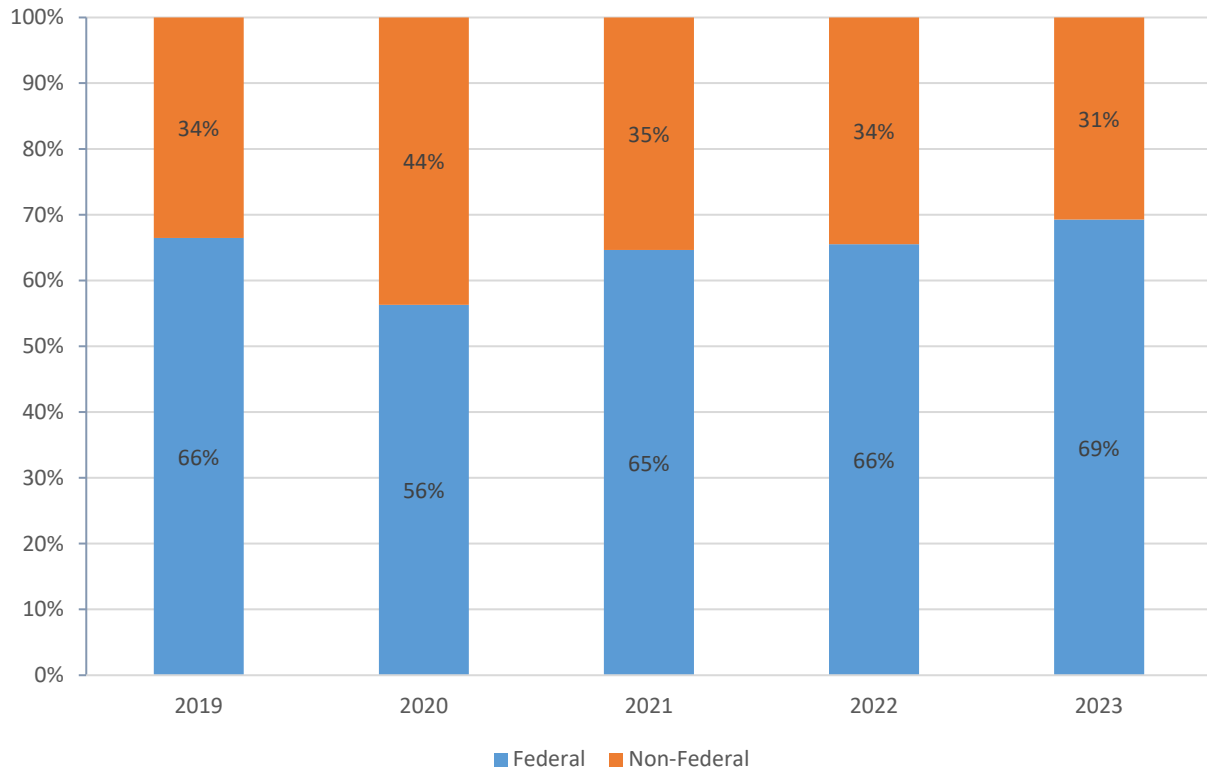


Figure 2: Summary of Federal and Non-Federal Awards

Source of Funding	FY 2019 Amount Awarded	FY 2020 Amount Awarded	FY 2021 Amount Awarded	FY 2022 Amount Awarded	FY 2023 Amount Awarded
Federal	\$280,412,092	\$253,555,515	\$313,871,669	\$330,850,480	\$357,338,248
Non-Federal	\$141,440,068	\$196,883,734	\$171,657,257	\$174,168,654	\$158,577,322
Total	\$421,852,160	\$450,439,249	\$485,528,926	\$505,019,134	\$515,915,570

Chart 3a: Non-Federal Awards by Fiscal Year
Five Year Comparison
(in millions)

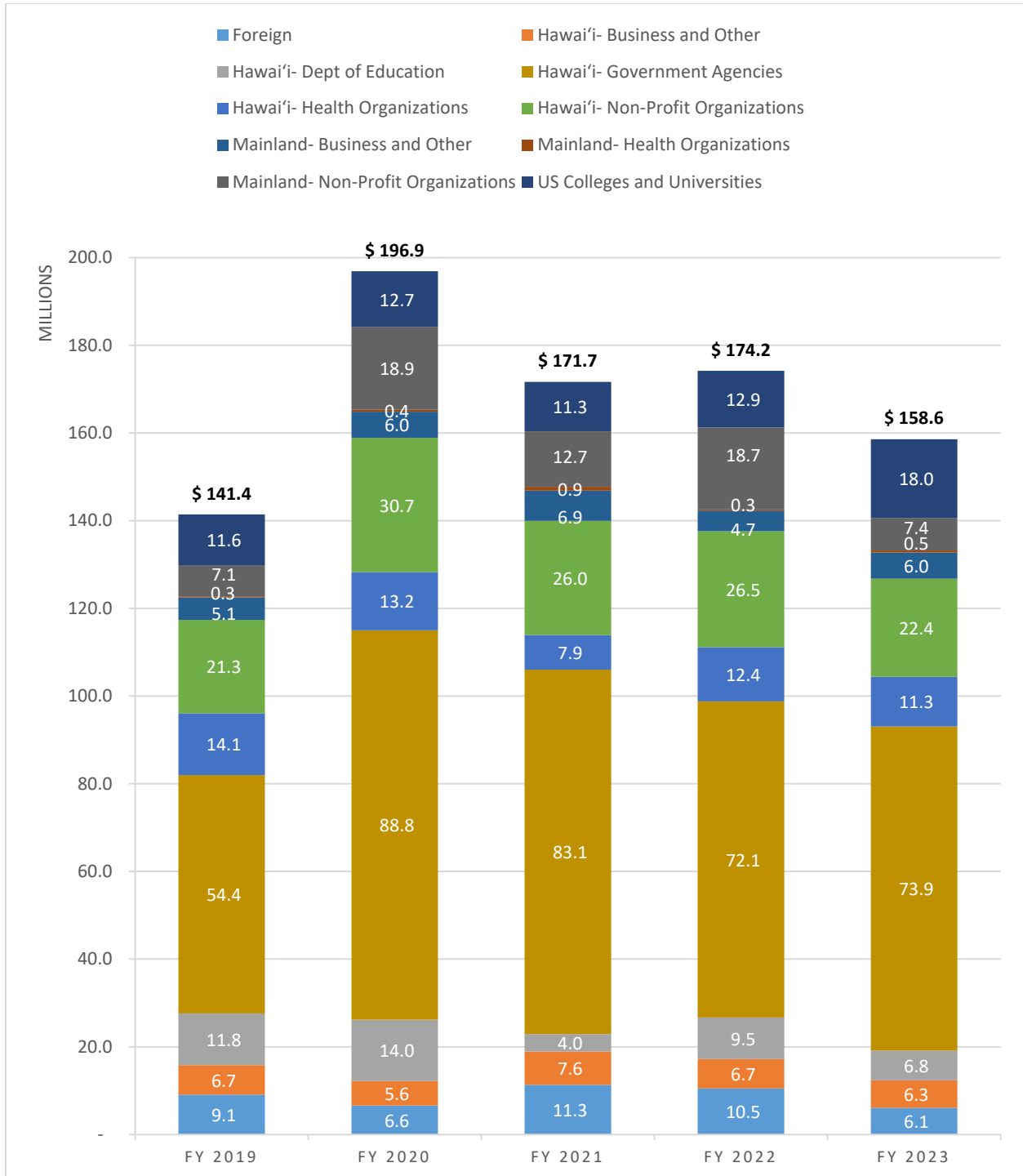
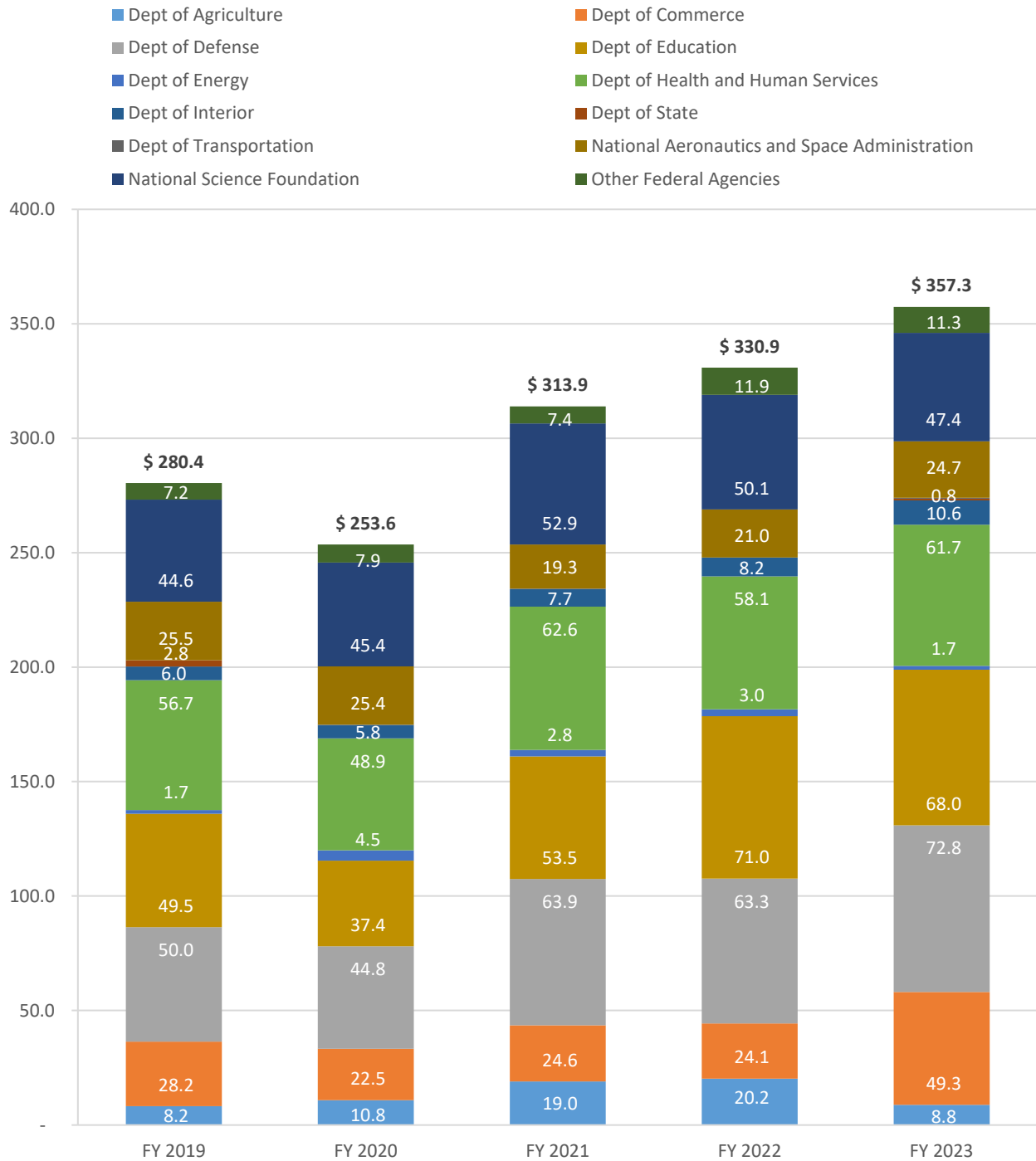


Chart 3b: Federal Awards by Fiscal Year
Five Year Comparison
(in millions)



**Figure 3: Total Contract and Grant Awards Received
Five Year Comparison**

Source of Funding		FY 2019		FY 2020		FY 2021		FY 2022		FY 2023	
		Amount Awarded	% of Total	Amount Awarded	% of Total	Amount Awarded	% of Total	Amount Awarded	% of Total	Amount Awarded	% of Total
Federal	Dept of Agriculture	\$8,222,884	2%	\$10,787,963	2%	\$18,959,135	4%	\$20,230,941	4%	\$8,797,467	2%
	Dept of Commerce	\$28,181,538	7%	\$22,488,575	5%	\$24,553,870	5%	\$24,094,195	5%	\$49,294,416	10%
	Dept of Defense	\$49,966,996	12%	\$44,780,906	10%	\$63,947,139	13%	\$63,306,485	13%	\$72,776,466	14%
	Dept of Education	\$49,540,646	12%	\$37,408,690	8%	\$53,510,948	11%	\$70,960,115	14%	\$67,980,089	13%
	Dept of Energy	\$1,658,015	0%	\$4,535,358	1%	\$2,849,966	1%	\$2,964,342	1%	\$1,729,371	0%
	Dept of Health and Human Services	\$56,714,095	13%	\$48,876,217	11%	\$62,602,750	13%	\$58,116,849	12%	\$61,662,747	12%
	Dept of Interior	\$5,952,633	1%	\$5,777,494	1%	\$7,674,144	2%	\$8,184,534	2%	\$10,605,453	2%
	Dept of State	\$2,775,000	1%		0%		0%		0%	\$750,000	0%
	Dept of Transportation	-	0%	\$200,000	0%	\$200,000	0%	\$50,734	0%	\$400,000	0%
	National Aeronautics and Space Administration	\$25,529,759	6%	\$25,444,136	6%	\$19,287,603	4%	\$20,953,184	4%	\$24,667,739	5%
	National Science Foundation	\$44,634,050	11%	\$45,356,073	10%	\$52,878,091	11%	\$50,061,550	10%	\$47,358,315	9%
	Other Federal Agencies	\$7,236,476	2%	\$7,900,103	2%	\$7,408,023	2%	\$11,927,551	2%	\$11,316,185	2%
Federal Total		\$280,412,092	66%	\$253,555,515	56%	\$313,871,669	65%	\$330,850,480	66%	\$357,338,248	69%
Non-Federal	Hawai'i- Business and Other	\$6,734,322	2%	\$5,601,377	1%	\$7,572,360	2%	\$6,704,629	1%	\$6,298,129	1%
	Hawai'i- Dept of Education	\$11,796,600	3%	\$13,971,439	3%	\$3,988,446	1%	\$9,467,998	2%	\$6,762,030	1%
	Hawai'i- Government Agencies	\$54,354,585	13%	\$88,827,235	20%	\$83,122,450	17%	\$72,099,887	14%	\$73,929,901	14%
	Hawai'i- Health Organizations	\$14,101,752	3%	\$13,238,347	3%	\$7,920,609	2%	\$12,357,801	2%	\$11,349,460	2%
	Hawai'i- Non-Profit Organizations	\$21,301,837	5%	\$30,652,147	7%	\$26,038,426	5%	\$26,453,935	5%	\$22,375,832	4%
	Mainland- Business and Other	\$5,129,155	1%	\$5,952,383	1%	\$6,890,171	1%	\$4,706,757	1%	\$5,982,237	1%
	Mainland- Health Organizations	\$262,863	0%	\$442,816	0%	\$860,927	0%	\$262,096	0%	\$455,713	0%
	Mainland- Non-Profit Organizations	\$7,064,790	2%	\$18,899,232	4%	\$12,662,232	3%	\$18,669,734	4%	\$7,405,913	1%
	US Colleges and Universities	\$11,618,287	3%	\$12,693,837	3%	\$11,274,384	2%	\$12,935,996	3%	\$17,961,715	3%
	Foreign	\$9,075,877	2%	\$6,604,921	1%	\$11,327,252	2%	\$10,509,821	2%	\$6,056,392	1%
Non-Federal Total		\$141,440,068	34%	\$196,883,734	44%	\$171,657,257	35%	\$174,168,654	34%	\$158,577,322	31%
Grand Total		\$421,852,160	100%	\$450,439,249	100%	\$485,528,926	100%	\$505,019,134	100%	\$515,915,570	100%

Chart 4: Total Federal CARES Act Awards by Campus
(in millions)

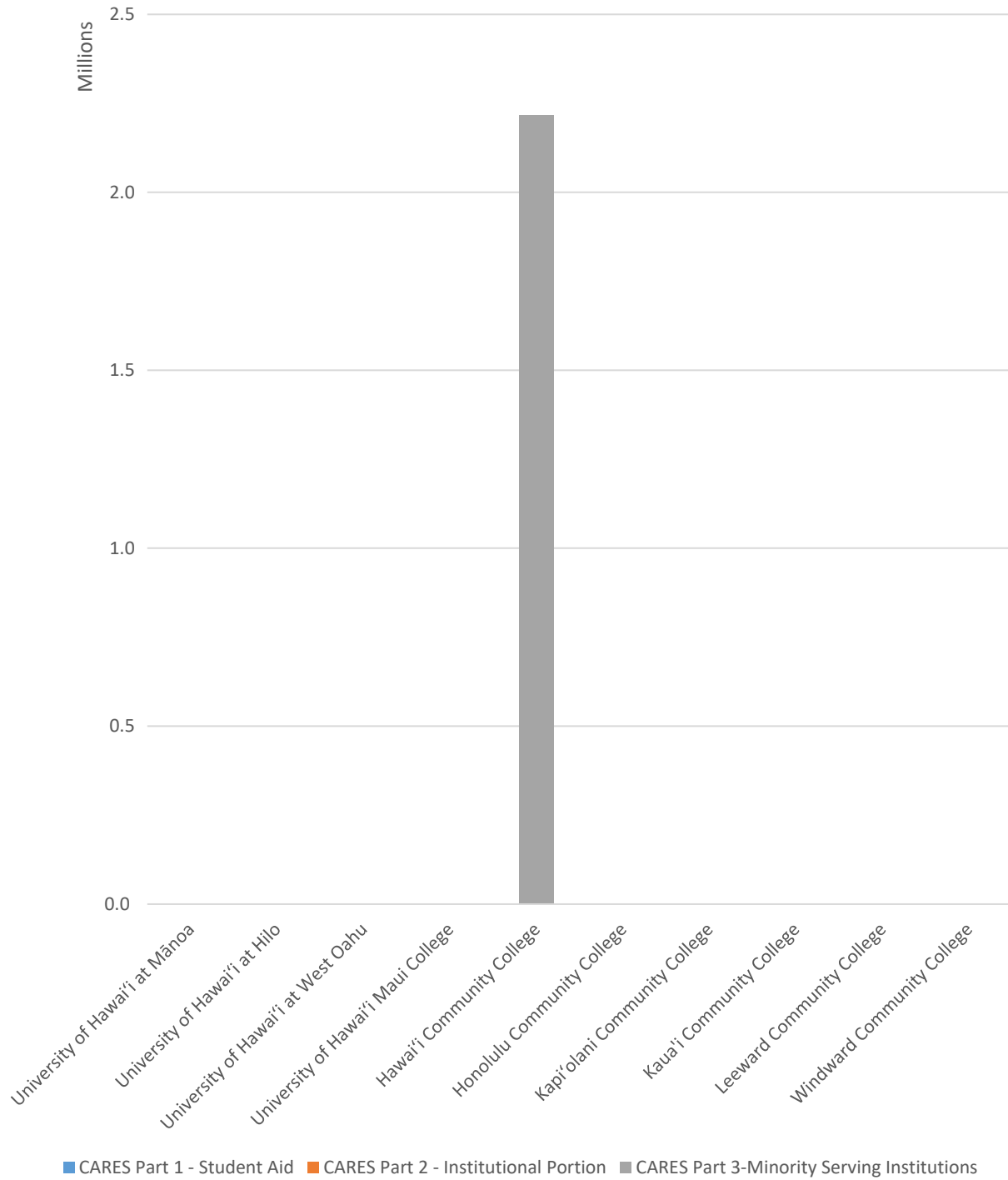


Figure 4: Summary of Federal CARES Act Awards

Campus	CARES Part 1 Student Aid	CARES Part 2 Institutional Portion	CARES Part 3 Minority Serving Institutions	Total CARES Awards
University of Hawai'i at Mānoa	-	-	-	-
University of Hawai'i at Hilo	-	-	-	-
University of Hawai'i at West Oahu	-	-	-	-
University of Hawai'i Maui College	-	-	-	-
Hawai'i Community College	-	-	\$2,215,342	\$2,215,342
Honolulu Community College	-	-	-	-
Kapi'olani Community College	-	-	-	-
Kauai Community College	-	-	-	-
Leeward Community College	-	-	-	-
Windward Community College	-	-	-	-
Grand Total	-	-	\$2,215,342	\$2,215,342

Note: Federal CARES Act awards (HEERF) are not included in the \$515,915,570 FY23 award total

**Chart 5: Number of Proposals Submitted
Prior Year Comparison**

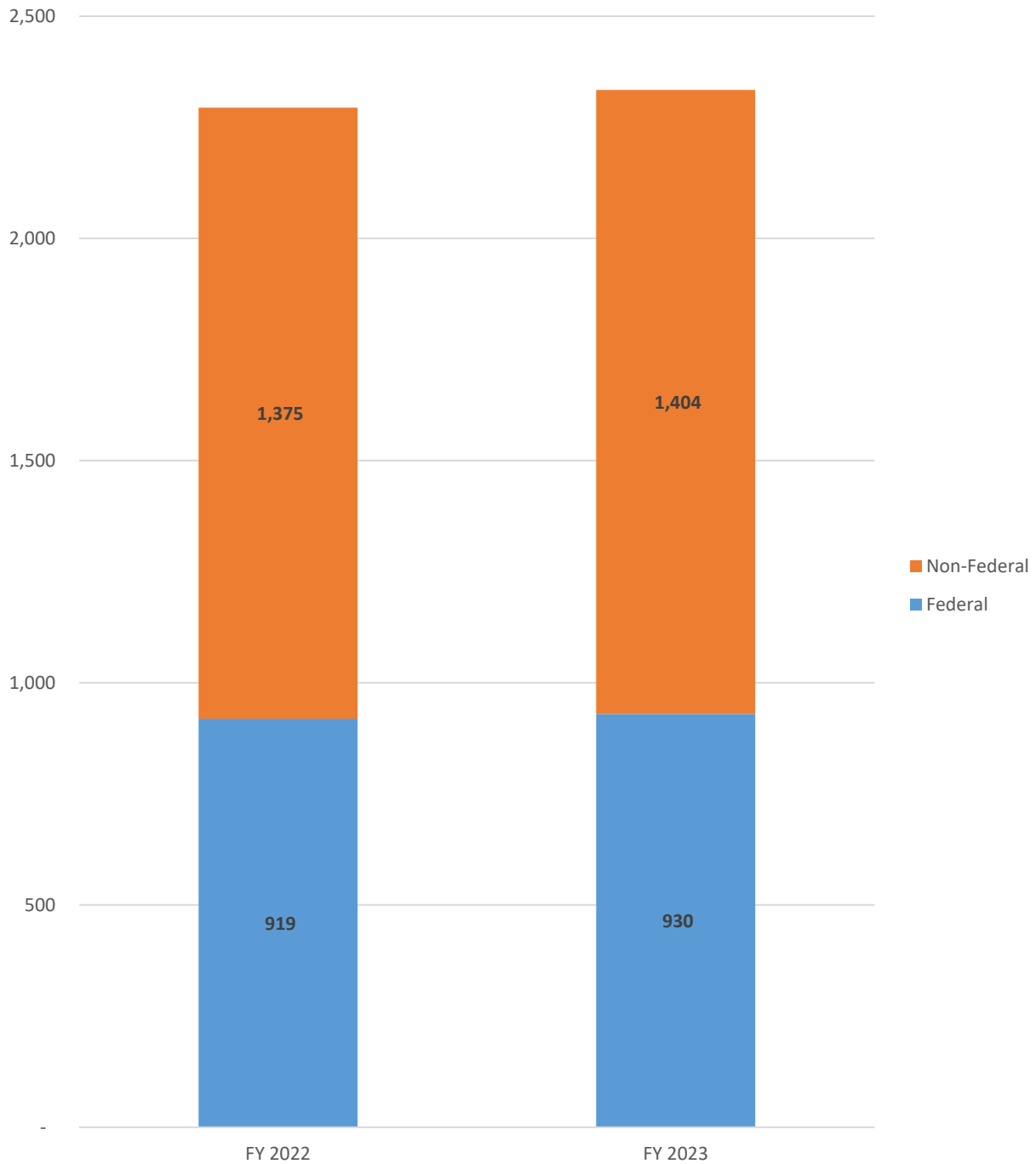
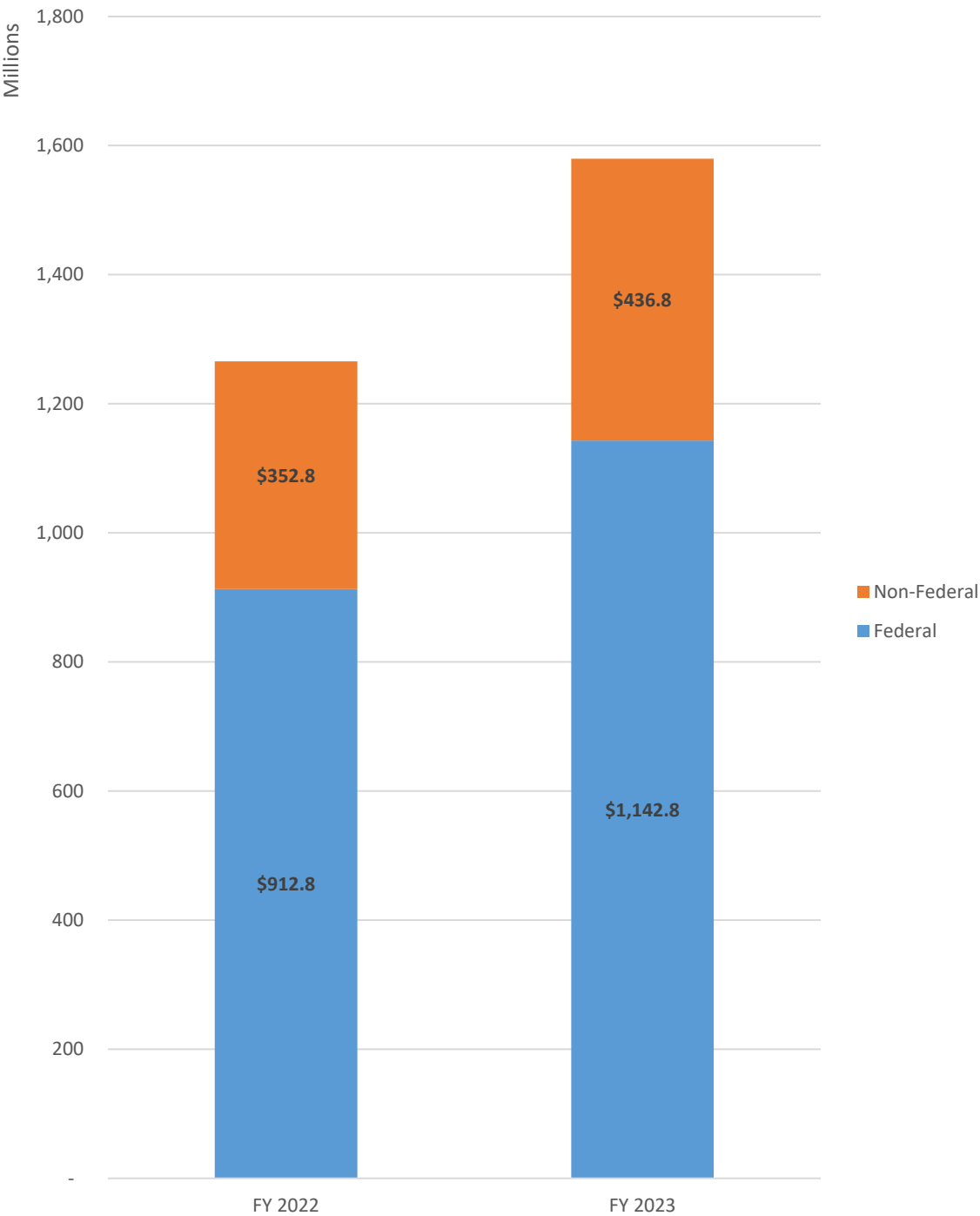


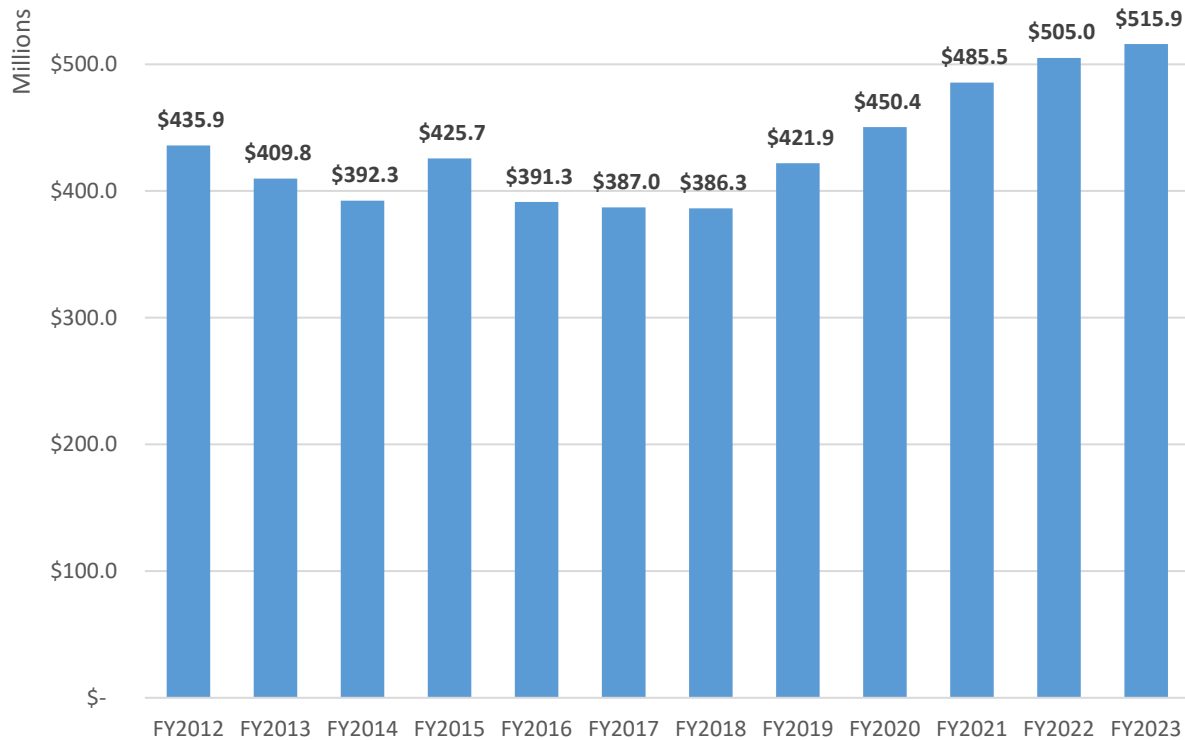
Chart 6: Total Dollar Amount of Proposals Submitted
Prior Year Comparison
(in millions)



**Figure 5: Proposal Summary by Source of Funding
Prior Year Comparison**

Source of Funding		FY 2022		FY 2023	
		Proposals Submitted	Requested Amount	Proposals Submitted	Requested Amount
Federal	Dept of Agriculture	74	\$12,544,148	103	\$98,004,235
	Dept of Commerce	90	\$84,207,270	78	\$91,874,583
	Dept of Defense	74	\$66,712,988	81	\$228,116,608
	Dept of Education	123	\$138,445,361	76	\$93,892,886
	Dept of Energy	20	\$19,476,049	26	\$38,482,894
	Dept of Health and Human Services	143	\$334,852,275	152	\$311,173,553
	Dept of Interior	49	\$12,395,260	59	\$16,576,958
	Dept of State	7	\$5,774,894	3	\$822,028
	Dept of Transportation	2	\$400,000	5	\$25,153,100
	National Aeronautics and Space Administration	105	\$64,537,471	99	\$82,052,217
	National Science Foundation	191	\$150,507,237	189	\$119,198,344
	Other Federal Agencies	41	\$22,971,728	59	\$37,467,992
Federal Total		919	\$912,824,681	930	\$1,142,815,398
Non-Federal	Hawaii- Business and Other	89	\$9,233,489	71	\$9,218,768
	Hawaii- Dept of Education	30	\$8,441,489	31	\$8,528,583
	Hawaii- Government Agencies	361	\$142,598,415	368	\$170,624,405
	Hawaii- Health Organizations	39	\$4,835,803	27	\$13,486,842
	Hawaii- Non-Profit Organizations	395	\$37,825,273	332	\$33,343,139
	Mainland- Business and Other	82	\$24,149,150	106	\$24,319,813
	Mainland- Health Organizations	17	\$5,194,334	21	\$16,930,034
	Mainland- Non-Profit Organizations	134	\$38,680,628	135	\$29,772,358
	US Colleges and Universities	162	\$70,455,331	244	\$113,163,685
	Foreign	66	\$11,379,831	69	\$17,429,789
Non-Federal Total		1,375	\$352,793,743	1,375	\$436,817,416
Grand Total		2,294	\$1,265,618,424	2,334	\$1,579,632,814

Chart 7: Total Contract and Grant Awards – 12 Year Comparison
(in millions)



**Figure 6: Total Contract and Grant Awards Summary
12 Year Comparison**

Year	Total Awarded	% Change	Year	Total Awarded	% Change
FY 2012	\$435,874,967	-11%	FY 2018	\$386,311,703	0%
FY 2013	\$409,783,318	-6%	FY 2019	\$421,852,160	9%
FY 2014	\$392,314,955	-4%	FY 2020	\$450,439,249	7%
FY 2015	\$425,650,338	8%	FY 2021	\$485,528,926	8%
FY 2016	\$391,334,528	-8%	FY 2022	\$505,019,134	4%
FY 2017	\$387,001,705	-1%	FY 2023	\$515,915,570	2%

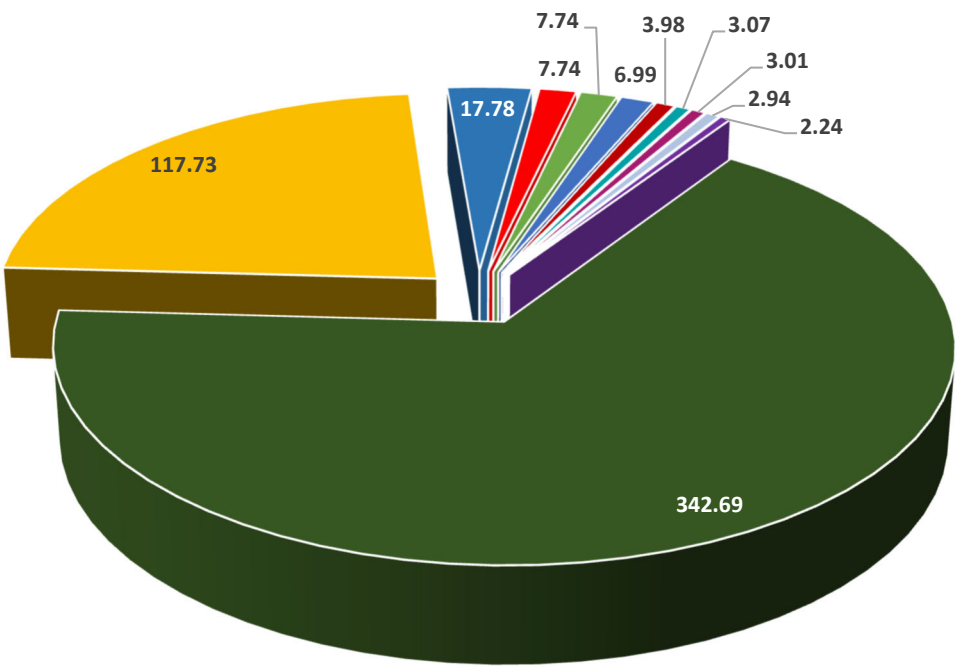
Figure 7: Top Individual Awards

Award Amount	PI Name	Department	Award Sponsor	Title
\$17,999,820	David Lassner	Pacific Disaster Center	DEFENSE, DEPT-WASHINGTON HEADQUARTERS SVCS	University of Hawai'i Pacific Disaster Center (UoH PDC) Cooperative Agreement 2021-2026
\$16,351,025	Tammi Jane Oyadomari-Chun	Office of the Vice President for Community Colleges	COMMERCE, DEPT-ECONOMIC DEV ADM-FED	Hawai'i Good Jobs Challenge: Resilient Hawai'i
\$14,093,345	Anita L Lopez	School of Ocean and Earth Science and Technology	NATIONAL SCIENCE FOUNDATION	R/V Kilo Moana Ship Operations CY18-23
\$8,699,220	David Lassner	Applied Research Laboratory	DEFENSE, DEPT-AIR FORCE RESEARCH LABORATORY	Vanguard Center's Unified UARC for Maui High Performance Computing Center Support (VaCUUMS)
\$6,725,491	Stephen A Schatz	Hawai'i P-20 Partnerships for Education Office	EDUCATION, DEPT-FED TITLE 1 PERKINS	Career and Technical Education - Basic Grants to States
\$6,637,041	Stephen A Schatz	Hawai'i P-20 Partnerships for Education Office	HEALTH & HUMAN SVC, DEPT-ADM CHILD & FAM (ACF)	Preschool Development Grants Birth to Five (PDG B-5) Renewal Grant - Hawai'i
\$5,500,000	Kenneth Chambers	Institute for Astronomy	NATIONAL AERONAUT & SPACE ADM	A Wide Area Survey for NEOs with Pan-STARRS
\$5,442,409	Vassilis Syrmos	Office of the Vice President for Research and Innovation	DEFENSE, DEPT-NAVY NAVAL FAC ENGRG COMMAND	University of Hawai'i Engineering Services in Support of Remediation Activities Joint Base Pearl Harbor-Hickam (JBPHH), Oahu, Hawai'i
\$5,368,000	Vassilis Syrmos	Office of the Vice President for Research and Innovation	DEFENSE, DEPT- US ARMY CORPS OF ENGINEERS	Natural Resources and Threatened Endangered Species Management for the Army Natural Resources Program on Oahu, US Army Garrison Hawai'i, Oahu, Hawai'i
\$5,000,000	Garret Tadashi Yoshimi	Office of the Vice President for Information Technology	GOVERNOR, OFFICE OF - STATE OF HAWAI'I	Broadband Equity, Access and Deployment (BEAD) Program

Figure 8: Top Fifty Principal Investigators in Award Dollars

Rank	Investigator	Total Awarded	Unit
1	David Lassner	\$32,756,212	President, University of Hawai'i System
2	Vassilis Syrmos	\$18,697,936	Office of the Vice President for Research and Innovation
3	Stephen A Schatz	\$18,079,825	Office of the Vice President for Academic Strategy
4	Shaya Honarvar	\$17,901,496	College of Natural Sciences
5	Tammi Jane Oyadomari-Chun	\$16,418,648	Office of the Vice President for Community Colleges
6	Anita L Lopez	\$15,930,345	School of Ocean and Earth Science and Technology
7	Darren Lerner	\$10,255,647	School of Ocean and Earth Science and Technology
8	Douglas Scott Luther	\$8,224,413	School of Ocean and Earth Science and Technology
9	David Duffy	\$6,750,941	College of Natural Sciences
10	Nancy Foster	\$6,655,820	John A. Burns School of Medicine
11	Lui Hokoana	\$6,531,143	Chancellor, UH Maui College
12	Loic Le Marchand	\$6,268,710	University of Hawai'i Cancer Center
13	Clifford Morden	\$6,162,892	College of Natural Sciences
14	Garret Tadashi Yoshimi	\$6,155,280	Office of the Vice President for Information Technology
15	Kenneth Chambers	\$5,596,679	Institute for Astronomy
16	Jerris Hedges	\$5,527,575	John A. Burns School of Medicine
17	Ardis Eschenberg	\$5,330,142	Chancellor, Windward Community College
18	Kelley Withy	\$5,192,946	John A. Burns School of Medicine
19	Karl Eujung Kim	\$5,151,536	College of Social Sciences
20	Melissa Iwamoto	\$4,960,566	School of Ocean and Earth Science and Technology
21	Peter Hoffmann	\$4,923,806	John A. Burns School of Medicine
22	Benjamin Jones	\$4,503,128	Office of the Vice President for Research and Innovation
23	Norman Hisao Okamura	\$4,481,020	College of Social Sciences
24	Gwen Jacobs	\$4,084,221	Office of the Vice President for Information Technology
25	John Rayner	\$4,070,947	Institute for Astronomy
26	Marek Kirs	\$3,877,864	Water Resources Research Center
27	Joseph Kaholokula	\$3,752,724	John A. Burns School of Medicine
28	Patrick Stephen Cross	\$3,637,609	Office of the Vice President for Research and Innovation
29	Michael Hamnett	\$3,309,204	College of Social Sciences
30	Charles Henry Fletcher	\$3,000,000	School of Ocean and Earth Science and Technology
31	Keiki Kawaiaea	\$2,979,721	Ka Haka 'Ula O Ke'elikōlani-UHH
32	Clifford Bersamira	\$2,850,000	Thompson School of Social Work & Public Health
33	Neal Palafox	\$2,806,769	University of Hawai'i Cancer Center
34	Nathan Murata	\$2,787,952	College of Education
35	Guohui Zhang	\$2,750,913	College of Engineering
36	Christina Higa	\$2,556,737	College of Social Sciences
37	Steven W Auerbach	\$2,550,000	Office of the Vice President for Research and Innovation
38	Kenneth Kaneshiro	\$2,519,896	School of Ocean and Earth Science and Technology
39	Kiriko Takahashi	\$2,503,876	College of Education
40	John A Shepherd	\$2,501,623	University of Hawai'i Cancer Center
41	Treena S Becker	\$2,434,232	Thompson School of Social Work & Public Health
42	Hye-Jin Park	\$2,367,877	College of Education
43	Philip R Thompson	\$2,260,459	School of Ocean and Earth Science and Technology
44	Cecilia Shikuma	\$2,235,191	John A. Burns School of Medicine
45	Rachel Hualani Loo	\$2,139,153	Chancellor, UH Hilo
46	Louise Pagotto	\$2,132,904	Chancellor, Kapi'olani Community College
47	Faye Kimura	\$2,128,930	William S. Richardson School of Law
48	Alexander Stokes	\$2,126,310	John A. Burns School of Medicine
49	Eric Folk	\$2,103,503	College of Education
50	Carl Gustav Meyer	\$2,011,799	School of Ocean and Earth Science and Technology

Chart 8: Contract and Grant Awards by Campus
(in millions)



- University of Hawai'i at Manōa
- University of Hawai'i at Hilo
- Windward Community College
- University of Hawai'i at West O'ahu
- Kaua'i Community College
- Honolulu Community College
- University of Hawai'i System
- University of Hawai'i Maui College
- Kapi'olani Community College
- Hawai'i Community College
- Leeward Community College

Chart 9: UH Mānoa - Contract and Grant Awards by College/Department
(in millions)

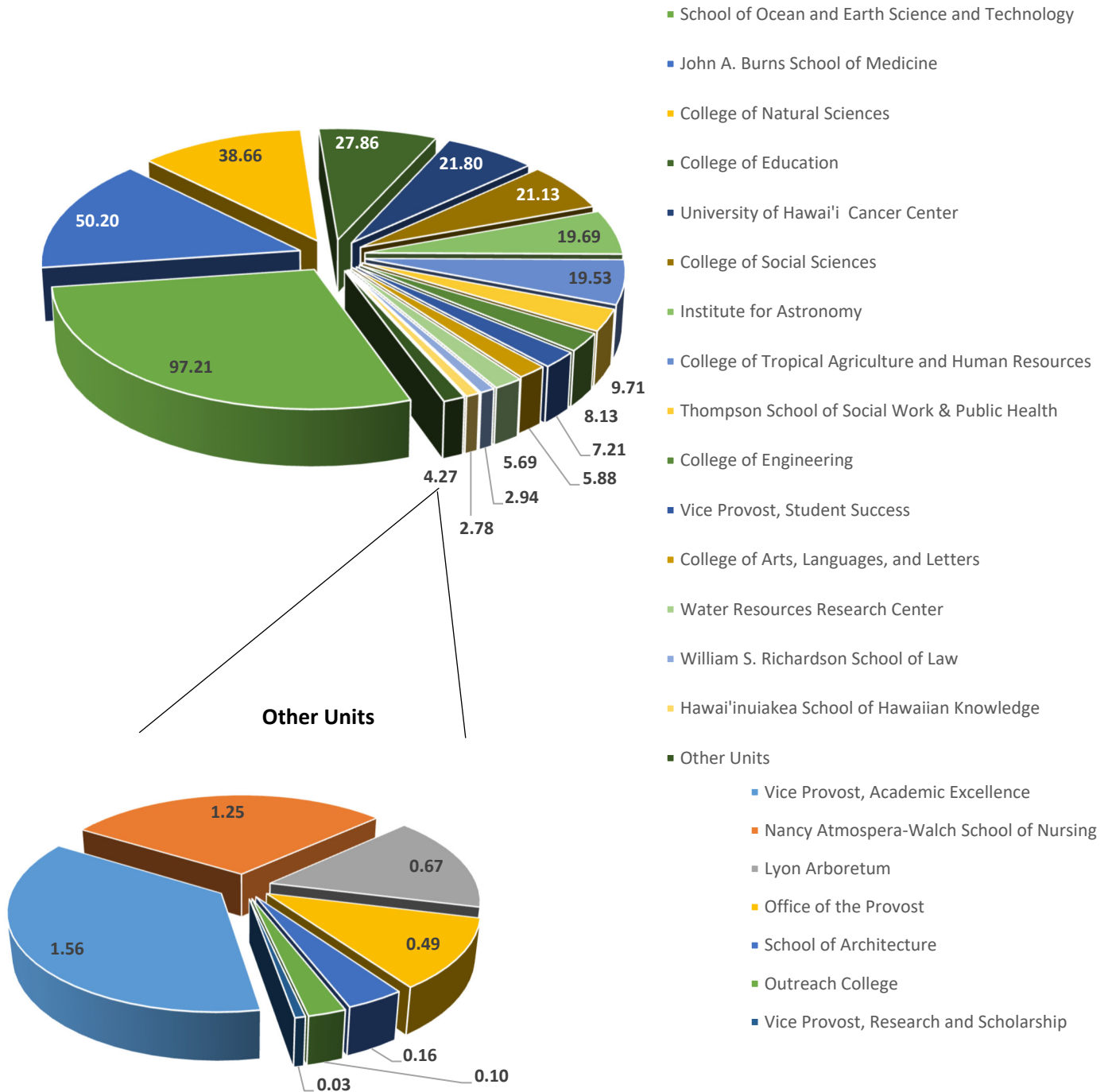


Chart 10: UH Hilo - Contract and Grant Awards by College/Department
(in millions)

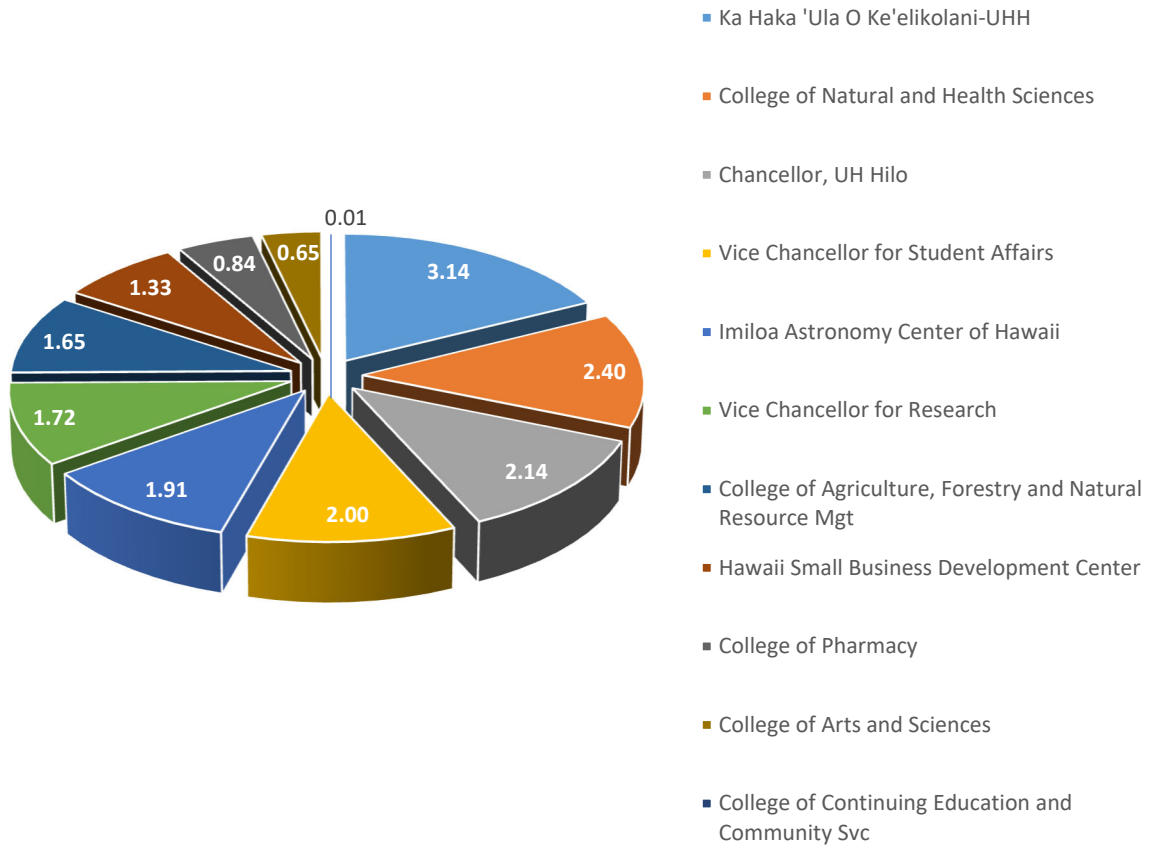


Figure 9: Contract and Grant Awards Summary by Campus

Campus	Award Amount	Award Count	% of Total
Hawai'i Community College	\$3,074,515	12	0.74%
Honolulu Community College	\$2,241,114	9	0.56%
Kapi'olani Community College	\$6,993,210	20	1.24%
Kaua'i Community College	\$3,008,206	10	0.62%
Leeward Community College	\$2,936,677	9	0.56%
University of Hawai'i at Hilo	\$17,782,300	100	6.19%
University of Hawai'i at Mānoa	\$342,694,191	1,303	80.68%
University of Hawai'i at West O'ahu	\$3,982,034	12	0.74%
University of Hawai'i Maui College	\$7,740,258	30	1.86%
University of Hawai'i System	\$117,727,601	92	5.70%
Windward Community College	\$7,735,464	18	1.11%
Grand Total	\$515,915,570	1,615	100.00%

**Figure 10a: UH Mānoa - Contract and Grant Awards Summary
by College/Department**

UH Mānoa College/Department	Award Amount	Award Count	% of Total
College of Arts, Languages, and Letters	5,880,797	41	3.15%
Center for Japanese Studies	602,765	3	0.23%
Center for Language and Technology	182,657	1	0.08%
Center for Pacific Islands Studies	443,532	2	0.15%
College of Arts and Humanities	6,000	1	0.08%
College of Arts, Languages, and Letters	1,313,175	3	0.23%
Department of East Asian Languages and Literature	1,145,071	7	0.54%
Department of Second Language Studies	38,301	2	0.15%
Dept of Languages and Literatures of Europe and the Americas	6,002	2	0.15%
History (UH Mānoa)	131,782	5	0.38%
Music (UH Mānoa)	44,520	4	0.31%
Philosophy (UH Mānoa)	75,479	2	0.15%
School of Pacific and Asian Studies	1,573,378	3	0.23%
Theatre and Dance	42,964	4	0.31%
UHM Uehiro Academy for Philosophy and Ethics in Education	275,171	2	0.15%
College of Education	27,863,223	69	5.30%
Center on Disability Studies/University Affiliated Pgms	13,590,741	30	2.30%
College of Education	4,569,957	4	0.31%
Curriculum Research and Development Group	2,200,172	9	0.69%
Department of Curriculum Studies	1,721,751	4	0.31%
Department of Kinesiology and Rehabilitation Science	1,530,609	8	0.61%
Department of Special Education	1,638,057	4	0.31%
Department of Learning Design and Technology	100,000	1	0.08%
Department of Educational Psychology	489,205	1	0.08%
Institute for Teacher Education	2,022,731	8	0.61%
College of Engineering	8,127,395	35	2.69%
Civil and Environmental Engineering	4,015,515	13	1.00%
College of Engineering	847,942	3	0.23%
Electrical Engineering	1,166,932	6	0.46%
Mechanical Engineering	2,097,006	13	1.00%
College of Natural Sciences	38,658,693	183	14.04%
Department of Chemistry	1,894,780	11	0.84%
Department of Mathematics	377,493	5	0.38%
Department of Physics and Astronomy	2,648,586	15	1.15%
Information and Computer Sciences	910,859	2	0.15%
Pacific Cooperative Studies Unit	30,916,381	133	10.21%
School of Life Sciences	1,910,594	17	1.30%
College of Social Sciences	21,128,950	83	6.37%
College of Social Sciences	71,230	1	0.08%
Department of Anthropology	198,213	5	0.38%
Department of Women, Gender, and Sexuality Studies	10,000	1	0.08%
Economics (UH Mānoa)	789	1	0.08%

Ethnic Studies	373,743	3	0.23%
Geography (UH Mānoa)	135,180	2	0.15%
Political Science (UH Mānoa)	182,486	1	0.08%
Psychology (UH Mānoa)	2,970,744	11	0.84%
School of Communications	68,000	1	0.08%
Social Science Research Institute	11,715,287	46	3.53%
Sociology (UH Mānoa)	120,474	3	0.23%
Urban and Regional Planning	5,282,804	8	0.61%
College of Tropical Agriculture and Human Resources	19,532,188	136	10.44%
Center on the Family	380,346	6	0.46%
College of Tropical Agriculture and Human Resources	300,314	2	0.15%
Cooperative Extension	1,318,208	7	0.54%
CTAHR Formula Grant	816,660	7	0.54%
Family and Consumer Sciences	23,010	1	0.08%
Hawai'i County	1,065,225	22	1.69%
Human Nutrition, Food and Animal Sciences	3,376,700	16	1.23%
Kauai County	783,667	2	0.15%
Maui County	152,628	3	0.23%
Molecular Biosciences and Bioengineering	408,969	4	0.31%
Natural Resources and Environmental Mgt (NREM)	2,318,289	18	1.38%
Oahu County	1,104,449	4	0.31%
Office of The Assoc Dean for Academic and Student Affairs	1,044,703	2	0.15%
Plant and Environmental Protection Sciences	3,835,034	32	2.46%
Tropical Plant and Soil Science	2,603,986	10	0.77%
Hawai'inuiakea School of Hawaiian Knowledge	2,778,873	25	1.92%
Hawai'inuiakea School of Hawaiian Knowledge	1,454,716	4	0.31%
Kamakakuokalani Center for Hawaiian Studies	847,000	10	0.77%
Kawaihuelani Center for Hawaiian Language	329,994	7	0.54%
Native Hawai'i Student Services	147,163	4	0.31%
Institute for Astronomy	19,690,366	61	4.68%
Institute for Astronomy	19,690,366	61	4.68%
John A. Burns School of Medicine	50,196,513	155	11.90%
Academic Affairs (ADAA)	7,242,082	25	1.92%
Department of Anatomy, Biochemistry, and Physiology	1,775,569	15	1.15%
Department of Cell and Molecular Biology	2,717,045	9	0.69%
Department of Family Medicine and Community Health	2,044,697	12	0.92%
Department of Geriatric Medicine	2,000,462	9	0.69%
Department of Medicine	3,695,898	16	1.23%
Department of Native Hawaiian Health	5,457,928	11	0.84%
Department of Obstetrics, Gynecology and Women's Health	1,077,235	4	0.31%
Department of Pediatrics	2,624,509	9	0.69%
Department of Psychiatry	709,603	2	0.15%
Department of Quantitative Health Sciences	1,616,009	6	0.46%
Department of Surgery	390,266	5	0.38%
Department of Tropical Medicine, Medical Micro and Pharm	2,073,881	21	1.61%
Fundamentals of Health Sciences (ADR)	75,867	2	0.15%

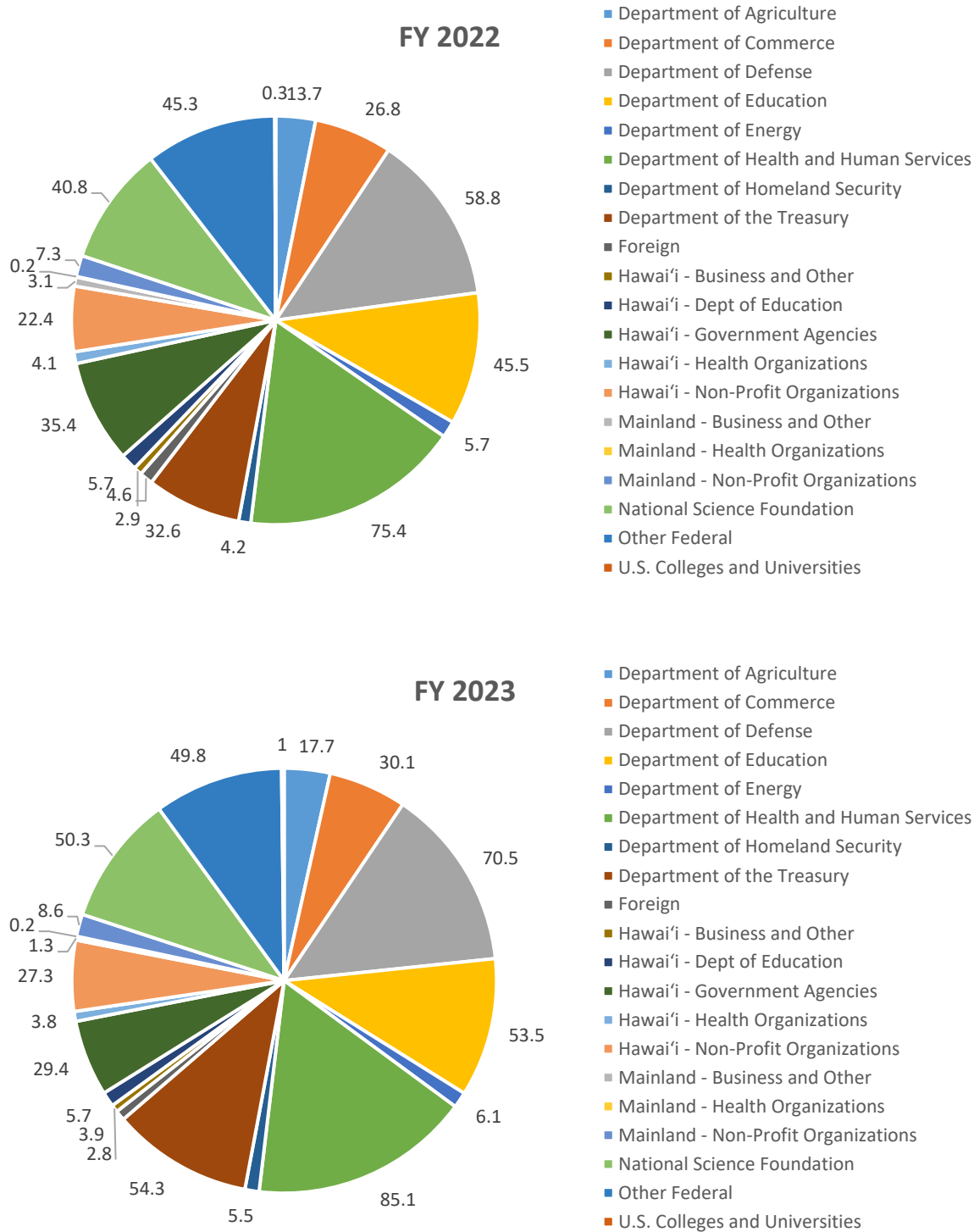
John A. Burns School of Medicine	16,695,462	9	0.69%
Lyon Arboretum	670,371	5	0.38%
Lyon Arboretum	670,371	5	0.38%
Nancy Atmospera-Walch School of Nursing	1,254,733	9	0.69%
Department of Nursing	(213,103)	1	0.08%
Nancy Atmospera-Walch School of Nursing	1,467,836	8	0.61%
Office of the Provost	487,292	6	0.46%
Office of the Provost	433,178	5	0.38%
Office of Global Engagement	54,114	1	0.08%
Outreach College	104,933	5	0.38%
Community Programs	97,183	4	0.31%
Outreach College	7,750	1	0.08%
School of Architecture	162,549	1	0.08%
School of Architecture	162,549	1	0.08%
School of Ocean and Earth Science and Technology	97,214,943	330	25.33%
Center for Microbial Oceanography, Research and Edu	593,279	2	0.15%
Cooperative Institute for Marine and Atmospheric Research	18,051,844	50	3.84%
Department of Atmospheric Sciences	2,173,152	8	0.61%
Department of Ocean and Resources Engineering	1,821,207	13	1.00%
Department of Oceanography	7,518,797	31	2.38%
Earth Sciences	1,358,397	13	1.00%
Hawai'i Institute of Geophysics and Planetology (HIGP)	8,612,588	59	4.53%
Hawai'i Institute of Marine Biology (HIMB)	13,150,830	48	3.68%
Hawai'i Natural Energy Institute (HNEI)	1,905,995	10	0.77%
International Pacific Research Center (IPRC)	334,926	4	0.31%
Pacific Biosciences Research Center	7,172,689	38	2.92%
School of Ocean and Earth Science and Technology	18,930,345	9	0.69%
Sea Grant College Program	13,766,961	41	3.15%
University Marine Center/Ship Operations	1,823,933	4	0.31%
Thompson School of Social Work & Public Health	9,714,104	30	2.30%
Center on Aging	2,874,700	5	0.38%
Department of Social Work	378,651	5	0.38%
Office of Public Health Studies	3,055,473	12	0.92%
Thompson School of Social Work & Public Health	3,405,280	8	0.61%
University of Hawai'i Cancer Center	21,804,022	72	5.53%
Cancer Etiology (Epidemiology)	12,268,666	33	2.53%
Natural Products (Cancer Biology)	2,379,998	15	1.15%
Social and Behavioral Sciences (Prevention in the Pacific)	1,486,794	9	0.69%
Translational and Clinical Research	1,336,431	6	0.46%
University of Hawai'i Cancer Center	4,332,133	9	0.69%
Vice Provost, Academic Excellence	1,561,212	11	0.84%
Graduate Education	1,420,614	5	0.38%
Library (UH Mānoa)	111,040	5	0.38%
Vice Provost, Academic Excellence	29,558	1	0.08%
Vice Provost, Research and Scholarship	28,867	1	0.08%
Vice Provost, Research and Scholarship	28,867	1	0.08%

Vice Provost, Student Success	7,209,007	17	1.30%
Health & Wellness to University Health Services	9,500	1	0.08%
Student Equity Excel & Diversity	4,661,407	9	0.69%
Student Academic Success	593,708	3	0.23%
Vice Provost, Student Success	1,092,074	1	0.08%
Women's Center	852,318	3	0.23%
Water Resources Research Center	5,686,799	12	0.92%
Water Resources Research Center	5,686,799	12	0.92%
William S. Richardson School of Law	2,938,361	16	1.23%
William S. Richardson School of Law	2,938,361	16	1.23%
Grand Total	342,694,191	1303	100.00%

**Figure 10b: UH Hilo - Contract and Grant Awards Summary
by College/Department**

UH Hilo College/Department	Award Amount	Award Count	% of Total
Chancellor, UH Hilo	2,139,153	4	4.00%
Chancellor, UH Hilo	2,139,153	4	4.00%
College of Agriculture, Forestry and Natural Resource Mgt	1,652,822	13	13.00%
College of Agriculture, Forestry and Natural Resource Mgt	418,344	8	8.00%
Pacific Aquaculture and Coastal Resources Ctr	1,234,478	5	5.00%
College of Arts and Sciences	651,472	11	11.00%
Anthropology (UH Hilo)	51,875	1	1.00%
College of Arts and Sciences	185,600	2	2.00%
Geography (UH Hilo)	231,497	4	4.00%
Social Sciences Division	122,500	2	2.00%
Psychology (UH Hilo)	10,000	1	1.00%
Political Science and Administration of Justice (UH Hilo)	50,000	1	1.00%
College of Pharmacy	839,462	10	10.00%
College of Pharmacy	117,693	3	3.00%
Pharmaceutical Sciences	176,372	2	2.00%
Pharmacy Practice	102,528	2	2.00%
Research	442,869	3	3.00%
Hawai'i Small Business Development Center	1,326,886	4	4.00%
Hawai'i Small Business Development Center	1,326,886	4	4.00%
Imiloa Astronomy Center of Hawai'i	1,909,291	2	2.00%
Imiloa Astronomy Center of Hawai'i	1,909,291	2	2.00%
Ka Haka 'Ula O Ke'elikelani-UHH	3,135,721	11	11.00%
Hale Kuamo'o Center	956,000	2	2.00%
Ka Haka 'Ula O Ke'elikelani-UHH	2,179,721	9	9.00%
Vice Chancellor for Research	1,721,088	11	11.00%
Vice Chancellor for Research	1,721,088	11	11.00%
Vice Chancellor for Student Affairs	1,996,770	8	8.00%
Vice Chancellor for Student Affairs	508,766	3	3.00%
Upward Bound	1,488,004	5	5.00%
College of Natural and Health Sciences	2,399,635	25	25.00%
Biology (UH Hilo)	273,419	4	4.00%
Marine Science	468,712	7	7.00%
Mathematics (UH Hilo)	16,800	1	1.00%
Physics and Astronomy	90,000	1	1.00%
Tropical Conservation Biology and Environmental Science	73,259	1	1.00%
College of Natural and Health Sciences	1,363,504	10	10.00%
Computer Science (UH Hilo)	113,941	1	1.00%
College of Continuing Education and Community Svc	10,000	1	1.00%
College of Continuing Education and Community Svc	10,000	1	1.00%
Grand Total	17,782,300	100	100.00%

Chart 11: Total Contract and Grant Expenditures by Source of Funds
Prior Year Comparison
(in millions)



**Figure 11: Total Contract and Grant Expenditures by Source of Funds
Prior Year Comparison**

Source of Funds	FY 2022	% of Total	FY 2023	% of Total
Department of Agriculture	\$13,732,388.99	3%	\$17,738,375.89	3%
Department of Commerce	\$26,843,958.20	6%	\$30,129,817.07	6%
Department of Defense	\$58,840,360.19	14%	\$70,535,399.13	14%
Department of Education	\$45,489,740.73	10%	\$53,493,529.20	11%
Department of Energy	\$5,743,726.38	1%	\$6,082,500.43	1%
Department of Health and Human Services	\$75,367,061.45	17%	\$85,069,697.19	17%
Department of Homeland Security	\$4,231,088.95	1%	\$5,477,841.41	1%
Department of the Treasury	\$32,555,983.74	7%	\$54,289,331.88	11%
National Science Foundation	\$40,819,487.35	9%	\$50,293,477.82	10%
Other Federal	\$45,251,636.00	10%	\$49,840,592.71	10%
Foreign	\$4,645,626.22	1%	\$3,852,540.56	1%
Hawai'i - Business and Other	\$2,862,932.13	1%	\$2,809,569.98	1%
Hawai'i - Dept of Education	\$5,707,358.04	1%	\$5,708,791.27	1%
Hawai'i - Government Agencies	\$35,351,725.81	8%	\$29,389,297.09	6%
Hawai'i - Health Organizations	\$4,058,817.22	1%	\$3,752,538.27	1%
Hawai'i - Non-Profit Organizations	\$22,411,688.17	5%	\$27,343,758.25	5%
Mainland - Business and Other	\$3,125,393.05	1%	\$1,301,827.38	0%
Mainland - Health Organizations	\$239,586.89	0%	\$156,813.20	0%
Mainland - Non-Profit Organizations	\$7,257,691.40	2%	\$8,609,154.84	2%
U.S. Colleges and Universities	\$283,141.42	0%	\$995,432.93	0%
Grand Total	\$434,819,392.33	100%	\$506,870,286.50	100%

Summary:

- The largest source is the Department of Health and Human Services (17% of the total), followed by Department of Defense (14% of the total) and Department of Treasury (11% of the total).
- UH Foundation award expenditures totaling \$13.9 million in FY 22 and \$17.0 million in FY 23 are included in Hawai'i - Non-Profit Organizations respectively.

Figure 11a COVID-19 Related Award Expenditures by Source of Funds

Source of Funds	FY 2022	% of Total	FY 2023	% of Total
Department of Agriculture	\$351,604.90	1%	\$405,167.02	0%
Department of Commerce	\$107,998.60	0%	\$545,136.08	1%
Department of Defense	\$161,166.00	1%	\$15,708.00	0%
Department of Education	\$5,250,148.51	22%	\$10,732,856.04	12%
Department of Health and Human Services	\$7,519,639.20	31%	\$10,570,477.86	12%
Department of the Treasury	\$336,286.59	1%	\$54,273,105.01	62%
National Science Foundation	\$9,048,971.63	37%	\$9,235,031.40	10%
Other Federal	\$796,750.78	3%	\$1,791,887.61	2%
Foreign	-	0%	-	0%
Hawai'i - Business and Other	\$(0.01)	0%	-	0%
Hawai'i - Government Agencies	\$1,109,660.28	5%	\$101,555.04	0%
Hawai'i - Health Organizations	\$34,631.49	0%	\$25,476.53	0%
Hawai'i - Non-Profit Organizations	-	0%	\$280,420.60	0%
Mainland - Non-Profit Organizations	-	0%	\$5,943.75	0%
GRAND TOTAL	\$24,365,253.07	100%	\$87,982,764.94	100%

Summary:

- These are expenditures on COVID-19 related awards that are included in the annual expenditure grand totals reported in Figure 11. UH received \$50 million in maintenance of effort funding in FY 23 from the Department of the Treasury via the state, which was expended by the deadline of 6/30/23.

Chart 12: Total Federal CARES Act Expenditures by Campus
(in millions)

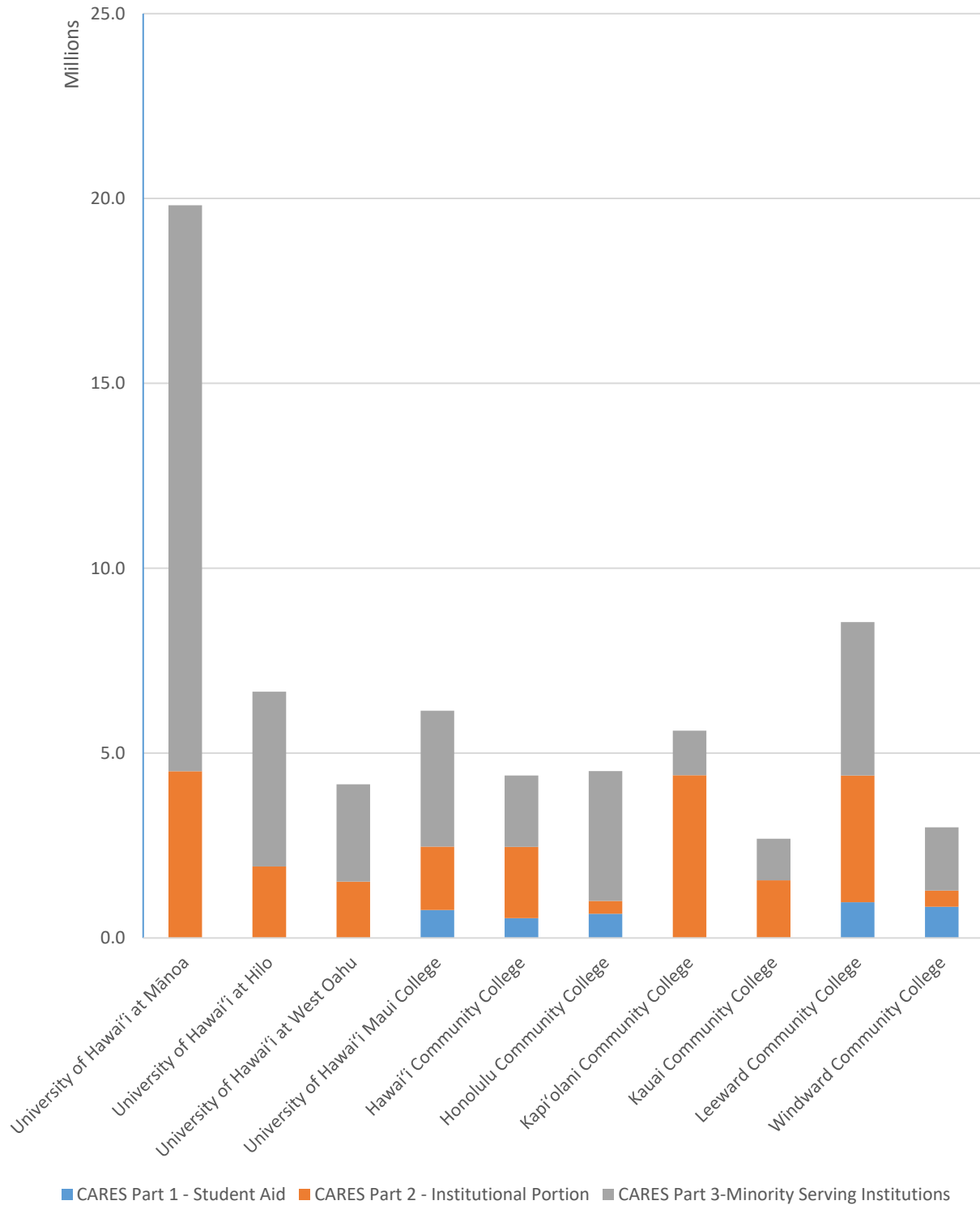


Figure 12: Summary of Federal CARES Act Expenditures

Campus	CARES Part 1 Student Aid	CARES Part 2 Institutional Portion	CARES Part 3 Minority Serving Institutions	Total Expenditures
University of Hawai'i at Mānoa	-	\$4,508,178	\$15,305,577	\$19,813,755
University of Hawai'i at Hilo	\$(1,600)	\$1,934,896	\$4,727,005	\$6,660,301
University of Hawai'i at West Oahu	-	\$1,525,280	\$2,629,985	\$4,155,266
University of Hawai'i Maui College	\$756,330	\$1,712,804	\$3,676,406	\$6,145,541
Hawai'i Community College	\$537,566	\$1,925,806	\$1,928,749	\$4,392,121
Honolulu Community College	\$655,627	\$347,913	\$3,509,013	\$4,512,553
Kapi'olani Community College	-	\$4,401,948	\$1,203,394	\$5,605,342
Kaua'i Community College	\$10,166	\$1,547,745	\$1,127,229	\$2,685,140
Leeward Community College	\$965,630	\$3,429,387	\$4,147,901	\$8,542,918
Windward Community College	\$843,271	\$439,527	\$1,710,879	\$2,993,677
Grand Total	\$3,766,990	421,773,484	\$39,966,139	\$65,506,613

Chart 13: Total Contract and Grant Expenditures by Program Type and Source of Funds
(in millions)

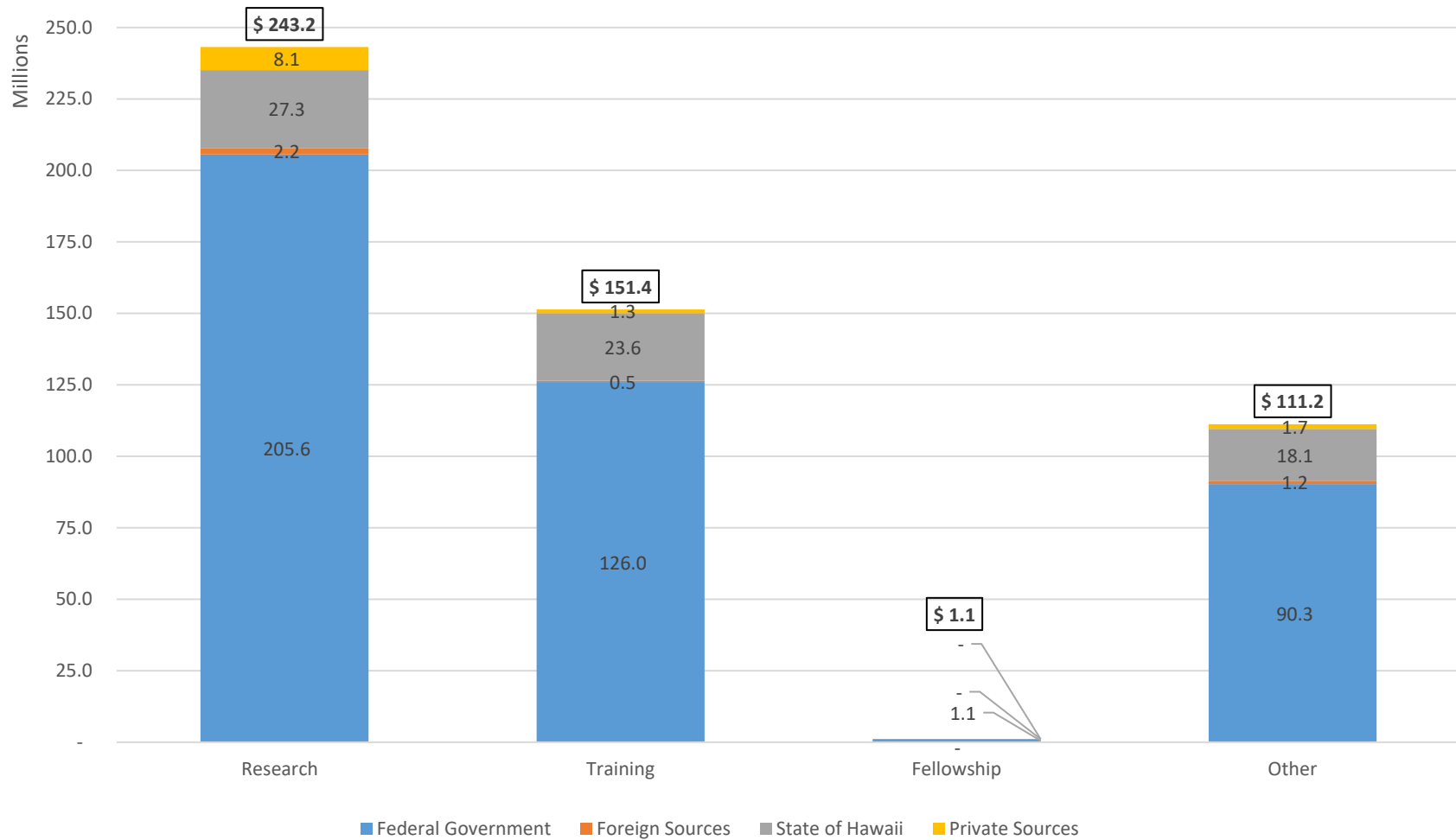
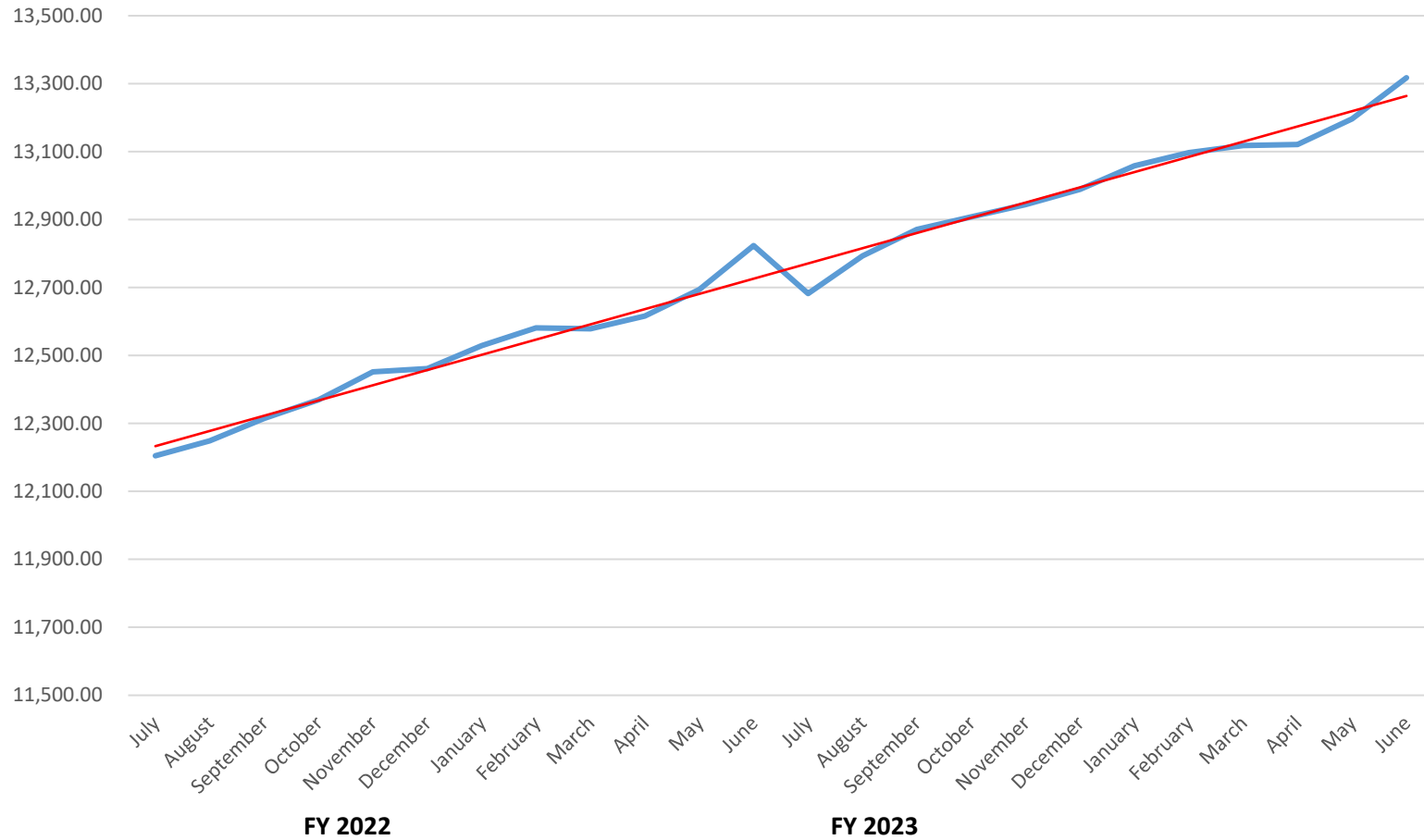


Figure 13: Total Contract and Grant Expenditures by Program Type and Source of Funds

Source of Funding		Research	Training	Fellowship	Other	Total	% of total
Federal Government	Department of Agriculture	11,025,162.10	4,322,389.83		2,390,823.96	17,738,375.89	3%
	Department of Commerce	18,869,956.42	938,980.36	25,753.18	10,295,127.11	30,129,817.07	6%
	Department of Defense - Air Force	8,989,624.11			211.20	8,989,835.31	2%
	Department of Defense - Army	2,936,351.85	585,689.72		5,390,328.05	8,912,369.62	2%
	Department of Defense - Navy	26,761,557.50	167,038.63		1,712,000.86	28,640,596.99	6%
	Department of Education	1,110,196.44	40,530,008.63		11,853,324.13	53,493,529.20	11%
	Department of Energy	5,954,680.43	4,773.70		123,046.30	6,082,500.43	1%
	Department of Health and Human Services	50,122,161.41	14,904,239.69		20,043,296.09	85,069,697.19	17%
	Department of Homeland Security	688,392.99	4,387,229.43		402,218.99	5,477,841.41	1%
	Department of Interior	10,620,384.74	158,779.34		1,685,290.27	12,464,454.35	2%
	Department of State	646,097.78	216,637.49		399,613.93	1,262,349.20	0%
	Department of the Treasury	943,101.31	51,300,000.01		2,046,230.56	54,289,331.88	11%
	Department of Transportation	2,216,103.85	202,688.94		686,055.68	3,104,848.47	1%
	Department of Veterans Affairs	31,721.57				31,721.57	0%
	Environmental Protection Agency	300,671.32	19,110.36		203,798.55	523,580.23	0%
	National Aeronautics and Space Administration	13,265,836.91	2,002,788.20		10,485,920.95	25,754,546.06	5%
	National Science Foundation	28,715,182.93	3,913,332.20	1,062,446.28	16,602,516.41	50,293,477.82	10%
	Other Department of Defense	20,988,875.66	2,247,607.03		756,114.52	23,992,597.21	5%
	Other Federal	1,409,150.79	65,754.27		5,224,187.77	6,699,092.83	1%
Federal Government Total		205,595,210.11	125,967,047.83	1,088,199.46	90,300,105.33	422,950,562.73	83%
Foreign Sources	Foreign Sources	2,229,552.01	459,141.27		1,163,847.28	3,852,540.56	1%
Foreign Sources Total		2,229,552.01	459,141.27	-	1,163,847.28	3,852,540.56	1%
State of Hawai'i	Hawai'i - Business and Other	859,079.84	1,642,020.32		308,469.82	2,809,569.98	1%
	Hawai'i - Department of Education		5,182,498.56		526,292.71	5,708,791.27	1%
	Hawai'i - Government Agencies	16,699,582.90	2,988,176.74		9,701,537.45	29,389,297.09	6%
	Hawai'i - Health Organizations	114,838.63	2,453,784.70		1,183,914.94	3,752,538.27	1%
	Hawai'i - Non- Profit Organizations	9,608,267.22	11,366,070.87		6,369,420.16	27,343,758.25	5%
State of Hawai'i Total		27,281,768.59	23,632,551.19	-	18,089,635.08	69,003,954.86	14%
Private Sources	Mainland - Business and Other	1,001,591.65	14,339.60		285,896.13	1,301,827.38	0%
	Mainland - Health Organizations	106,038.83	50,774.37		-	156,813.20	0%
	Mainland - Non-Profit Organizations	6,547,491.08	1,211,643.45		850,020.31	8,609,154.84	2%
	U.S. Colleges and Universities	408,232.19	42,124.70		545,076.04	995,432.93	0%
Private Sources Total		8,063,353.75	1,318,882.12	-	1,680,992.48	11,063,228.35	2%
Grand Total		243,169,884.46	151,377,622.41	1,088,199.46	111,234,580.17	506,870,286.50	100%

**Chart 14: Total FTE Paid from Contract and Grant Funds
Prior Year Comparison**

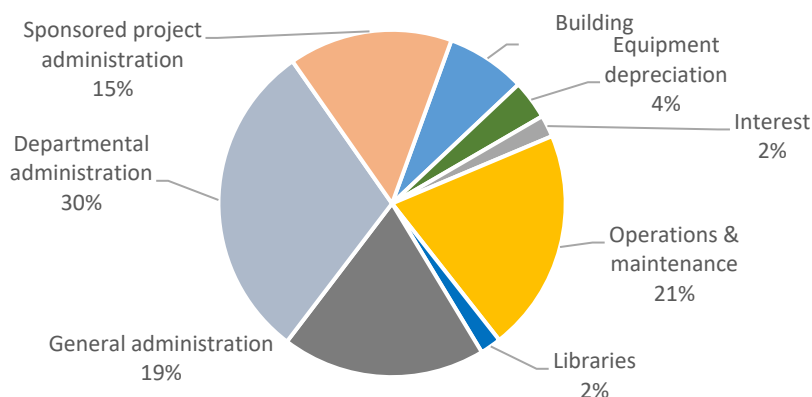


**Figure 14: Total FTE Paid from Contract and Grant Funds
Prior Year Comparison**

Month	Year to Date FY22	Year to Date FY23
July	12,205.01	12,681.99
August	12,248.45	12,793.00
September	12,314.23	12,870.79
Monthly Average Q1	12,255.90	12,781.93
October	12,369.34	12,907.88
November	12,451.86	12,943.88
December	12,461.17	12,989.03
Monthly Average Q2	12,427.46	12,946.93
January	12,528.71	13,058.11
February	12,580.88	13,097.01
March	12,578.46	13,117.83
Monthly Average Q3	12,562.68	13,090.98
April	12,616.05	13,120.72
May	12,693.78	13,196.20
June	12,823.15	13,317.66
Monthly Average Q4	12,710.99	13,211.53
Monthly Average FY	12,489.26	13,007.84
Change (Number)		518.58
Change (Percent)		4.15%

Note: FTE includes University of Hawai'i and Research Corporation of the University of Hawai'i

**Chart 15: Breakdown of Facilities and Administrative Costs
by Major Category FY 2016 Base Year**



In a typical year, roughly a third of the University of Hawai'i's overhead for sponsored projects maintains its facilities for supporting sponsored activity and roughly two-thirds supports central and departmental sponsored activity administration. About 30% of the total F&A represents administration of sponsored activity with schools, colleges, and research units. These funds are used by deans and directors to support fiscal administrators and other staff who assist faculty with sponsored activity – including grant proposal preparation and budget management.

The pie chart represents the proportion of actual overhead costs during the UH's last F&A base year (FY 2016). Thirty-four percent of the F&A funds represented costs of providing centralized research administration and compliance services, such as research accounting and analysis, human resources, payroll, purchasing, Office of Research Services, Human Studies, Institutional Animal Care, and Research Corporation of the University of Hawai'i. Of the 36% spent on facilities, about 58% was spent on operations and maintenance of existing sponsored activity space, including paying for such costs as utilities, hazardous materials disposal, and janitorial services. The remainder paid for repairs and renovations of buildings, 'debt service' (interest), major equipment replacement, and support for the libraries.

The University of Hawai'i received approximately \$74.0 million¹ in F&A cost reimbursements in FY 2023. Each campus received 75% of the recovered F&A generated by its faculty through the Research and Training Revolving Fund (RTRF) allocation. The PI's college or research unit at the University of Hawai'i at Mānoa generally receives 50% of the recovered F&A costs. These funds are used at the discretion of the chancellors, deans and directors to support research and training in their units.

F&A cost reimbursements are related to UH expenditures. When the UH develops its biennial budget, it starts with an estimate of the total revenues available for that biennium, including state funding, tuition, F&A cost reimbursement, and interest and investment income. All these funding sources are combined to pay for the UH's operating expenses, including F&A costs related to research and other sponsored agreements.

¹ The amount includes \$9.5 million from HEERF awards, which ended on 6/30/23.

Chart 16: Total Royalties Received from University Patents
Five Year Comparison
(in thousands)

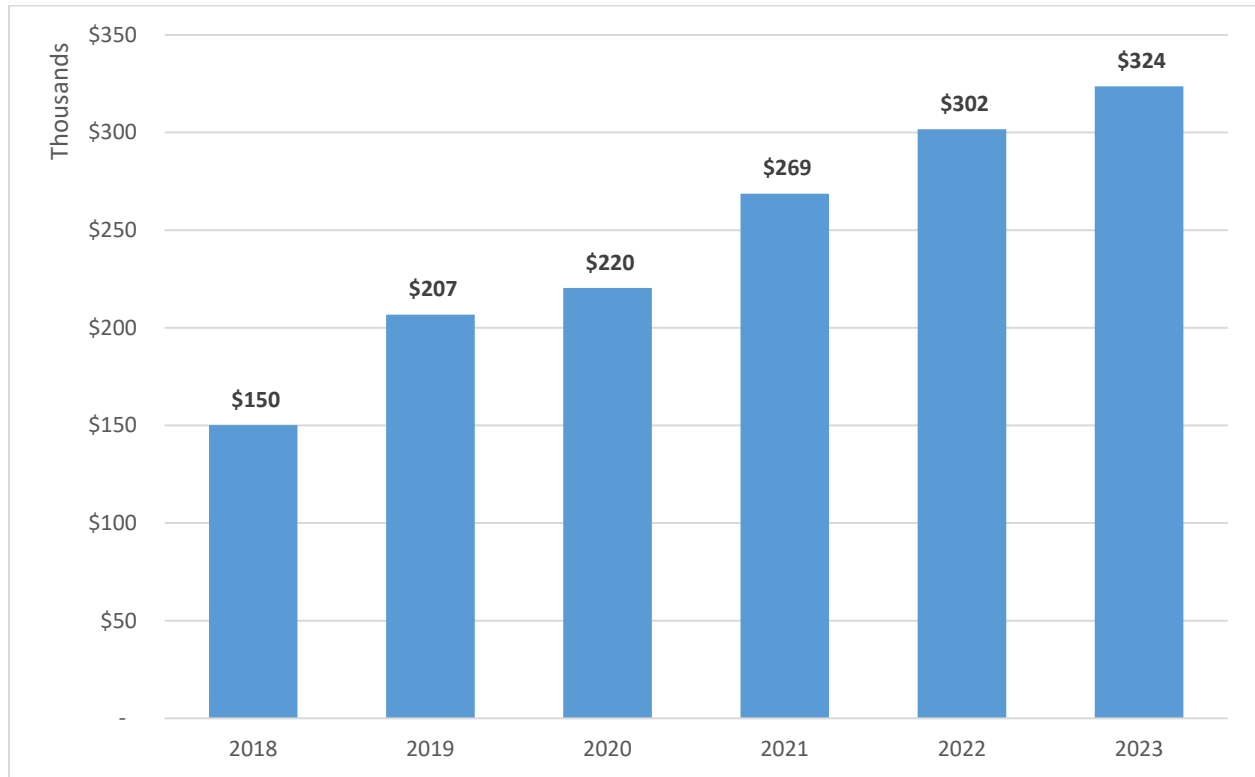


Figure 15: Total Royalties Received from University Patents
Five Year Comparison

Fiscal Year	Royalties
2018	\$150,172
2019	\$206,687
2020	\$220,427
2021	\$268,694
2022	\$301,658
2023	\$323,668
Total Royalties	\$1,471,306

Appendix 1: Extramural Award Sponsors

FEDERAL

DA-DEPT OF AGRICULTURE

AGRICULTURE, DEPT - ANIMAL AND PLANT
HEALTH INSPECTION SERVICE
AGRICULTURE, DEPT, FOREST SVC-FED
AGRICULTURE, DEPT-AGRI MARKETING SVC-FED
AGRICULTURE, DEPT-AGRI RSCH SVC-FED
AGRICULTURE, DEPT-FED
AGRICULTURE, DEPT-FOREIGN AGRICULTURAL
SERVICE
AGRICULTURE, DEPT-NATL INST FOOD AND
AGRICULTURE

DHHS-DEPT OF HEALTH AND HUMAN SERVICES

HEALTH & HUMAN SVC, DEPT- HRSA-FED BUREAU
OF HEALTH WORKFORCE (BHW)
HEALTH & HUMAN SVC, DEPT-ADM CHILD & FAM
(ACF)
HEALTH & HUMAN SVC, DEPT-ADMIN FOR COMM
LIVING
HEALTH & HUMAN SVC, DEPT-CTR DIS CTRL-FED
HEALTH & HUMAN SVC, DEPT-HLTH CARE RES &
QUALITY
HEALTH & HUMAN SVC, DEPT-HRSA-FED
HEALTH & HUMAN SVC, DEPT-HRSA-FED BUR OF
HLTH PROF
HEALTH & HUMAN SVC, DEPT-HRSA-FED
MATERNAL & CHILD HLTH
HEALTH & HUMAN SVC, DEPT-HRSA-FED OFC
RURAL HEALTH POL
HEALTH & HUMAN SVC, DEPT-NIH-FED
HEALTH & HUMAN SVC, DEPT-NIH-FED NATL
CANCER INST
HEALTH & HUMAN SVC, DEPT-NIH-FED NATL
HEART LUNG & BLD INST
HEALTH & HUMAN SVC, DEPT-NIH-FED NATL INST
MIN HLTH & DISP
HEALTH & HUMAN SVC, DEPT-NIH-FED NTL INST
ALLERGY/INF DIS
HEALTH & HUMAN SVC, DEPT-NIH-FED NTL INST
DIAB DIG KIDN DIS
HEALTH & HUMAN SVC, DEPT-NIH-FED NTL INST
DRUG ABUSE
HEALTH & HUMAN SVC, DEPT-NIH-FED NTL INST
GEN MED SCI
HEALTH & HUMAN SVC, DEPT-NIH-FED NTL INST
ON AGING

HEALTH & HUMAN SVC, DEPT-NIH-FED OFFICE OF
DIRECTOR

HEALTH & HUMAN SVC, DEPT-OFC OF ASST
SECRETARY FOR HEALTH
HEALTH & HUMAN SVC, DEPT-SUB ABUSE/MNTL
HLTH SVC-FED
HEALTH & HUMAN SVC, DEPT-NIH-FED NTL INST
CHLD HLTH&HUM DEV
HEALTH&HUMAN SVC, DEPT-NIH-FED NTL INST
BIOMED IMG& BIOENGRG

DOC-DEPT OF COMMERCE

COMMERCE, DEPT-ECONOMIC DEV ADM-FED
COMMERCE, DEPT-MINORITY BUSN DEV AGENCY-
FED
COMMERCE, DEPT-NATL NOAA-FED
COMMERCE, DEPT-NATL NOAA-FED NATL OCEAN
SVC
COMMERCE, DEPT-NATL NOAA-FED SEA GRANT
COLL PGM
COMMERCE, DEPT-NOAA/NATL MARINE
FISHERIES SVC

DOD-DEPARTMENT OF DEFENSE

DEFENSE, DEPT- US ARMY CORPS OF ENGINEERS
DEFENSE, DEPT. - NAVAL AIR WARFARE CENTER
AIRCRAFT DIVISION
DEFENSE, DEPT. - U.S. ARMY RESEARCH OFFICE
DEFENSE, DEPT-ADVANCED RSCH PRJ AGCY
DEFENSE, DEPT-AIR FORCE OFC OF SCI RSCH
DEFENSE, DEPT-AIR FORCE RESEARCH
LABORATORY
DEFENSE, DEPT-ARMY ENG RSCH & DEV CTR
DEFENSE, DEPT-ARMY MED RSCH ACQSTN
(USAMRAA)
DEFENSE, DEPT-DEFENSE LOGISTICS AGENCY
DEFENSE, DEPT-EDUCATION ACTIVITY
DEFENSE, DEPT-NATIONAL SECURITY AGY
DEFENSE, DEPT-NAVSEA PMS 340
DEFENSE, DEPT-NAVY NAVAL FAC ENGRG
COMMAND
DEFENSE, DEPT-NAVY NAVAL INFORMATION
WARFARE CENTER PACIFIC
DEFENSE, DEPT-NAVY NAVAL SEA SYS CMD
DEFENSE, DEPT-NAVY NAVAL SURFACE WARFARE
CTR
DEFENSE, DEPT-NAVY OFC OF NAVAL RSCH

DEFENSE, DEPT-NAVY US NAVAL OBSERVATORY
DEFENSE, DEPT-THREAT REDUCTION AGCY
DEFENSE, DEPT-UNITED STATES INDO-PACIFIC
COMMAND
DEFENSE, DEPT-WASHINGTON HEADQUARTERS
SVCS

DOE-DEPT OF ENERGY

ENERGY, DEPT

ENERGY, DEPT OF - OFFICE OF SCIENCE

DOI-DEPT OF INTERIOR

INTERIOR, DEPT-BUREAU LAND MGMT-FED

INTERIOR, DEPT-FISH & WILDLIFE SVC

INTERIOR, DEPT-NATIONAL PARK SVC

INTERIOR, DEPT-UNITED STATES GEO SURVEY

DOS- DEPT OF STATE

STATE, DEPT-US AGENCY INTL DEV-FED USAID

DOT-DEPT OF TRANSPORTATION

TRANSPORTATION, DEPT-FED-FED AVIATION
ADMIN

ED-DEPT OF EDUCATION

EDUCATION, DEPT-FED

EDUCATION, DEPT-FED FULBRIGHT HAYS PGM

EDUCATION, DEPT-FED INTL & FOREIGN LANG ED

EDUCATION, DEPT-FED OFC OF ELEM & SEC EDU

EDUCATION, DEPT-FED OFC OF POSTSEC ED

EDUCATION, DEPT-FED OFC OF SPECIAL ED &
REHAB SVCS

EDUCATION, DEPT-FED REHAB SVCS ADMIN

EDUCATION, DEPT-FED STUDENT SUPP SVCS PGM

EDUCATION, DEPT-FED TALENT SEARCH PGM

EDUCATION, DEPT-FED TITLE 1 PERKINS

**NASA-NATIONAL AERONAUTICS AND SPACE
ADMINISTRATION**

NATIONAL AERONAUT & SPACE ADM

NSF- NATIONAL SCIENCE FOUNDATION

NATIONAL SCIENCE FOUNDATION

OTHER FEDERAL AGENCIES

AGRICULTURE, DEPT-OFFICE OF PARTNERSHIPS
AND PUBLIC ENGAGEMENT

AGRICULTURE, DEPT-RURAL DEVELOPMENT
CORPORATION FOR NATIONAL AND COMMUNITY
SERVICE

FEDERAL COMMUNICATIONS COMMISSION

HOMELAND SECURITY, DEPT-FEMA

INSTITUTE OF MUSEUM AND LIBRARY SERVICES

MARINE MAMMAL COMMISSION
NATIONAL ENDOWMENT FOR THE HUMANITIES
PEACE CORPS

SMALL BUSINESS ADMINISTRATION

SOCIAL SECURITY ADMINISTRATION

UNITED STATES BOTANIC GARDEN

NON-FEDERAL

FOREIGN

ACADEMY KOREAN STUDIES

AMERICAN SAMOA COMMUNITY CANCER
COALITION

AMERICAN SAMOA POWER AUTHORITY

AMERICAN SAMOA, GOVERNMENT

AUCKLAND UNISERVICES LIMITED

AUSTRALIAN MUSEUM

BRITISH COUNCIL

CHUO UNIVERSITY

COMMONWEALTH OF NO MARIANA ISLANDS

CURTIN UNIVERSITY

DELIGHTEX PTE. LTD.

FEDERATED STATES MICRONESIA

FREEDIVE PICTURES LIMITED

GEORG-AUGUST-UNIVERSITAT GOTTINGEN
(UNIVERSITY OF GOTTINGEN)

GUAM, UNIVERSITY OF

INSTITUT DE LA CORROSION

INTERNATIONAL ORGANIZATION FOR MIGRATION

KOREA FOUNDATION

KOREA INSTITUTE OF OCEAN SCIENCE &
TECHNOLOGY

KOREA MANAGEMENT ASSOCIATION

MARINE AND ENVIRONMENTAL RESEARCH

INSTITUTE OF POHNPEI

MARSHALL ISLANDS NATIONAL WEATHER SERVICE
OFFICE

MELBOURNE, THE UNIVERSITY OF

NATIONAL CENTRAL UNIVERSITY TAIWAN

NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL
SCIENCE AND TECHNOLOGY

NAURU OCEAN RESOURCES INC.

REPUBLIC MARSHALL ISLANDS

REPUBLIC PALAU

SENDAI UNIVERSITY

SIMON FRASER UNIVERSITY

SYDNEY, UNIVERSITY OF
TAIPEI ECONOMIC AND CULTURAL OFFICE IN
HONOLULU

TORONTO, UNIVERSITY OF
VIIV HEALTHCARE

HAWAII- BUSINESS AND OTHER

AHA PUNANA LEO INC
ALU LIKE INC
DAMIEN MEMORIAL SCHOOL
EAST WEST CENTER DBA OF CCTI B/W EAST AND
WEST, INC.
HANAHAUOLI SCHOOL
HAWAII AGRICULTURE RESEARCH CENTER
HAWAII COUNCIL FOR THE HUMANITIES
HAWAIIAN SHELLFISH, LLC
HUI NO KE OLA PONO, INC.
INTERNATIONAL ARCHAEOLOGY, LLC
IOLANI SCHOOL
KAMEHAMEHA SCHOOLS
KE KULA 'O NAWAHIOKALANI'OPU'U IKI PUBLIC
CHARTER SCHOOL
MAKAI OCEAN ENGINEERING INC
MALAMA KAHALAWAI INC
MAUI COUNTY COMMUNITY TELEVISION
NALU SCIENTIFIC, LLC
OCEAN ERA, LLC
'OHU 'OHU KO'OLAU INC
PACIFIC RADIATION ONCOLOGY INC
PACMAR TECHNOLOGIES LLC
PAPA OLA LOKAHI
RESEARCH CORPORATION UNIV HI (RCUH)
SPECTRUM PHOTONICS, INC
WASTEWATER ALTERNATIVES AND INNOVATIONS

HAWAII- DEPT OF EDUCATION

EDUCATION, DEPT-HI

HAWAII- GOVERNMENT AGENCIES

ACCOUNTING & GEN SVC, DEPT (DAGS) - HI
AGRICULTURE, DEPT-HI
AGRICULTURE, DEPT-HI AQUACULTURE DEV PGM
CITY & COUNTY HONOLULU
CITY & COUNTY HONOLULU DEPT OF PARKS & REC
COUNTY KAUAI
COUNTY MAUI

COUNTY MAUI OFC OF ECON DEVEL
COUNTY MAUI OFFICE OF CLIMATE CHANGE,
RESILIENCY AND SUSTAINABILITY
COUNTY MAUI PLANNING DEPT
COUNTY OF HAWAII DEPT OF RESEARCH AND
DEVELOPMENT
DEFENSE, DEPT-HI
DEFENSE, DEPT-HI - HI ARMY NATL GUARD
DEFENSE, DEPT-HI-HAWAII EMERGENCY MGMT
AGENCY
EDUCATION, DEPT-HI - KAILUA HIGH SCHOOL
GOVERNOR, OFFICE OF - STATE OF HAWAII
GOVERNOR, OFFICE OF-HI-EXEC OFFICE ON EARLY
LEARNING
HAWAII OFFICE OF WELLNESS AND RESILIENCE
HAWAI'I STATE FOUNDATION ON CULTURE AND
THE ARTS
HAWAIIAN HOME LANDS, DEPT-HI
HEALTH, DEPT-HI
HEALTH, DEPT-HI - ADULT MENTAL HTH DV
HEALTH, DEPT-HI - ALCOHOL & DRUG ABUSE DIV
HEALTH, DEPT-HI - CHILD/ADOLESC MENTAL HLTH
DIV
HEALTH, DEPT-HI - CHRONIC DISEASE
PREVENTION & HEALTH PROMOTION DIV
HEALTH, DEPT-HI - EXEC OFF AGING
HEALTH, DEPT-HI - FAMILY HLTH SVC DIV
HEALTH, DEPT-HI - HARM REDUCTION SERVICES
BRANCH
HEALTH, DEPT-HI - HAZARD EVAL & EMERGENCY
RESPONSE
HEALTH, DEPT-HI - MATERNAL AND CHILD
HEALTH BRANCH
HEALTH, DEPT-HI - OFFICE OF LANGUAGE ACCESS
HUMAN SERVICES, DEPT-DIVISION OF
VOCATIONAL REHABILITATION
HUMAN SERVICES, DEPT-HI
HUMAN SERVICES, DEPT-HI BENEFITS,
EMPLOYMENT & SUPPORT SERVICES
HUMAN SERVICES, DEPT-HI-MED-QUEST DIV
HUMAN SERVICES, DEPT-OYS-HI
JUDICIARY-HI
LABOR & INDUSTRIAL RELATION, DEPT-HI (DLIR)
LAND & NATURAL RES, DPT (DLNR)-COMMISSION
ON WATER RESOURCE MANAGEMENT
LAND & NATURAL RES, DPT (DLNR)-
CONSERVATION & RESOURCES ENFORCEMENT
DIV

LAND & NATURAL RES, DPT-AQUAT (DLNR)
LAND & NATURAL RES, DPT-BOATING & OCEAN
REC (DLNR)
LAND & NATURAL RES, DPT-FORST (DLNR)
LAND & NATURAL RESOURCES, DEPT (DLNR)
LAND & NATURAL RESOURCES, DEPT (DLNR)
ENGINEERING DIV
LAND & NATURAL RESOURCES, DEPT (DLNR) OFC
CONS COAST LDS
STATE OF HAWAII, OFFICE OF PLANNING AND
SUSTAINABLE DEVELOPMENT
TRANSPORTATION, DEPT-HI
WATER SUPPLY, BOARD OF

HAWAII- HEALTH ORGANIZATIONS

HAWAII PACIFIC HEALTH
HAWAII PACIFIC HEALTH MEDICAL GROUP
KALIHI-PALAMA HEALTH CENTER
KAPIOLANI MED CTR FOR WOMEN & CHILDREN
KAPIOLANI MEDICAL SPECIALIST
KUAKINI MEDICAL CENTER
PACIFIC IN VITRO FERTILIZATION INSTITUTE
QUEENS HEALTH SYSTEMS
QUEEN'S MEDICAL CENTER
STRAUB CLINIC & HOSPITAL
UNIVERSITY CLINICAL EDUCATIONAL & RSCH
ASSOC (UCERA)

HAWAII- NON-PROFIT ORGANIZATIONS

ALOHA INDEPENDENT LIVING HAWAII
AMERICAN ASSOCIATION OF UNIVERSITY WOMEN
- HONOLULU
BANQUET SOLUTIONS HAWAII, INC.
BIG ISLAND RESOURCE CONSERVATION & DEV
COUNCIL INC.
CEEDS OF PEACE
CHUN FOUNDATION
COLLABORATIVE SUPPORT SERVICES, INC.
CONSUELO ZOBEL ALGER FOUNDATION
EPIC OHANA, INC.
GENERAL CONTRACTORS ASSOC HI EDUCATIONAL
FOUNDATION
HANALANI SCHOOLS
HAWAII CANCER CONSORTIUM
HAWAII CHILDREN'S ACTION NETWORK
HAWAII COMMUNITY FOUNDATION (HCF)
HAWAII COMMUNITY FOUNDATION GEIST FDTN

HAWAII COMMUNITY FOUNDATION INGEBORG
VF MCKEE FUND
HAWAII COMMUNITY FOUNDATION MEDICAL
RESEARCH
HAWAII COMMUNITY FOUNDATION STRAUB
TRUST ESTATE
HAWAII CONSERVATION ALLIANCE FOUNDATION
HAWAII DENTAL SERVICE FOUNDATION
HAWAII PUBLIC HEALTH INSTITUTE
HAWAII STATE RURAL HEALTH ASSOCIATION
HAWAIIKIDSCAN
HUI HO'OLAKO FOR HAWAIIAN INITIATIVES
I OLA LAHUI
INSTITUTE FOR HUMAN SERVICES
KOKUA KALIHI VALLEY
KULA NO NA PO'E HAWAII
MALAMA MAUNALUA
MID ATLANTIC ARTS FOUNDATION (INC)
NA AIKANE O MAUI, INC.
NATIONAL TROPICAL BOTANICAL GARDEN
NORTH SHORE COMMUNITY LAND TRUST
OLELO
PACIFIC ISLAND HEALTH OFFICERS ASSOCIATION
PARTNERS IN CARE - OAHU CONTINUUM OF CARE
POLYNESIAN VOYAGING SOCIETY
RESIDENTIAL YOUTH SERVICES & EMPOWERMENT
THE OUTDOOR CIRCLE
THREE MOUNTAIN ALLIANCE FOUNDATION
UNIVERSITY HAWAII FOUNDATION
UNIVERSITY HEALTH PARTNERS
WAIKIKI BEACH SPECIAL IMPROVEMENT DISTRICT
ASSN
WOMEN'S FUND OF HAWAII
WORLD TURTLE TRUST

MAINLAND- BUSINESS AND OTHER

ABT ASSOCIATES INC
ALTOR BIOSCIENCES
AMERICA VIEW
AMERICAN LIGHTWEIGHT MATERIALS
MANUFACTURING INNOVATION
AMERICAN MEDICAL ASSOCIATION
BIOMASS ENERGY SYSTEMS INC.
BROOKHAVEN NATIONAL LABORATORY
DAI GLOBAL, LLC

DELOITTE & TOUCHE LLP
 ELI LILLY & COMPANY
 ENVIRONMENTAL DEFENSE
 ESSENTIAL ACCESS HEALTH
 FAR WEST ATHLETIC TRAINERS' ASSOCIATION
 FRANKLIN COUNTY PUBLIC HEALTH
 GILEAD FOUNDATION - GILEAD SCIENCES INC
 GOODMAN TECHNOLOGIES, LLC
 HDRE2M
 ICF INCORPORATED, LLC
 IMPOSSIBLE SENSING LLC
 INTEGRATED DEPOSITION SOLUTIONS, INC.
 JET PROPULSION LAB-JPL
 KAHEAWA WIND POWER LLC
 KYMANETICS, INC.
 LEIDOS
 LEIDOS BIOMEDICAL RESEARCH, INC.
 LUNA LABS USA LLC
 NATIONAL CONFERENCE OF STATE LEGISLATURES
 NATIONAL GEOGRAPHIC SOCIETY
 NUVERA FUEL CELLS, LLC
 PUEBLO OF JEMEZ DEPARTMENT OF EDUCATION
 SALIOGEN THERAPEUTICS, INC.
 SANDIA NATIONAL LABORATORIES
 SMITHSONIAN ASTROPHYSICAL OBSERVATORY
 SOLIGENIX, INC.
 SPACE TELESCOPE SCIENCE INSTITUTE
 SYNOPTIC DATA PBC
 TETRA TECH, INC.
 US ACUTE CARE SOLUTIONS
 UT-BATTELLE, LLC
 WOODS HOLE OCEANOGRAPHIC INSTITUTION

MAINLAND- HEALTH ORGANIZATIONS

AMERICAN HEART ASSOCIATION
 AMERICAN LUNG ASSN
 BETH ISRAEL DEACONESS MEDICAL CENTER
 CHILDREN'S HOSPITAL OF PHILADELPHIA
 FRED HUTCHINSON CANCER CENTER (FHCC)

MAINLAND- NON-PROFIT ORGANIZATIONS

ALLIANCE FOR SUSTAINABLE ENERGY, LLC
 AMERICAN ASSN OF COMM COLLEGES
 AMERICAN ASSN OF UNIVERSITY WOMEN

AMERICAN FOUNDATION FOR PHARMACEUTICAL
 EDUCATION
 ASSOCIATION OF UNIVERSITIES FOR RESEARCH IN
 ASTRONOMY, INC.
 BATTELLE MEMORIAL INSTITUTE
 BAY AREA ENVIRONMENTAL RESEARCH INSTITUTE
 BIOMADE
 BOSTON MEDICAL CENTER CORPORATION
 BURROUGHS WELLCOME FUND
 CASCADIA RESEARCH COLLECTIVE
 CEDARS-SINAI MEDICAL CENTER
 CHOLANGIOCARCINOMA FOUNDATION
 COMMONWEALTH OF NORTHERN MARIANAS
 ISLANDS-COMMONWEALTH HEALTHCARE
 CORPORATION
 CONCORD CONSORTIUM, INC.
 DONALD DANFORTH PLANT SCIENCE CENTER
 DUKE UNIVERSITY
 GEORGIA TECH APPLIED RESEARCH
 CORPORATION
 H. LEE MOFFITT CANCER CENTER AND RESEARCH
 INSTITUTE, INC.
 HENRY M. JACKSON FOUNDATION FOR THE
 ADVANCEMENT OF MILITARY MEDICINE
 HUMAN SERVICES RESEARCH INSTITUTE
 INSTITUTE INTERNATIONAL EDUCATION
 JOHNSON (ROBERT WOOD) FOUNDATION
 LINK FOUNDATION
 MATHEMATICAL ASSOCIATION OF AMERICA
 MITRE CORPORATION
 MOTT (CHARLES STEWART) FOUNDATION
 NATIONAL FISH & WILDLIFE FOUNDATION
 NATIONAL FOUR-H COUNCIL (4-H)
 NATIONAL SHEEP INDUSTRY IMPROVEMENT
 CENTER
 NIA TERO FOUNDATION
 RTI INTERNATIONAL
 SCHMIDT FAMILY FOUNDATION / SCHMIDT
 MARINE TECHNOLOGY PARTNERS
 SIMONS FOUNDATION
 SOCIETY FOR PUBLIC HEALTH EDUCATION
 STEM NEXT OPPORTUNITY FUND
 THE HOPE FOUNDATION FOR CANCER RESEARCH
 UNITED STATES VETERANS INITIATIVE
 UNIVERSITIES SPACE RESEARCH ASSN

WESTERN STATES ART FEDERATION (WESTAF)
WGBH EDUCATIONAL FOUNDATION
WORLD LEARNING INC.

US COLLEGES AND UNIVERSITIES

ALABAMA, UNIVERSITY OF
ALASKA FAIRBANKS, UNIVERSITY OF
ARIZONA STATE UNIVERSITY
ARIZONA, UNIVERSITY OF
AUBURN UNIVERSITY
BAYLOR COLLEGE OF MEDICINE
BD OF REGENTS OF UNIVERSITY SYS OF GA-
GEORGIA INSTITUTE OF TECHNOLOGY
BOISE STATE UNIVERSITY
BOWLING GREEN STATE UNIVERSITY
CALIFORNIA BERKELEY, UNIVERSITY OF
CALIFORNIA DAVIS, UNIVERSITY OF
CALIFORNIA INST OF TECHNOLOGY
CALIFORNIA LOS ANGELES, UNIV
CALIFORNIA RIVERSIDE, UNIVERSITY OF
CALIFORNIA SAN DIEGO, UNIV
CALIFORNIA SAN FRANCISCO, UNIV
CALIFORNIA SANTA BARBARA, UNIV
CALIFORNIA SANTA CRUZ, UNIV
CALIFORNIA STATE UNIVERSITY, CHICO
CALIFORNIA, UNIVERSITY OF-DIV OF
AGRICULTURE & NATURAL RESOURCES
CHAMINADE UNIVERSITY
COLORADO DENVER, UNIVERSITY OF
COLORADO STATE UNIVERSITY
COLUMBIA UNIVERSITY
CONNECTICUT, UNIVERSITY OF
CORNELL UNIVERSITY
FLORIDA STATE UNIVERSITY
FLORIDA, UNIVERSITY OF
GEORGE WASHINGTON UNIVERSITY
GEORGIA INSTITUTE OF TECHNOLOGY
HASKELL FOUNDATION
HAWAII PACIFIC UNIVERSITY
IDAHO, UNIVERSITY OF
INDIANA UNIVERSITY
IOWA STATE UNIVERSITY
JOHNS HOPKINS UNIVERSITY
KANSAS STATE UNIVERSITY

LOUISIANA STATE UNIVERSITY-HEALTH SCIENCES
CENTER
MARYLAND, UNIVERSITY OF
MASSACHUSETTS INSTITUTE OF TECH
MICHIGAN STATE UNIVERSITY
MICHIGAN, UNIVERSITY OF
MINNESOTA, UNIVERSITY OF
MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI, UNIVERSITY OF
MONTANA STATE UNIVERSITY
MORAIN VALLEY COMMUNITY COLLEGE
MOREHOUSE SCHOOL OF MEDICINE
NEW HAMPSHIRE, UNIVERSITY OF
NEW MEXICO, UNIVERSITY OF - BOARD OF
REGENTS
NORTHEASTERN UNIVERSITY
NOTRE DAME, UNIVERSITY OF
OHIO STATE UNIVERSITY
OREGON HEALTH SCIENCES UNIVERSITY
OREGON STATE UNIVERSITY
OREGON, UNIVERSITY OF
PENNSYLVANIA STATE UNIVERSITY
PITTSBURGH, UNIVERSITY OF
PRINCETON UNIVERSITY
PURDUE UNIVERSITY
RENSSELAER POLYTECHNIC INSTITUTE
ROCHESTER INSTITUTE OF TECHNOLOGY
SOUTH CAROLINA, MEDICAL UNIVERSITY
SOUTH CAROLINA, UNIVERSITY OF
SOUTHERN CALIFORNIA, UNIVERSITY OF
STANFORD UNIVERSITY
STATE UNIVERSITY OF NEW YORK-BINGHAMTON
UNIVERSITY
TEXAS A&M UNIVERSITY
TEXAS AUSTIN, UNIVERSITY OF
THE CATHOLIC UNIVERSITY OF AMERICA
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE
CITY OF NEW YORK
THE UNIVERSITY OF TENNESSEE HEALTH SCIENCE
CENTER
UNIVERSITY OF ARKANSAS FOR MEDICAL
SCIENCES
UNIVERSITY OF CHICAGO

UNIVERSITY OF DELAWARE
UNIVERSITY OF NORTH TEXAS HEALTH SCIENCES
CENTER AT FORT WORTH
UNIVERSITY OF SOUTH ALABAMA
UTAH, UNIVERSITY OF
VANDERBILT UNIVERSITY MEDICAL CENTER
VIRGINIA COMMONWEALTH UNIVERSITY
WAKE FOREST UNIVERSITY HEALTH SCIENCES
WASHINGTON STATE UNIVERSITY
WASHINGTON UNIVERSITY (ST LOUIS, MO)
WASHINGTON, UNIVERSITY OF
WEILL MEDICAL COLLEGE OF CORNELL
UNIVERSITY