
Report on
Hawaii Tax Credit for Research Activities
for Tax Year 2019

August 2020

Department of Business, Economic Development and Tourism

State of Hawaii





This report fulfills the reporting requirements of Act 270, Hawaii Revised Statutes, 2013 and was prepared by the Research and Economic Analysis Division headed by Dr. Eugene Tian, Division Administrator. The report was prepared by Dr. Yang-Seon Kim, Research and Statistics Officer.

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Executive Summary

- A total of ten Qualified High Technology Businesses (QHTBs) completed the survey with the State Department of Business, Economic Development and Tourism (DBEDT) for the Hawaii research tax credit for tax year 2019. The ten QHTBs reported that they spent a combined total of \$22.4 million in research activities in Hawaii in 2019. Among those, \$20.7 million (92.3 %) was eligible for the research tax credit, and a total of \$1.6 million was claimed or to be claimed for the research tax credit in the State of Hawaii tax form N346.
- Among the ten QHTBs that completed the survey with DBEDT for tax year 2019, all except one were established before 2010 and have been undertaking the research activities for at least seven years.
- A total of 66 patents were owned or filed by seven QHTBs as of December 2019 (39 owned, 27 pending). Four QHTBs reported that they didn't own any type of intellectual property as of December 2019.
- “Defense/Aerospace” and “Information/Communication Technology” were the most popular business sectors among the QHTBs hosting three QHTBs each in the sector. Other business sectors that hosted at least two QHTBs in 2019 include “Biotechnology/Life Sciences”, “Ocean Sciences”, and “Construction/Architecture”.
- In 2019, the ten QHTBs generated a combined total of \$101 million revenue from all goods and services produced in Hawaii, of which 54.3 percent (\$54.8 million) was derived from out-of-state sales or activities. About 30 percent of the total revenue was earned from intellectual properties that QHTBs produced in Hawaii.
- The ten QHTBs spent a combined total of \$87.1 million in 2019 as operating expenses or capital expenditures for sales and activities performed in Hawaii. About two third of the spending occurred in two sectors, “Defense/Aerospace” and “Film/Digital Media”. “Defense/Aerospace sector” received 35.6 percent (\$31.0 million) of the spending while “Film/Digital Media sector” received another 30.2 percent (\$26.3 million) of the spending.

- As of December 2019, the ten QHTBs employed a total of 437 regular employees (403 full-time and 34 part-time employees) together. About three out of four regular employees were employed in research activities.
- Over 75 percent of full-time employees in the QHTBs were paid \$60,000 and more annually, of which about half were paid more than \$100,000 annually.
- The combined number of jobs in the ten QHTBs showed a substantial increase in 2019 from the prior year. It is the third year since this new research activity tax credit was introduced in 2013 that the survey showed an increase in the combined total jobs in the QHTBs. A job increase was observed both in research and non-research positions, and both full-time and part-time positions.
- Eight QHTBs reported that they had independent contractor expenses in 2019. The eight QHTBs spent a combined total of \$11.2 million to hire or procure 189 contractors or external services for jobs performed in Hawaii in 2019. Majority of this spending was spent in the area of “Scientific and Technical Contract Services”.
- According to the State Department of Taxation, fifteen claims (including corporations and individuals) were processed as of August 10, 2020 for the state research tax credit for tax year 2019. The total amount of the fifteen claims was \$1.04 million.
- The complete statistics of the research activity tax credit claimed with the State Department of Taxation are now available for tax year 2013 to 2018. Compared with the credit amount reported in the survey with DBEDT, the credit amount claimed with the State Department of Taxation were about 70 percent to 165 percent bigger in all years except the first year. It suggests that not all businesses that claimed the tax credit with the State Department of Taxation completed the DBEDT survey.

Table S1. Summary statistics on the characteristics and activities of QHTBs that submitted the DBEDT survey

	2019 tax year	2018 tax year	2017 tax year	2016 tax year	2015 tax year	2014 tax year	2013 tax year
Number of QHTBs submitted TCRA survey	10 ¹	14	15	11	12	13	10
Total Tax credit claimed for Hawaii TCRA	\$1.6 M	\$1.4 M	\$1.3 M	\$1.3 M	\$1.1 M	\$1.3 M	\$1.1 M
Total Research expense incurred in Hawaii	\$22.4 M	\$19.9 M	\$23.4 M	\$23.1 M	\$20.1 M	\$28.1 M	\$25.7 M
Avg. TCRA tax credit claimed per QHTB	\$165 K	\$99 K	\$86 K	\$122 K	\$89 K	\$100 K	\$109 K
Top three areas of research ²	Computer software Biotechnology Ocean science	Computer software Non-fossil fuel Ocean science	Computer software Non-fossil fuel Ocean science	Computer software Non-fossil fuel Ocean science	Computer software Non-Fossil fuel Ocean science	Computer software Biotechnology Ocean sciences	Computer software Biotechnology Ocean sciences & Non-fossil fuel
Business/Revenue/Expense							
Top three areas of businesses ²	Defense/Aerospace Info./Comm. Tech. Biotech/Life scie. Ocean science Architecture	Defense/Aerospace Info./Comm. Tech. Biotech/Life scie.	Ocean science Defense/Aerospace Energy	Ocean science Defense/Aerospace Energy Info./Comm. Tech	Energy Ocean science Defense/Aerospace Info./Comm. Tech.	Defense/Aerospace Energy Other Sciences	Defense/Aerospace Biotech/Life scie. Info./Comm. Tech.
Total number of patents owned or filed	66	93	137	105	116	158	107
Avg. Revenue per QHTB	\$10.1 M	\$5.8 M	\$5.1 M	\$6.1 M	\$3.9 M	\$4.0 M	\$5.4 M
% of revenue from out of state sales	54.3 %	39.8 %	40.5 %	49.6 %	70.3 %	65.2 %	66.2 %
% of revenue from intellectual properties	29.3 %	48.4 %	45.6 %	61.3 %	32.5 %	23.4 %	30.0 %
Avg. Operating expenses per QHTB	\$8.6 M	\$4.7 M	\$4.3 M	\$4.2 M	\$3.2 M	\$3.4 M	\$4.3 M
Avg. Capital expenditure per QHTB ³	\$146 K	\$101 K	\$150 K	\$75 K	\$59 K	\$26 K	\$247 K
Employment⁴							
Total number of employees	437	358	391	330	270	297	338
Avg. number of employees per QHTB	43.7	25.6	26.1	30.0	22.5	22.8	33.8
Research jobs as % of total jobs	76.0 %	75.7 %	73.7 %	76.9 %	72.6 %	78.5 %	77.2 %
Full time jobs as % of total jobs	92.2 %	95.8 %	95.4 %	93.0 %	91.1 %	86.9 %	82.8 %
% of jobs with wage \$60K or higher	73.5 %	74.0 %	74.4 %	74.2 %	76.3 %	78.5 %	71.7 %
% of jobs with wage \$100K or higher	35.5 %	39.9 %	37.1 %	34.2 %	41.5 %	39.4 %	31.7 %
Change in total jobs from last year	130 (42.3 %)	34 (10.5 %)	-30 (-7.1 %)	-25 (-7.0 %)	-14 (-4.9 %)	18 (6.5 %)	-20 (-6.0 %)
Change in research jobs from last year	108 (48.2 %)	25 (10.2 %)	-17 (-5.6 %)	-25 (-9.0 %)	-13 (-6.2 %)	24 (11.5 %)	-7 (-2.8 %)

1. All QHTBs have completed the research tax credit survey in at least one tax year since 2013 (see Table A-1).

2. Based on the number of QHTBs allowing multiple counting of multi-sect companies.

3. Capital expenditure includes land, construction, and equipment purchase.

4. Includes both full-time and part-time jobs but doesn't include temporary or seasonal jobs.

1. Introduction

Many states have been implementing a state research tax credit in conjunction with the federal research tax credit, to further promote research activities of businesses in the state.

Hawaii's effort to encourage research activities through tax incentives started as early as 1999. Act 178 in 1999 contained a state tax credit for research activities. However, the tax credit was limited to 2.5% of new research expenses in Hawaii and was non-refundable.

Benefits of the Hawaii research tax credit increased substantially in 2000, when Act 297 raised the Hawaii research tax credit from 2.5% to 20% of the qualified research expenses to match the federal standard and made the credit refundable. Act 221 in 2001 further augmented the benefits by allowing the credit to be claimed for all qualified research expenses, not just the incremental amount. Hawaii research tax credit was amended once more in 2004 when Act 215 limited credit eligibility to qualified high technology businesses (QHTBs) only. This old research tax credit sunsetted in 2010.

Act 270, Session Laws of Hawaii 2013, re-established Hawaii's research tax credit for tax year from 2013 to 2019. The credit remains to be 20% of the qualified research expenditures and continues to be refundable. However, it defined QHTBs more narrowly and adopted federal rules again for eligibility, which means that qualified research expenses are limited to incremental amounts only.

Act 270 also enhanced reporting requirements. It mandated all QHTBs that claim the state research credit to complete an annual survey with DBEDT. Based on the survey result, DBEDT is required to submit a report to the legislature on the activities of the QHTBs to measure the effectiveness of the research tax credit.

This is the seventh report that is prepared pursuant to Act 270. This report includes statistics on various activities of QHTBs that completed the research activity tax credit survey with DBEDT for their taxable year 2019. Most statistics reported in this report are for activities undertaken in calendar year 2019.

2. Characteristics of QHTBs

For tax year 2019, a total of 10 QHTBs completed the survey with DBEDT on the Hawaii tax credit for research activities. It was 2.5 QHTBs smaller than the average number of QHTBs that submitted the survey for 2013-2018 tax year. All ten QHTBs have completed the research tax credit survey in the past for at least one tax year since 2013. QHTBs in this report refer to the ten companies unless otherwise stated.

Age of QHTBs

All QHTBs that submitted the Hawaii research tax credit survey for tax year 2019 have been doing business for many years. All except one company were established before 2010. Five QHTBs were established before 2000 whereas four QHTBs were established between 2000 and 2010 and one relatively recently in 2017.

Table 1. QHTBs by year established

Year established	~ 1990	1991-1999	2000-2005	2006-2010	2011 and after
Number of QHTBs	4	1	2	2	1

History of research activity was also long. All QHTBs except one established recently in 2017 reported that they had been undertaking the research activities for at least seven years.

Table 2. History of research activities

Years	Less than 7 years	7 years or longer
Number of QHTBs	1	9

Intellectual Properties

The ten QHTBs together owned or filed 66 patents with the U.S. Patents and Trademark office. As of December 31, 2019, a total of 39 patents were owned by the QHTBs while another 27 patents were filed and pending. However, not all QHTBs owned or have filed patents. In fact,

over 90 percent of the 66 patents were owned or filed by two QHTBs. Three other QHTBs owned or filed 5 patents together while other five QHTBs owned no patent at all.

Table 3. Patents owned or filed by QHTBs (as of Dec 31, 2019)

Total number of patents owned or filed by QHTBs			Number of QHTBs with at least one patent owned or filed	Number of QHTBs with more than 10 patents owned or filed
Owned or Pending	Owned	Pending		
66	39	27	5 out of 10	2 out of 10

Half of the QHTBs reported that they owned intellectual property other than patents such as copyrights and trademarks as of December 2019. QHTBs with no patent owned or filed tended to have no other type of intellectual property as well.

Table 4. Other intellectual property owned by QHTBs (as of Dec 31, 2019)

Total number of QHTBs that submitted tax credit surveys	Number of QHTBs with other intellectual property			
	Copyrights	Trade Secrets	Licenses	Trademarks
10	4	3	2	4

Business sector of QHTBs

The survey asked each QHTB to indicate all industry sectors in which the QHTB conducted business in 2019. Eight major business sectors consisting of eighty-four subsectors were provided in the survey as business categories. By broad category, half of the QHTBs indicated that they conducted business only in one business sector while another half of the QHTBs indicated that they did business in multiple sectors.

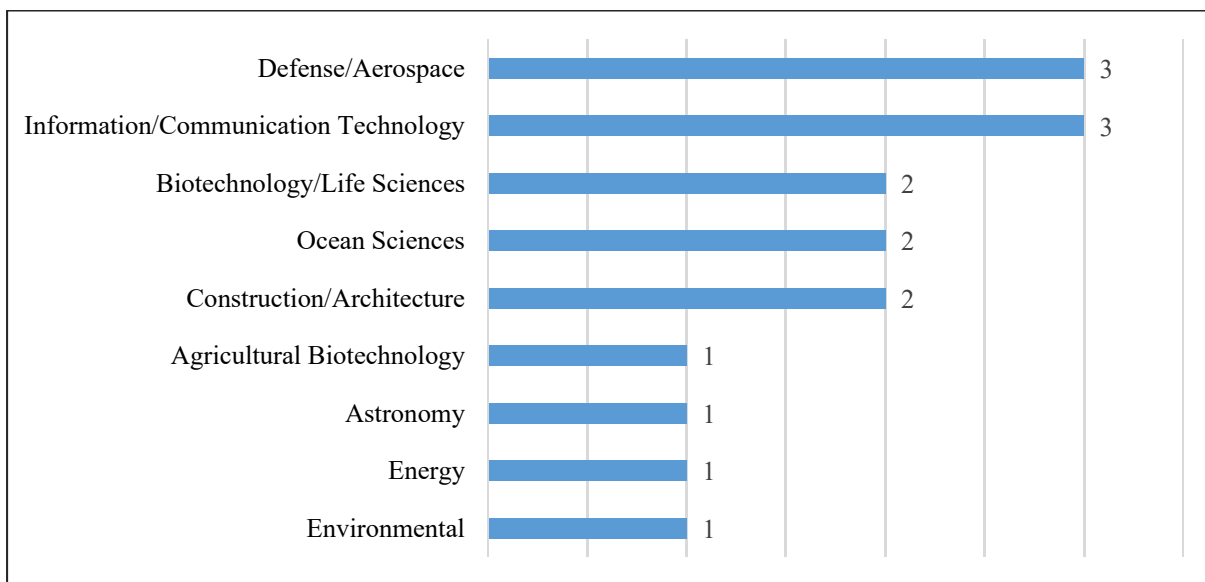
Table 5. Business areas of QHTBs in 2019 (number of QHTBs)

Business sectors		Number of QHTBs
One sector only	Architecture/Construction	2
	Biotechnology/Life Sciences	1
	Information/Communication Technology	1
	Ocean Science	1
Doing business in more than one sector		5

Figure 1 shows total number of QHTBs that conducted business in each industry sector in 2019, counting the multi-sector companies multiple times for all industry sectors they did business in.

“Defense/Aerospace” and “Information/Communication Technology” were the most popular business sectors among the QHTBs hosting three QHTBs each in the sector. Other business sectors that hosted at least two QHTBs in 2019 include “Biotechnology/Life Sciences”, “Ocean Sciences”, and “Construction/Architecture”.

Figure 1. Number of QHTBs that conducted business in each sector (with multiple counting) ¹



¹ Multi-sector companies were counted for all sectors in which they did business.

Table A-2 and Figure A-1 in the appendix at the end of this report show business activities of QHTBs by detailed business activity. Specialty software development in the Information/Communication Technology sector was the most prevalent business activity amongst the QHTBs who submitted the survey for tax year 2019. Specialty software development was the most prevalent business activity in tax year 2016 and 2018 as well, but it was in Defense/Aerospace sector.

3. Revenue and Spending Structure

Revenue structure of QHTBs

In 2019, the ten QHTBs generated a combined total of \$101 million revenue from all goods and services produced in Hawaii, of which 54.3 percent (\$54.8 million) was derived from out-of-state sales or activities.

About 30 percent of the total revenue was earned from intellectual properties that QHTBs produced in Hawaii. The combined revenue of the ten QHTBs from their intellectual properties, by selling patented products or licensing royalty, etc., was \$29.6 million in 2019. Most of the revenue from intellectual properties was earned from the sales in Hawaii while out-of-state sales made up only about 6 percent of the sales.

Table 6. Revenues of QHTBs, by revenue source

Source of revenue	Revenue in 2019	
Total revenue	\$100,973,161	100%
- from out-of-state sales	\$54,809,226	54.3%
Revenue from intellectual property	\$29,593,258	100%
- from out-of-state sales	\$1,742,684	5.9%

Hawaii expenses of QHTBs

The ten QHTBs spent a combined total of \$87,1 million in 2019 as operating expenses or capital expenditures for sales and activities performed in Hawaii.

Table 7. Operating and capital expenditure spent by QHTBs in 2019

Operating Expenses spent by QHTBs	Capital Expenditures spent by QHTBs
\$85,607,962	\$1,464,180

Table 8 presents where the QHTBs made the spending in 2019 by industry sector. About two third of the spending occurred in two sectors, “Defense/Aerospace” and “Film/Digital Media”. Defense/Aerospace sector received 35.6 percent (\$31.0 million) of the spending while Film/Digital Media sector received another 30.2 percent (\$26.3 million) of the spending.

By detailed categories, the subsector that received the largest QHTBs' spending in 2019 was Content Development in Film/Digital Media sector, with \$26.1 million, 30.0 percent of total spending, spent in this subsector. Other subsectors that received a large expenditure include Testing and Evaluation in Defense/Aerospace sector (\$22.4 million), Ocean Engineering (\$13.2 million), and Contract Research Organization in Biotechnology/Life Sciences sector (\$8.7 million).

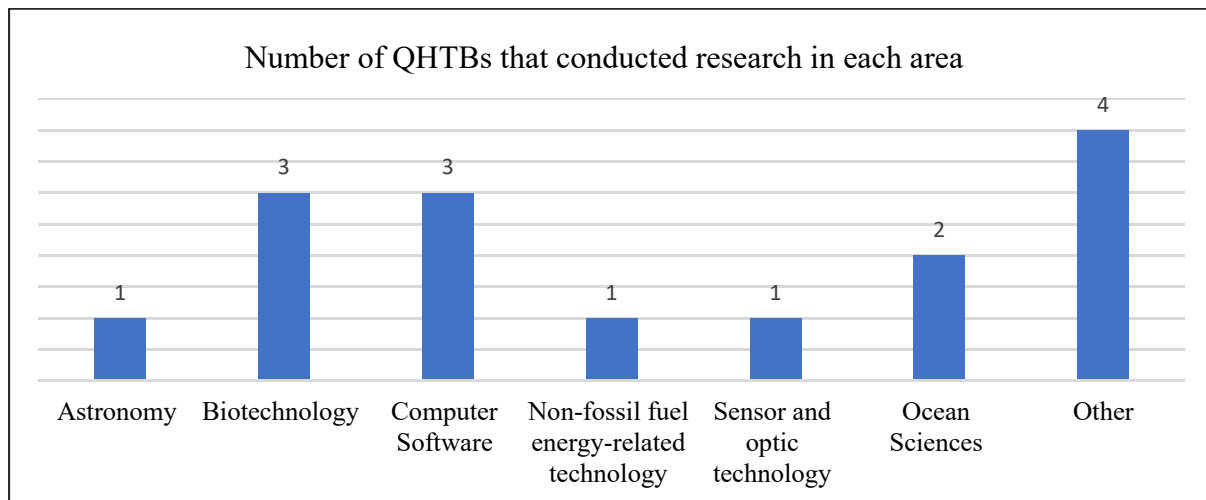
Table 8. Areas where QHTBs spent their operating and capital expenditures in 2019

All sectors	\$87,072,142	100.0%
Defense/Aerospace	\$30,963,588	35.6%
- Testing & Evaluation	\$22,368,800	25.7%
- Remote Sensing	\$3,002,588	3.4%
- Modeling/Simulation/Training	\$2,796,100	3.2%
- Unmanned Vehicles/Robotics	\$2,796,100	3.2%
Film/Digital Media	\$26,305,873	30.2%
- Content Development	\$26,134,066	30.0%
- Enhancer	\$171,807	0.2%
Ocean Science	\$13,156,925	15.1%
- Ocean Engineering	\$13,156,925	15.1%
Biotechnology/Life Sciences	\$9,447,678	10.9%
- Contract Research Organization	\$8,701,818	10.0%
- Marine Biotechnology	\$231,087	0.3%
- Other	\$505,773	0.6%
Information/Communication Technology	\$1,738,716	2.0%
- Specialty Software Development	\$1,372,361	1.6%
- Other	\$366,355	0.4%
Energy	\$1,729,057	2.0%
- Energy Efficiency	\$1,729,057	2.0%
Agricultural Biotechnology	\$77,029	0.1%
- Plant Tissue Culture	\$77,029	0.1%
Unidentified	\$3,653,276	4.2%

4. Research Activities and Tax Credit

Businesses were asked to indicate in which area(s) they conducted research during the year. Seven broad categories were provided in the survey. Figure 2 presents the number of QHTBs that conducted research in each area allowing multiple counting of a QHTB if it conducted research in multiple areas. Among the ten QHTBs, three companies reported that they conducted research in more than one area. “Biotechnology” and “Computer Software” were the most widely held research areas with three companies having conducted research in each area in 2019.

Figure 2. Areas where QHTBs conducted research in 2019



In defining “Qualified Research Activities” for the Hawaii research activity tax credit, Act 270 adopted §41 of the Internal Revenue Code, meaning that only incremental amounts are eligible for the credit, with a further requirement that qualified research activities do not include research expenses incurred outside of the state.

The ten QHTBs that completed the Hawaii research credit survey for tax year 2019 reported that they spent a combined total of \$22.4 million in research activities in Hawaii in 2019. Among those, \$20.7 million (92.3 percent) was eligible for the Hawaii tax credit for research activities (TCRA), and a total of \$1.6 million was claimed or to be claimed by the ten QHTBs for the tax credit on Form N346.

The amount that individual QHTB claimed for the Hawaii research tax credit varied significantly ranging from about \$500 to over \$400,000. Five among the ten QHTBs reported that they claimed \$200,000 to \$450,000 for the 2019 research credit on Form N346. All ten QHTBs reported that they paid zero corporate income tax for tax year 2019.

Table 9. Reported research expenses and tax credit for tax year 2019

Total Research Expenses occurred in Hawaii	Total Research Expenses eligible for Hawaii TCRA	Total Tax Credit reported for Hawaii TCRA
\$22,415,759 100%	\$20,682,903 92.3%	\$1,646,476

5. Job Characteristics and Creation

Employment overview

As of December 12, 2019, the ten QHTBs had a total of 437 regular employees. Most of the regular employees, 92.2 percent, were full-time employees. Also, majority of them worked in research sectors. About three out of four regular employees were employed in research sectors, which was true for both full-time and part-time jobs. The companies also hired a combined total of 40 workers on a temporary or seasonal basis during the calendar year 2019, 32 of them in research sectors.

Table 10. Number of employees in the QHTBs by employment status

	As of December 12, 2019			Temporary / Seasonal in 2019
	Total	Full-time	Part-time	
All areas	437	403	34	40
In research activities	332	308	24	32
Research activity jobs as % of total jobs	76.0%	76.4%	70.6%	80.0%

Employment size

Size of the ten QHTBs measured in the number of employees varied substantially. The number of regular employees in the QHTBs, as of December 2019, ranged as small as 0 to as big as over 100. Four companies were particularly small with no employee or less than five employees. On the other hand, three companies were relatively big with over 100 employees.

Table 11. QHTBs by employment size

Number of regular employees ¹ (as of December 12, 2019)	Number of QHTBs
0-5	4
6-10	1
11-25	0
26-50	2
51-100	0
Over 100	3

¹ Excludes temporary and seasonal employees

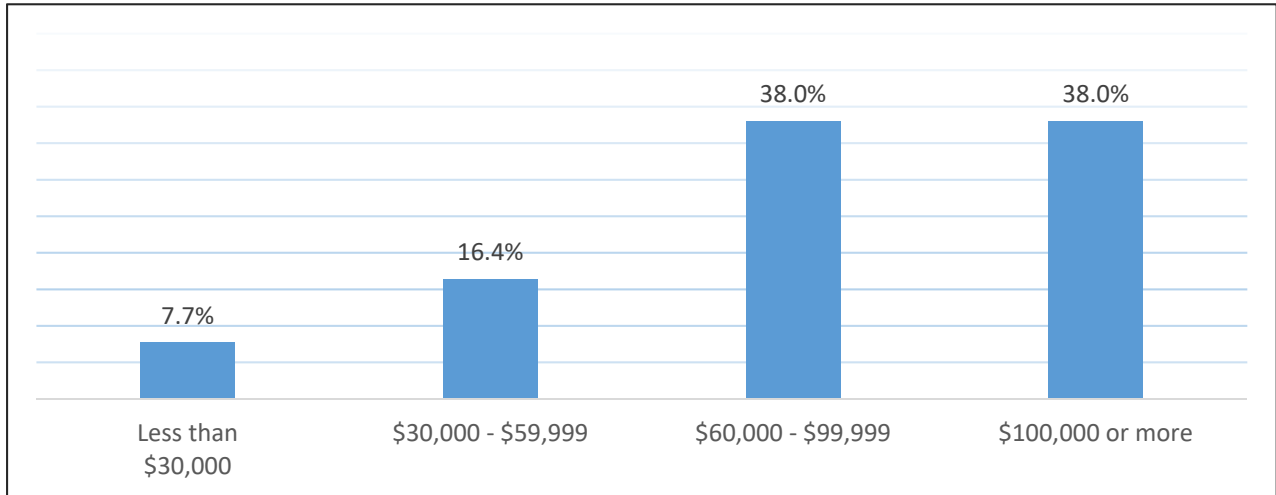
Compensation levels of jobs in QHTBs

Table 12 shows the number of employees and their shares of total employees by four wage groups. Over 75 percent of full-time employees in the QHTBs were paid \$60,000 and more annually, of which about half were paid more than \$100,000 annually.

Table 12. Full-time and part-time employees in 2019 by wage level

Annual wage	Full & Part-time		Full-time		Part-time	
	Jobs	Share	Jobs	Share	Jobs	Share
Total	437	100.0%	403	100.0%	34	100.0%
Less than \$30,000	37	8.5%	31	7.7%	6	17.6%
\$30,000-\$59,999	79	18.1%	66	16.4%	13	38.2%
\$60,000-\$99,999	166	38.0%	153	38.0%	13	38.2%
\$100,000 or more	155	35.5%	153	38.0%	2	5.9%

Figure 3. Full- time employees of QHTBs in 2019 by wage level



Job changes in QHTBs from the previous year

The combined number of jobs of the ten QHTBs showed a substantial increase in 2019 from the prior year. It is the third year since this new research activity tax credit was introduced in 2013 that the survey showed an increase in the combined total jobs of the QHTBs. Despite incremental research activities expected for the QHTBs the survey showed a decrease in the combined number of jobs in the QHTBs in four tax years since 2013.

The big increase in the combined total job of the ten QHTBs attributed to a company that almost quadrupled its number of regular employees for an increase of 95 employees from 2018 to 2019. However, many other QHTBs also reported an increase in the number of employees from 2018 to 2019 including two QHTBs with over 20 percent increase in the number of employees. Among the ten QHTBs that submitted the survey with DBEDT this year, only two QHTBs reported a slight decrease in its employment between 2018 and 2019. Job increases were observed both in research and non-research positions. In December 2019, the aggregate number of full-time research jobs in the ten QHTBs was higher than the prior year by 94 employees, showing 43.9 percent increase.

Table 13. Employment changes in QHTBs between 2018 and 2019

Type of Employment		2019	2018	Changes from 2018
Full-time &Part-time	In all areas	437	307	130
	In research activities	332	224	108
Full-time	In all areas	403	293	110
	In research activities	308	214	94
Part-time	In all areas	34	14	20
	In research activities	24	10	14

6. Impacts of QHTBs’ Activities on External Companies

Table 14 summarizes impacts of the QHTBs’ business activities on external companies in Hawaii. All except two QHTBs reported that they hired independent contractors or procured external services in 2019. The eight QHTBs spent a combined total of \$11.2 million to hire or procure 189 contractors or external services for jobs performed in Hawaii. Majority of this spending, 93.6 percent, was spent in the area of “Scientific and Technical Contract Services”.

The survey also asked if there was any new company established to commercialize the intellectual property owned by the QHTBs. The survey results indicated that there was no new company established in 2019.

Table 14. Impacts of QHTBs’ activities on external companies in Hawaii in 2019

Independent contractor expenses incurred by the QHTBs	\$11,188,667
Total number of independent contractors hired/external services procured by the QHTBs	189
Number of new companies established in Hawaii to commercialize the QHTBs’ intellectual property	0

7. Tax Credit Claimed with the State Department of Taxation

According to the State Department of Taxation, 15 claims (including corporations and individuals) were processed as of August 10, 2020 for the state research tax credit for tax year 2019. The total amount of the fifteen claims was \$1.04M.

The number and amount reported in the DBEDT survey and the tax credit claims processed by the Department of Taxation are not directly comparable for two reasons. First, the number of claims with the Department of Taxation for the tax credit may be greater than the number of surveys completed with DBEDT by the QHTBs because of the pass-through taxation. If a QHTB is a partnership or other pass-through entity, the tax credits earned by the QHTB are passed through to its individual members, who claim the tax credits on their tax returns. The second cause of the discrepancy is timing differences. The surveys completed by QHTBs this year were due June 30, 2020. If a taxpayer is an individual or corporation with a tax year same as the calendar year, the tax return for tax year 2019 was due April 20, 2020 and extended to July 20, 2020 due to the COVID-19 pandemic. With an automatic extension that the taxpayer can request, the due date may be further extended to October 20, 2020. Thus, the claims processed until August 2020 likely represent only a part of total claims that will be filed for tax year 2019.

However, the comparison of the claim amounts reported in the DBEDT survey with the complete data from the Department of Taxation for the prior tax years reveals that the discrepancies were more than the timing difference could explain. Summary statistics for tax credits claimed with the State Department of Taxation are now available for tax year 2013 to 2018. Compared with the credit amount reported in the survey with DBEDT, the total credit amount claimed with the Department of Taxation were about 70 percent to 165 percent bigger in all years except the first year. It suggests that not all businesses who claimed the tax credit with the State Department of Taxation completed the DBEDT survey.

Table 15. Research Activity Tax Credits Claimed with the State Department of Taxation

Tax Year	Claimed with State Department of Taxation			Credit Amount	Reported in the survey with DBEDT	
	Number of Claims				Number of QHTBs that completed the survey	Credit Amount
	All	Individuals	Corporations			
2013	25	13	12	\$1.3 M	10	\$1.1 M
2014	69	49	20	\$2.9 M	13	\$1.3 M
2015	57	33	24	\$2.9 M	12	\$1.1 M
2016	58	31 ¹	27	\$3.1 M	11	\$1.3 M
2017	54	35 ¹	19	\$2.5 M	15	\$1.3 M
2018	54	34 ¹	20	\$2.4 M	14	\$1.4M

¹ Includes two fiduciaries.

Appendix

Table A- 1. List of QHTBs that completed Hawaii TCRA survey with DBEDT

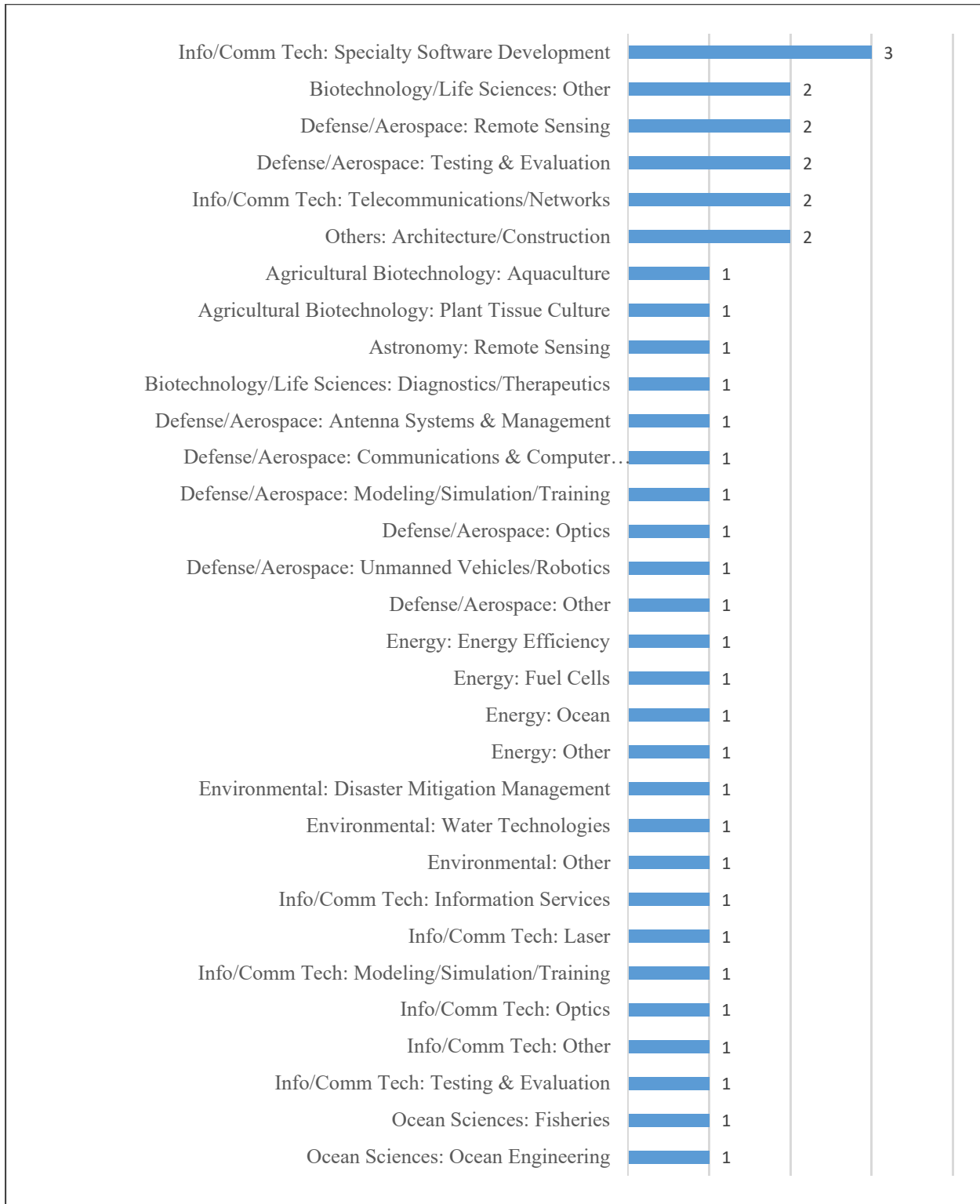
Company name	Business Location	Tax Year						
		2019	2018	2017	2016	2015	2014	2013
Architects Hawaii LLC	Honolulu County	o	o	o	o			
Advanced Integrated Photonics INC.	Culver City, CA							o
Alternative Energy Technologies, LLC	Honolulu County							o
AT&T Services, INC	San Antonio, TX		o	o				
Computer Software Associates, INC.	Maui County					o		
DataHouse Consulting, INC.	Honolulu County							o
DomeGaia LLC	Hawaii County	o	o					
Douglas W Toomey	Hawaii County					o		
Innovasc LLC	Honolulu County					o	o	
Kamakura Corporation	Honolulu County							o
Kuehnle AgroSystems INC.	Honolulu County	o	o	o	o	o	o	
Laulima Systems LLC	Kauai County						o	
Limitiaco Consulting Group. INC.	Honolulu County			o				
Makai Ocean Engineering, INC.	Honolulu County	o	o	o	o	o	o	o
Mauna Kea Infrared, LLC	Hawaii County	o	o	o				
Navatek Alternative Energy Tech.	Honolulu County		o	o	o			
Navatek CFD Technologies, LLC	Honolulu County		o	o	o	o	o	
Navatek Lifting Body Tech., LLC	Honolulu County		o	o	o	o	o	
Navatek LTD	Honolulu County	o	o	o	o	o	o	
Oceanit Laboratories, INC.	Honolulu County	o	o	o	o	o	o	o
Quantify IP	Honolulu County	o	o	o	o			
Resurgo, LLC	Honolulu County						o	
Spirent Communications Hawaii LLC	Honolulu County	o	o	o	o	o	o	o
Sustainable Bioresources, LLC	Honolulu County	o	o	o				
TeraSys Technologies LLC	Honolulu County						o	o
Tissue Genesis Institute, LLC	Honolulu County			o			o	o
Tissue Genesis, INC.	Honolulu County						o	o
Tritium Enterprises LLC	Honolulu County					o		
Velocitek INC.	Maui County				o	o		

Table A- 2. Business areas of QHTBs in 2019, by detailed activity

(A QHTB is counted multiple times if it conducted business in multiple areas)

Industry sector	Subsector	Number of QHTBs conducted business in the subsector
Agricultural Biotechnology	Aquaculture	1
	Plant Tissue Culture	1
Astronomy	Remote Sensing	1
Biotechnology/Life Sciences	Diagnostics, Therapeutics	1
	Other	2
Defense/Aerospace	Antenna Systems & Management	1
	Communications & Computer Systems	1
	Modeling/Simulation/Training	1
	Optics	1
	Remote Sensing	2
	Testing & Evaluation	2
	Unmanned Vehicles/Robotics	1
	Other	1
Energy	Energy Efficiency	1
	Fuel Cells	1
	Ocean	1
	Other	1
Environmental	Disaster Mitigation Management	1
	Water Technologies	1
	Other	1
Information/Communication Technology	Information Services	1
	Laser	1
	Modeling/Simulation/Training	1
	Optics	1
	Specialty Software Development	3
	Telecommunications/Networks	2
	Testing & Evaluation	1
	Other	1
Ocean Sciences	Fisheries	1
	Ocean Engineering	1
Others	Architecture/Construction	2

Figure A-1. Number of QHTBs that conducted business in each subsector, 2019



(A QHTB is counted multiple times if it conducted business in multiple areas)